Received 9 May 2021
Revised 17 August 2021
Accepted 14 September 2021

IFRS adoption and unconditional conservatism: an accrual-based analysis

Olga Fullana
Universitat de València, Valencia, Spain
Mariano González
UNED, Madrid, Spain, and
David Toscano
Universidad de Huelva, Huelva, Spain

Abstract

Purpose – In this paper we analyse the effect on unconditional conservatism of the mandatory adoption of International Financial Reporting Standards (IFRS) by the European listed firms in January 2005. Under the hypothesis that accounting regulation influences the accounting conservatism, we use a non-market-based measure of unconditional conservatism – the accrual-based measure proposed by Givoly and Hayn (2000) – to test this effect, controlling for the other determinants of the unconditional conservatism found in the accounting literature.

Design/methodology/approach – We use a panel data of 10 years and 96 non-financial listed firms in the Spanish stock market in which the differences between local GAAP and IFRS are more important. A pre-estimation analysis of the data reveals that GLS with random effects is the correct estimation procedure. However, to try to deal with the likely endogeneity in the set of variables, the authors perform an estimate with a dynamic estimator for panels with few periods and many individuals where the independent variables are not strictly exogenous.

Findings – As expected, results show evidence that support a significant reduction on the unconditional conservatism of firms in the sample due to the adoption of IFRS. This evidence is relevant to equity market, debt market and corporate governance users of the financial information, and also for the policymakers who can assess the effects of their mandate.

Research limitations/implications – Results shown in this paper have all the limitations of system-, country-, sample- and event-specific studies but, along with many others drawn in alternative contexts, may help to correctly understand both the time-evolution and cross-sectional country differences of firms' unconditional conservatism.

Originality/value – The study represents the first analysis of the effect of the adoption of IFRS on unconditional conservatism of the European listed companies using a non-market accrual-based measure. Results are not influenced by the dynamics of the stock market and, by comparison, allow us to analyse this

JEL classification – M41, G14, G32

The authors are grateful for the comments from María del Mar Camacho, Manuel Cano, and an anonymous referee from the XVII International ASEPUC Conference (Madrid, 2018), from Kooi S. Yeap in the 7th Paris Financial Management Conference (2019), and from Prof. Juan M. Nave in the Seminars on Empirical Finance Research at UCLM (Cuenca, 2020). The authors are also grateful for comments and suggestions from three referees of *IJAIM* and from its editor Prof. Chunhui Liu. The final version of this paper was written when David Toscano was visiting the Department of Accounting at the Universitat de València (Spain).

Funding: Spanish Government MICINN-AEI PID2020-114563GB-I00.

International Journal of Accounting & Information Management
Vol. 29 No. 5, 2021
pp. 848-866

1834-7649
DOI 10.1108/IJAIM-05-2021-0093

influence in results provided by using market-based measures of the unconditional accounting conservatism provided by previous literature.

Keywords Accounting-based measure, Accrual-based analysis, European listed firms, Mandatory IFRS adoption, Unconditional conservatism

Paper type Research paper

1. Introduction

Accounting conservatism is an important concept in the firms' financial information that implies the exercise of being cautious in the recognition and measurement of results and net assets of the company (Basu, 1997; Watts, 2003, and Ball *et al.*, 2013). Givoly *et al.* (2007) cite as the only "official" definition of conservatism the one offered in the glossary of Statement of Concepts No. 2 of the FASB, where it was defined as "a prudent reaction to uncertainty to try to ensure that uncertainty and risks inherent in business situations are adequately considered". However, despite its central role in accounting theory and practice, there is no single accepted definition mainly because, as Basu (2005) argues, we can observe two distinct types of accounting conservatism: one related to the income statement, and the other related to the balance sheet of the company.

In this regard, the literature usually treats separately these two types of accounting conservatism:

(1) the unconditional conservatism (Watts, 2003; Beaver and Ryan, 2005; Givoly *et al.*, 2007), which implies the systematic and independent persistence to underestimate the net assets of the company through policies and methods that are conservative [1], and have a negative influence on the quality of accounting information; and

(2) the conditional conservatism that refers to the high degree of prudence required to recognize good news (gains) versus bad (losses) (Basu, 1997) [2], reducing the discretion of managers to manipulate results (Dechow *et al.*, 2010).

Under the hypothesis that accounting regulation influences the accounting conservatism, in this paper, we analyse the effect of the mandatory adoption of International Financial Reporting Standards (IFRS) on unconditional conservatism. The European listed firms have to prepare mandatorily their financial statements under IFRS from January 2005. As Hung and Subramanyam (2007) note, this mandate "arguably is one of the most important events in the history of financial reporting" and focuses on the accounting harmonization, searching for transparency and quality in the accounts reported by European companies. In this context, the change from GAAP to IFRS could have a significant impact on the conservatism, being relevant for the policy makers, practitioners and academics. We would expect that the transition from the continental GAAP to the IFRS to reduces the overly conservative practices achieving a more adjusted representation of the economic firm conditions to the reality.

Several reasons lead us to focus on the unconditional conservatism:

- in continental accounting systems it is more likely to have a high level of unconditional conservatism due to the important influence that tax regulations have on them;
- unconditional conservatism is a feature of financial information to be eradicated, contrary to the more desirable conditional conservatism; [3] and
- the previous evidence in the empirical literature, showing a trade-off between unconditional conservatism and conditional conservatism [4], which anticipates a

minor relative importance of the level of conditional conservatism in the continental accounting systems where a high level of unconditional conservatism is expected (García-Lara *et al.*, 2008).

Using different methodologies, variables and samples, the previous literature in the context of this work shows mixed evidence. In fact, all the possible qualitative evidence: increases, reductions and statistically insignificant changes in the unconditional conservatism are shown and simultaneously justified. However, in all the previous literature analysed, authors measure firms' unconditional conservatism using market-based proxies. As Beaver and Ryan (2000) argue, the permanent bias from one in book-to-market (hereinafter BtM) or related ratios, results from effects of the accounting processes that include conservatism together with others processes such as historical cost. Moreover, that bias also results from the micro- and macro-economic environment, e.g. expected positive actual value projects and inflation, respectively.

To control correctly for all the factors other than conservatism that explain the BtM ratio bias is difficult. Consequently, results of analyses that use market-based measures of unconditional conservatism may be biased, distorting their conclusions. In this way, we perform our analysis using an accounting-based measure of unconditional conservatism. Concretely, we use for the first time in this context the measure proposed by Givoly and Hayn (2000) based on accruals that capture the effect on the income statement of conservative practices using non-market information. Under this framework, our accrual-based analysis recognizes that conservatism is essentially an issue related to the timing and sequencing of revenues and expenses relative to the associated cash flows. We also control for all the other explanatory factors that affect unconditional conservatism already used in the previous literature [5].

In our empirical analyses, we use a ten-year representative sample of non–financial companies centred on January 2005. As Nobes (1998) notes, prior to the adoption of IFRS, the level of conservatism differs between countries due to cultural (Cieslewicz, 2014) and legal reasons, the financial system structure and other incentives of the companies. Thus, it is expected that the effects of IFRS adoption differ among countries, especially when more recent evidence shows that these effects also depend on previous GAAP (Kvaal and Nobes, 2010; Martínez *et al.*, 2011; Haller and Wehrfritz, 2013; Filip and Raffournier, 2013; and Nobes and Perramon, 2013).

This fact justifies country-specific analyses. So, among the listed firms in the main European stock markets we choose those listed in the Spanish stock market where there are more differences between local GAAP and IFRS. Concretely, among the 21 possible accounting treatments to be reconciled, Bae *et al.* (2008) found 16 differences between Spanish GAAP and IFRS. Therefore, it is expected that changes in the unconditional conservatism due to the IFRS adoption in the Spanish listed firms are more significant and more clearly observable than in other European countries where these differences are minor. Aligned with this expectations, our results show a significant reduction in the unconditional accounting conservatism.

The rest of this work is structured as follows. In Section 2, we analyse the seminal literature on the effect that accounting standards have on balance sheet conservatism. In Section 3, we develop the hypotheses maintained throughout the study, we introduce the Givoly and Hayn (2000) accrual-based measure of the unconditional conservatism, and we present the methodology developed in Ahmed and Duellman (2007) that we adapt to the analysis of the effect of the change in accounting regulations on balance sheet conservatism. In Section 4, we describe the data used. Section 5 is dedicated to showing the results obtained for the different specifications of the

proposed model. A robustness analysis is conducted in Section 6. Finally, in Section 7, we conclude.

2. Analysis of the previous literature

Watt (2003) provides a review of the literature that has focused on analysing the existence of unconditional conservatism, the different factors that motivate it and its impact on the relationships between the different users of accounting information. Among this literature, we find a set of works focused on the incidence of accounting standards on balance sheet conservatism. This analysis is carried out in the literature in a natural way by cross-section analyses: in different countries with different regulations, we should find different degrees of unconditional conservatism under the hypothesis that the accounting standards determine the degree of accounting conservatism and under the *ceteris paribus* clause. Or, alternatively, by time-series analyses: in the same country in periods with different applicable accounting standards, either by the time evolution of the rules or by changes in its legislation, depending on whether it is an Anglo-Saxon or a continental accounting system, there should be different degrees of balance conservatism.

Regarding this topic, the pioneering work of Joos and Lang (1994) investigates the effects on financial statements of differences in accounting measurement practices, concretely in France and Germany (continental systems) and UK (Anglo–Saxon system). To measure balance sheet conservatism in these countries in the same period (1982–1990) they use the BtM ratio and the value relevance relation of the book value of equity. Theirs findings show that in all cases there is unconditional conservatism, although the effect is higher in the two countries with a continental accounting system. Then, Joos (1997) corroborates their conclusions by analysing only the value relevance relation but extending the sample until 1993 [6].

As Ball *et al.* (2000) state, there are important differences in conservatism between common-law countries (Australia, Canada, USA and UK) and code-law countries (France, German and Japan) showing different times in incorporating value-relevant information. In this context, García-Lara and Mora (2004) extend prior research on the international analysis for accounting conservatism by examining the level of accounting conservatism across eight European countries. Using the country-specific market-to-book aggregate measure (hereinafter MtBa) proposed by Givoly and Hayn (2000), these authors find balance-sheet conservatism practices in all countries analysed for the period 1987–2000 as well as a higher incidence of them in countries with continental accounting systems [7].

In the US context, most of the related literature analyses the degree of balance–sheet conservatism in different time periods, trying to capture the incidence of the evolution of accounting standards in an Anglo-Saxon accounting system. Among others, it is worth highlighting the works of Stober (1996) and Givoly and Hayn (2000) in which using the market-to-book (hereinafter MtB) and MtBa ratios, respectively, as proxy of unconditional conservatism, they find that in three decades this ratio has been greater than one, proving the existence of balance–conservatism in US listed firms. Surprisingly and against expectations, they observe an increase of unconditional conservatism over time.

Among works that analyse the changes on unconditional conservatism caused by accounting reforms, we highlight the work of Giner and Rees (1999) focused on the Spanish market. For the period 1986–1995, they analyse the Spanish accounting reforms during 1989 and show only a modest improvement in value relevance of accounting information, concluding that there were no significant changes in the balance–sheet conservatism by this legal mandate. The scope, measures and methodologies used, and findings of this literature are summarized in Table 1 Panel A.

	Joos and Lang (1994)	Stober (1996)	Joos (1997)	Giner and Rees (1999)	Givoly and Hayn (2000)	García-Lara and Mora (2004)
Measure(s)	BtM BVSC	MtB BVSC	BVSC	BVSC	MtBa Accruals	MtBa BVSC
Approach	VR Median test	VR Regression	VR	VR	Median Test	VR Median test
Scope	Anglo-Saxon and continental countries	USA	Anglo-Saxon and continental countries	Spain	USA	Anglo-Saxon and continental countries
Standards effect	×	✓	×	✓	✓	✓
Country effect	✓	×	✓	×	×	✓
Unconditional conservatism	✓	✓	✓	×	✓	✓
Time effect	–	+	–	×	+	–

Table 1.
Seminal works on unconditional conservatism

Notes: BtM: Book-to-Market ratio; MtB: Market-to-Book ratio; MtBa: Aggregated Market-to-Book ratio; BVSC: Book Value Slope Coefficient; VR: Analysis of the value relevance of the Book Value. Median test: Analysis based on the significance of the differences between medians. Time effect sign refers to an increase in conservatism (+) or a decrease in conservatism (–) over time

With respect to the empirical analysis of the effect of the mandatory adoption of IFRS on unconditional conservatism of a European stock market listed firms, the most recent work found in the literature is Fullana *et al.* (2019), which offers a detailed review of the previous works in that context. That work follows the market-based methodology of Ahmed and Duellman (2007) that considers the value of the growth options included in the firms' market value (Roychowdhury and Watts, 2007), as well as possible explanatory factors of unconditional conservatism not related to accounting principles (Nobes, 1998; Ball *et al.*, 2003; Ding *et al.*, 2007). Furthermore, given that Ahmed and Duellman (2007) methodology uses current and delayed autocorrelated financial and accounting variables that can include dependence between the regressors and the model residuals, i.e. endogeneity problems, these authors estimate the model using dynamic panel data with the inclusion of instrumental variables, following the recommendation of Larcker and Rusticus (2010) to avoid it. Their results provide evidence supporting the hypothesis that the adoption of IFRS has reduced the unconditional conservatism of Spanish listed companies.

3. Hypothesis and methodology

3.1 Main working hypothesis

In countries with continental accounting systems, the application of IFRS implies a drastic change in accounting practices with respect to the previous application of local GAAP. In these countries, local GAAP are very conservative, thus there is a high propensity for unconditional conservatism that generally occurs at high levels. In this context, as we previously noted, it is expected that the transition from the GAAP to the IFRS reduce these conservative practices, thereby reducing the undervaluation bias of the net assets, and achieving a representation of the economic conditions of the company more adjusted to reality.

In Table 2, we detail the differences between the IFRS and Spanish GAAP, the IFRS references involved, and the expected effect of changing from Spanish GAAP to IFRS on unconditional conservatism: negative in the cases that IFRS reduce unconditional conservatism; positive in the cases that they increase it; or neutral when IFRS adoption does

IFRS reference (IAS number)	Differences	Unconditional conservatism
Conceptual framework	Accounting principle of prudence diminishes its relevance	(–)
Financial Statements: Balance Sheet, P&L, Memory and Treasury (IAS-1 and 7)	The IAS requests other states (treasury and equity changes). In the balance the classifications vary, although without evaluative effects. In the income statement, more items are admitted as activity (non-recurrence disappears) and income and expense compensation is allowed	(–)
Inventories (IAS-2)	The IAS do not admit LIFO	(+)
Merge and acquisitions (IAS-3)	The IAS do not admit the amortization of the goodwill, but the depreciation of the non-reversible value	(+ –)
Accounting policies and events after closing (IAS-8 and 10)	The IAS indicate that the corrections (errors) and accounting changes must adjust the equity, while in GAAP results are adjusted	(+ –)
Construction Contracts (IAS-11)	Industry accounting plan of construction companies is similar, except in the grouping and segmentation of contracts, which is not considered. In addition, the IAS only admit the realization method to recognize income. For other sectors, collecting the assets and liabilities from the agreement is something not established in the GAAP	(+ – Neutral)
Incomes Taxes (IAS-12)	The IAS apply the balance sheet method and the GAAP of the income statement. The IAS put limits to deferred tax liabilities, while the GAAP do not. The IAS allow compensation between assets and liabilities	(+)
Listed companies information: segmentation, earning per share and intermediate statements (IAS-14, 33 and 34)	The IAS do not have regulation for intermediate states and benefit per share. Regarding the segments, it only applies to some sectors such as electricity	Neutral
Property, plant and equipment (IAS-16)	In addition to the cost or acquisition price, fair value is applied and therefore the recording of changes in the value of the asset	(–)
Leasing (IAS-17)	To classify a leasing as financial there are more possibilities in the IAS	(+ –)
Revenues (IAS-18)	The IAS admit the fair value to be valued and to recognize to the certain the services rendered and not invoiced, as a final stock	(–)
Employee remuneration (IAS-19)	The IAS are more complete both in the classification and in the valuation, introducing actuarial methods	(–)
Subsidies (IAS-20)	The IAS include two accounting treatments, one applied in the GAAP as a deferred imputation of an income, and another as a lower value of the asset. But in Spain only the first one	(+ Neutral)
Foreign currency (IAS-21)	The IAS impute to the results the differences in value due to variations in the exchange rate, while the GAAP only charge the negative ones	(–)
Interest expenses (IAS-23)	In the activation of debt interests that finance the construction of assets, the IAS allows the activation of all financial expenses, which in its case will imply deterioration in value, while the GAAP have the limit in the market value. Also in the IAS the activatable expenses will be the interest minus the returns of the funds temporarily invested and not used	(–)

(*continued*)

Table 2.
Differences between IFRS and Spanish GAAP

IFRS reference (IAS number)	Differences	Unconditional conservatism
Linked transactions (IAS-24)	There is a similar treatment on the information to be presented, but in the IAS a greater type of link is included	(+)
Consolidation Financial Statements and investee companies (IAS-27, 28 and 31)	Different consolidation criteria. Different valuation criteria of the investees that are not consolidated	(–)
Inflation (IAS-29)	Not treatment in GAAP	Neutral
Financial assets (IAS-32 and 39)	These IASs are completely different from the basic criteria of the GAAP. Change valuation, classification, hedge, (everything). Treasury stock reduces equity and does not allow obtaining results due to the change in value	(+ –)
Asset depreciation (IAS-36)	The IAS introduce the concept of recoverable amount that depends on fair value and value in use, and the reversal of the loss can be attributed, depending on the case, to results or against equity	(+ –)
Provisions and contingencies (IAS-37)	The main difference is the method of valuation of long-term provisions (amortized cost)	(–)
Intangible assets (IAS-38)	The IAS only admits the capitalization of the development expenses, allows the valuation at fair value, register assets without defined useful way and without the possibility of reversing reversible losses. The IAS do not admit the activation of constitution and similar expenses (decrease of own funds)	(+ –)
Real state investments (IAS-40)	The IAS allow, in the valuations subsequent to the acquisition, to apply to investments in addition to the cost, the fair value. It also differs according to use; basically to obtain rent (rent) or to obtain goodwill (sale or inventory), in this second case the asset is not amortized	(–)

Table 2.

not affect unconditional conservatism. Table 2 shows that while in ten cases a reduction in unconditional conservatism is expected, in contrast, only in two cases an increase in unconditional conservatism is expected. In the rest of the cases, the sign-undetermined effects would be offset, at least partially. All this leads us to the following working hypothesis:

> The mandatory adoption of IFRS by Spanish listed companies has reduced their unconditional conservatism.

3.2 Accrual-based measure of unconditional conservatism

Givoly and Hayn (2000) focus on the effects of unconditional conservatism on the income in the medium- and long-term. According to these authors, the differences between the results of the company and the cash flows should revert in the long term. In this way, conservative practices would persistently lead to negative differences in the accruals against what was expected. This suggests that the average of those differences over a reasonable period would provide a proxy for their conservatism.

Following Givoly and Hayn (2000) and Ahmed *et al.* (2002), we define this measure of conservatism as earnings before extraordinary items minus the operating cash flow plus the amortizations deflated by the average of the assets of the previous three years. Therefore, high positive values of this measure would indicate a greater degree of unconditional conservatism.

The measure built considers assets and current debts, deferred taxes, gains or losses on sales of assets, provisions for bad debts and deferrals in recognition of income and expenses. Thus, administrators can exercise this conservatism discretely, both in terms of amounts and in terms of each of the accounting events.

3.3. *Ahmed and Duellman's (2007)* model

With the aim of isolating the real effect of IFRS implementation on average of unconditional conservatism of sample companies, we have also to control for the variations in unconditional conservatism due to the idiosyncratic factors not related to the accounting standards [8]. To do this, we adopt the methodology followed in Ahmed and Duellman (2007) where they use an accounting proxy of unconditional conservatism. In this context, it would not make sense to incorporate the value of the growth options (the Beaver and Ryan's delay component) linked to the firm market yields, but other idiosyncratic control variables as follows:

- A size variable that includes an *a priori* indeterminate effect, since although large companies face higher political costs and therefore tend to be more conservative, as La Fond and Watts point out (2008), in these firms more information is also required from stakeholders, and this could reduce their accounting conservatism.
- The growth of sales, as argued by Ahmed *et al.* (2002), is likely to affect the measure of unconditional conservatism based on the proposed measure for two reasons: The first is that growth affects accruals through inventories and debtors' accounts; The second is that in those companies in which sales fall is likely that this measure of accruals is a poor measure of accounting conservatism. Therefore, following Ahmed *et al.* (2002), we expect a negative effect of sales growth on unconditional conservatism.
- The costs of research and development as they are likely to capture the income generated by the operating assets and opportunities, as proposed by Ahmed (1994).
- The debt level, with a negative effect on balance conservatism as, as Ball *et al.* (2008) argues, unconditional conservatism is inefficient, or at best neutral, in debt contracting processes, thus companies claiming debt try to reduce it. The results of Ball *et al.* (2008) corroborate that debt markets do not demand balance-sheet conservatism.
- The litigation risk, since firms that overestimate earning and equity are expected to have a higher litigation risk and conservatism would reduce the ability of managers to do so (Qiang, 2007). As Field *et al.* (2005) note, technology companies are exposed to this risk to a greater extent.

In this way, the econometric model to be estimated would remain as follows:

$$CON - ACC_{i,t} = constant + \beta_0 \cdot IFRS_{i,t} + \beta_1 \cdot Size_{i,t} + \beta_2 \cdot SGR_{i,t} + \\ + \beta_3 \cdot RD_{i,t} + \beta_4 \cdot Debt_{i,t} + \beta_5 \cdot Litigation_{i,t} + \varepsilon_{i,t} \quad (1)$$

where, for each company i and year *t*:

CON-ACC is earnings before extraordinary items minus the operating cash flow plus depreciation deflated by the average of the assets of the previous three years;

IFRS is a dichotomous variable equal to one if the explained variable belongs to the IFRS-period (2005–2009) and equal to zero if it belongs to the GAAP-period (2000–2004);

Size is the natural logarithm of the average total assets;

SGR	is the annual percentage of sales growth;
RD	is the expenditure on research and development divided by sales;
Debt	is the total debt divided by the market value of own funds; and
Litigation	is a dichotomous variable equal to zero if the firm belongs to the technological sector and one otherwise.

In model (1), the coefficient that accompanies the dichotomous variable *IFRS* reflects the effect of adopting the new regulation on the firms' unconditional conservatism in January 2005. Under our working hypothesis, the value of this slope parameter should be negative and significant, indicating that after the implementation of IFRS there has been a reduction in firms' unconditional conservatism measured by the variable *CON-ACC*.

4. Sample

We have used the sample of Spanish continuous market listed companies from Compustat Global Vantage. From the initial 150 firms, we have removed the financial companies obtaining 119 companies. From this sample, with data available for the study period, there are 96 companies, which are finally selected. From Compustat the following variables have been used: Total assets, sales growth rate, R&D expense, operating cash flows, total debt, inventories, debtors' accounts, other current assets, accounts of creditors, other current liabilities and sectors. To get an usual symmetric window of five years around IFRS implementation in January 2005, these variables refer to the period 2000–2009.

Table 3 shows a summary of the sample, the number of observations for each of the variables and the number of companies for the sectorial classification of the Madrid Stock Exchange. From the variables obtained from Compustat, we have calculated the measure of unconditional conservatism accrual-based as detailed in the methodological section. We eliminated atypical values influence by removing the one per cent tails. After this, the total

Panel A. Sample firms	
Spanish continuous market	150
Financial firms	29
Non-financial firms	119
Non-financial firms with available data for period 2000-2009	96
Observations	736
Outliers	14
Panel B. Variables and total observations	
Assets	722
Sales growth rate	722
R&D expenses	722
Operating cash flow	722
Debt	722
Inventory, debtors, other current assets, creditors and other current liabilities	722
Panel C. Firms by industry	
Oil and energy	11
Commodities	31
Consumer goods	32
Consumer services	16
Technology and communications	6

Note: Data from Compustat Global Vantage for Spanish listed companies for the years 2000 to 2009

Table 3.
Sample firms, variables and observations

number of observations per variable is 722: 309 belong to the GAAP-period and 413 to the IFRS-period.

Table 4 shows the descriptive statistics for the measure of unconditional conservatism (*CON-ACC*) for the full sample period in Panel A, and for the GAAP- and IFRS-period in Panel B and Panel C, respectively. The number of observations, the mean, the standard deviation, the minimum and the maximum values have been reported for both the measure of unconditional conservatism and the control variables used. The *CON-ACC* has an average of 0.0299 for the period 2000–2009. These statistics highlight the different orders of magnitude of the control variables and the measure of conservatism that condition the orders of magnitude of the parameters that define their relationship.

When we analyse the change in the measure of conservatism by comparing Panel B and panel C data, it seems that, on average, our initial hypothesis of the effect of the implementation of IFRS on unconditional conservatism is found as this average changes from 0.0347 in the GAAP-period to 0.0262 in the IFRS-period. However, observing the standard deviations, we cannot ensure that these period means are statistically different with a shallow analysis.

	Obs.	Mean	SD	Min.	Q1	Med.	Q3	Max.
Panel A. Full Sample (2000-2009)								
CON-ACC	722	0.0299	0.0342	−0.0764	0.0128	0.0321	0.0505	0.1271
Size	722	2.9073	0.8020	1.1779	2.3025	2.8423	3.4071	5.0311
SGR	722	0.0939	0.2811	−0.6121	−0.0379	0.0513	0.1621	2.9753
RD	722	0.0024	0.0208	0.0000	0.0000	0.0000	0.0000	0.4130
Debt	722	1.7450	2.8937	0.0200	0.5183	1.0071	1.8489	32.2295
Litigation	722	0.0540	0.2262	0.0000	0.0000	0.0000	0.0000	1.0000
Panel B. GAAP period (2000-2004)								
CON-ACC	309	0.0347	0.0347	−0.0657	0.0168	0.0383	0.0558	0.1271
Size	309	2.7743	0.7509	1.1779	2.2281	2.6685	3.2633	4.8936
SGR	309	0.0764	0.2782	−0.5299	−0.0391	0.0272	0.1309	2.9753
RD	309	0.0006	0.0039	0.0000	0.0000	0.0000	0.0000	0.0505
Debt	309	1.5235	2.8114	0.0200	0.4529	0.8883	1.6074	25.8881
Litigation	309	0.0421	0.2011	0.0000	0.0000	0.0000	0.0000	1.0000
Panel C. IFRS period (2005-2009)								
CON-ACC	413	0.0262	0.0334	−0.0764	0.0106	0.0285	0.0456	0.1271
Size	413	3.0068	0.8251	1.3060	2.3706	2.9669	3.5249	5.0311
SGR	413	0.1069	0.2829	−0.6121	−0.0333	0.0677	0.1805	1.7246
RD	413	0.0038	0.0273	0.0000	0.0000	0.0000	0.0000	0.4130
Debt	413	1.9107	2.9462	0.0320	0.6050	1.1290	1.9865	32.2295
Litigation	413	0.0630	0.2432	0.0000	0.0000	0.0000	0.0000	1.0000

Notes: For each variable, the mean, the standard deviation (SD), the minimum value, the first and third quartiles (Q1, Q3) and the maximum value are reported. CON–ACC is the accounting conservatism accrual-based measures inflation-adjusted; Size is the natural logarithm of the 3-years average of total assets; SGR is the inflation–adjusted annual sales growth rate; RD is the expenditure in R&D divided by sales inflation-adjusted; Debt is total debt (short and long term) divided by the book value of equity inflation-adjusted; and Litigation is a dichotomous variable equal to zero if the firm belongs to the technological sector and one otherwise. The total number of observations in the full sample per variable is 722. The number of observations in the GAAP period and IFRS period is 309 and 413, respectively

Table 4.
Summary statistics of variables

In Table 5 Panel A, we present the correlation coefficients between the measurement and the different control variables for the total sample. We use the Pearson correlation (point-biserial correlation) coefficient between continuous (continuous and dummy) variables and indicate when its significance reaches a level of 5%. We can observe that the measure of unconditional conservatism is negatively and significantly related to *SGR* and positively and significantly related to *Size*. However, *RD*, *Debt* and *Litigation* are not significantly correlated with our variable of interest at 5% level.

When we analyse the correlations between variables in the GAAP- and IFRS-period in Table 5 Panel B and Panel C, we observe that: an increase in the intensity in the relationships for the variable *Size* and *Debt*, i.e. companies with large size and high debt ratios tend to be more conservative in the IFRS-period; a reduction in the IFRS period of the effect of R&D expenses (*RD*) and *Litigation* on unconditional conservatism; and a stable relationship between the sales growth rate (*SGR*) and unconditional conservatism.

5. Model estimation results

Table 6 shows the results for the econometric model estimates. To highlight the effect that the inflation adjust has, we show results of two alternative estimates: one with non-inflation-adjusted variables in column (1) and another with inflation adjusted variables in column (2).

Variables:	CON-ACC	Size	SGR	RD	Debt
Panel A. Full Sample (2000-2009)					
CON-ACC					
Size	0.1135*				
SGR	−0.2424*	0.0372			
RD	−0.0058	−0.0461	0.0098		
Debt	0.0416	0.2242*	−0.0319	−0.0369	
Litigation	0.0337	0.0542	0.0327	0.0589	−0.0573
Panel B. GAAP period (2000-2004)					
CON-ACC					
Size	0.1069				
SGR	−0.2532*	0.1364*			
RD	0.0468	−0.1453*	−0.0228		
Debt	0.0246	0.1283*	−0.0090	−0.0291	
Litigation	0.1793*	0.0122	−0.0397	0.2346*	−0.0540
Panel C. IFRS period (2005-2009)					
CON-ACC					
Size	0.1529*				
SGR	−0.2264*	−0.0414			
RD	−0.0001	−0.0602	0.0099		
Debt	0.0693	0.2753*	−0.0543	−0.0522	
Litigation	−0.0498	0.0684	0.0731	0.0484	−0.0646

Notes: Correlation is calculated by using Pearson coefficient. *5% significance level. CON–ACC is the accounting conservatism inflation-adjusted accrual-based measures; Size is the natural logarithm of the three-years average of total assets; SGR is the inflation–adjusted annual sales growth rate; RD is the inflation-adjusted expenditure in R&D divided by sales inflation–adjusted; Debt is total debt divided by the book value of equity inflation–adjusted; and Litigation is a dichotomous variable equal to zero if the firm belongs to the technological sector and one otherwise. For Litigation a point biserial correlation and tests have been performed (true Pearson product-moment correlation). The number of observations in the full sample and the GAAP and IFRS periods is 722, 309 and 413, respectively

Table 5.
Correlations

	(1) CON-ACC GLS-Random	(2) CON-ACC GLS-Random	(3) CON-ACC GMM-SYS	(4) CON-BtM GMM-SYS
IFRS	−0.005 (0.096)	−0.008*** (0.000)	−0.017*** (0.000)	−0.364*** (0.000)
Size	0.010** (0.004)	0.008** (0.004)	0.008* (0.021)	0.342*** (0.002)
SGR	−0.030*** (0.000)	−0.024*** (0.000)	−0.027*** (0.000)	1.122*** (0.004)
RD	0.020 (0.758)	0.021 (0.763)	0.320 (0.832)	37.167 (0.301)
Debt	0.001 (0.415)	0.000 (0.451)	0.000 (0.348)	5.415** (0.014)
Litigious	0.004 (0.756)	0.004 (0.659)		
CFO				−0.213*** (0.001)
Constant	0.009 (0.359)	0.011 (0.192)	0.017 (0.157)	−1.855*** (0.000)
N	722	722	722	722
Wald test	54.48 (6) (0.000)	58.84 (6) (0.000)	58.94 (5) (0.000)	48.98 (6) (0.000)
Sargan test			89.46 (0.964)	36.54 (0.627)
AR (2)			0.9127 (0.3614)	0.9852 (0.3240)

Notes: The estimated coefficient and *p*-value (below and in parentheses) are reported. CON-ACC is the accounting conservatism accrual-based measures; IFRS is a dummy variable equal to one for the IFRS period (2005-2009) and equal to zero for the GAAP period (2000-2004); Size is the natural logarithm of total assets, averaged over a three-year period; SGR is the annual sales growth rate, RD is the expenditure in R&D divided by sales; Debt is total debt (short and long term) divided by the book value of equity; and Litigious is a dichotomous variable equal to zero if the firm belongs to the technological sector and one otherwise. Model (1) considers no inflation-adjusted variables. The *p*-values are calculated using robust matrices, consistent with heteroskedasticity and autocorrelation covariance, using Windmeijer (2005) in GMM-sys. AR (2): Arellano-Bond test for second order autocorrelation. As usual, ***denotes $p < 1\%$, **denotes $p < 5\%$, and *denotes $p < 10\%$

Table 6.
Results for model estimations

In both cases, the pre-estimation analysis of our panel data show that GLS with random effects is the correct estimation procedure [9]. However, to take into account the likely endogeneity in the set of variables included in equation (1) and for a better comparability with previous evidence, we follow Fullana *et al.* (2019) and also use the inflation-adjusted variables to perform an estimate with a dynamic estimator for panels with few periods and many individuals where the independent variable is not strictly exogenous: GMM-SYS [10]. We show the GMM-SYS estimation results in column (3). Finally, we reproduce for comparative purposes in column (4) the results of Fullana *et al.* (2019) that use adjusted book-to-market (BtMadj) as unconditional conservatism measure and GMM-SYS.

The results, in columns (2) and (3), show that the variable that measures the difference between periods of unconditional conservatism (*IFRS*) is negative and significant at the level of 1%, showing a highly significant reduction in unconditional conservatism measured through *CON-ACC* when changing from the GAAP-period to the IFRS-period. Moreover, this result is robust to the both estimation methods used with inflation-adjusted data [11]. Additionally, as the preliminary correlation analysis pointed out, the effect of sales growth rate (*SGR*) is also significant at 1% level while the effect of *Size* is too, but at lower levels, and the effect of the other variables included in the model (*RD*, *Debt* and *Litigation*) is no significant.

By comparing results in column (2) with those in column (1), we perceive the effect of deflating the primary data series to correct for inflation. When we use non- adjusted data our variable of interest (*IFRS*) is no longer significant. Indeed, in those works that use time series, the effect of inflation may hide the real impact of the adoption of IFRS on unconditional conservatism and lead to erroneous conclusions.

Finally, our results support previous evidence found in Fullana *et al.* (2019) where, using a similar methodology but measuring unconditional conservatism with BtMadj, they conclude that IFRS adoption has a significant reduction effect on the accounting conservatism of the Spanish listed firms. Our most comparable result with the shown in Fullana *et al.* (2019), which we reproduce in column (4) of Table 6, is in column (3) of the same table. Note that in the evidence shown by Fullana *et al.* (2019), both *Size* and *Debt*, which are two variables closely linked to the stock price, are more significant.

The mandate to European listed firms to adopt IFRS is justified by itself due to its harmonizing effect not only in the EU but also globally [12]. However, based on the empirical evidence, we remark the positive effects that this unconditional conservatism reduction has. In this regard, for example: Khalilov and García-Osma (2020) show a positive relationship between unconditional conservatism and higher insider-trading profitability from sales; Vander-Bauwhede (2007) shows that cost of debt of firms with more unconditional conservatism is higher, supporting the hypothesis of a negative relationship of unconditional conservatism and contracting efficiency as Ball and Shivakumar (2005) argue; and Ruch and Taylor (2015) note that unconditional conservatism has the ability to facilitate earnings management, as Penman and Zhang (2002) and Jackson and Liu (2010) studies confirm. One would therefore expect that the reduction in unconditional conservatism shown leads to a reduction in the insider-trading profitability from sales, a reduction in firms' cost of debt by increasing contracting efficiency, a reduction on 'real earnings management' (Xu *et al.*, 2007) and, consequently, a quality improvement in financial reporting (Dayanandan *et al.*, 2016) by "reducing information asymmetry, improving the quality of information for users, enhancing transparency and comparability and positively influencing capital markets" (Houqe, 2018).

Our results are also related with the improvement in the accuracy of financial analysts' forecasts after IFRS adoption. Following Penman and Zhang (2002) and Mensah *et al.* (2004), Kim *et al.* (2019) show that analysts fail to appropriately adjust their earnings forecasts for the effect of unconditional conservatism. Thus, we expect that the documented reduction in firms' unconditional conservatism due to IFRS adoption, contributes to reduce financial analysts' forecasts bias.

6. Robustness analyses

6.1 Sample period effect

In Table 7, we show results of the estimate of the equation (1) changing the subsample periods that define the GAAP- and IFRS-period. Concretely, we reduce the length of the sample not considering the first and the last year of our original sample and reducing both the GAAP-period and the IFRS-period to four years. We show these results using 584 observations in column (2). When we compare these results with those in column (1) that reproduce the column (3) of Table 6, we observe that they remain both quantitatively and quantitatively invariable: the slope coefficient of our variable of interest (IFRS) is negative and significant at 1%.

6.2 Transitory effects

In our second re-estimation, we remove the year 2005 from the sample to minimize normative and managerial transitory effects. Now the IFRS-period starts in 2006 and the number of observations is 651. The point estimation results are shown in column (3) of Table 7. Again, the results are highly close to those corresponding to the whole sample shown in column (1). Effectively, the slope coefficient of the dummy variable *IFRS* remains negative and significant at the 1% level.

	(1) *2000-2009*	(2) *2001–2008*	(3) *Excluding 2005*	(4) *CrisisControl*
IFRS	−0.017*** (0.000)	−0.019*** (0.000)	−0.013*** (0.000)	−0.017*** (0.000)
Size	0.008** (0.021)	0.009*** (0.004)	0.006** (0.043)	0.008** (0.025)
SGR	−0.027*** (0.000)	−0.024*** (0.000)	−0.027*** (0.000)	−0.027*** (0.000)
RD	0.320 (0.832)	1.287 (0.281)	−0.378 (0.590)	0.282 (0.841)
Debt	0.000 (0.348)	0.000 (0.246)	0.000 (0.691)	0.000 (0.358)
Crisis				0.001 (0.768)
Constant	0.017 (0.157)	0.015 (0.139)	0.022** (0.023)	0.019 (0.213)
N	722	584	651	722
Wald test	58.94 (5) (0.000)	82.41 (5) (0.000)	52.89 (5) (0.000)	111.06 (6) (0.000)
Sargan test	89.46 (0.964)	84.91 (0.943)	84.5 (0.815)	88.51 (0.988)
AR (2)	0.9127 (0.361)	0.9231 (0.356)	0.899 (0.331)	0.9160 (0.359)

Notes: The estimated coefficient and *p*-value (below and in parentheses) are reported. The dependent variable CON–ACC is the inflation-adjusted accrual-based measure of accounting conservatism; IFRS is a dummy variable equal to one for the IFRS period (2005-2009) and equal to zero for the GAAP period (2000–2004); Size is the natural logarithm of total assets, averaged over a three-year period; SGR is the annual inflation-adjusted sales growth rate; RD is the expenditure in R&D divided by inflation-adjusted sales; Debt is total debt (short and long term) divided by the inflation-adjusted book value of equity; and Litigious is a dichotomous variable equal to zero if the firm belongs to the technological sector and one otherwise. Crisis is a dummy variable equal to 1 if year equal to 2008 or 2009, 0 otherwise. The *p*-values are calculated using robust matrices, consistent with heteroskedasticity and autocorrelation covariance, using Windmeijer (2005) in GMM-sys. AR (2): Arellano-Bond test for second-order autocorrelation. As usual, ***denotes $p < 1\%$, **denotes $p < 5\%$, and *denotes $p < 10\%$

Table 7.
Results for model estimations with different sample periods

6.3 Financial crisis effect

Finally, to control for the possible effect of financial crisis on results we re-estimate the model including a dummy variable that captures it. This *Crisis* dummy variable takes a value equal to one in the crisis years included in the sample period, 2008 and 2009, and zero in the others. We report the results in column (4) of Table 7 where we observe that *Crisis* is not significant and both the value of our variable of interest and its significance remains unchanged, corroborating the strong robustness of results.

7. Conclusions

The review of the previous literature focused on the effect of IFRS mandatory adoption on the accounting conservatism in the European listed firms reveals that only market-based proxies to measure firms' unconditional conservatism have been used. Alternatively, in this paper we use for the first time an accounting-based measure of the unconditional conservatism to provide new evidence in this context, avoiding the difficulties of correctly controlling for all the factors other than conservatism that influence market-based measures. Concretely, we use the unconditional conservatism measure proposed by Givoly and Hayn (2000) that is based on accruals.

Given the suitability of country-specific studies in this context, justified by the previous literature, we select a ten-year representative sample of non–financial listed companies in a European stock market among the most relevant and in a country with significant differences between local GAAP and IFRS such as Spain, in which we expect that the changes will be shown more clearly. Using panel data methodology and after controlling for all the other explanatory factors found in the literature, our results show evidence

supporting our initial hypothesis: The mandatory adoption of IFRS by listed companies has reduced their unconditional conservatism in a significant way.

Our results support the previous evidence shown in Fullana *et al.* (2019) pointing to a reduction in unconditional conservatism after the IFRS adoption by listed firms. As we discuss, we show evidence relevant to equity market, debt market and corporate governance users of the financial information of listed firms, but also to the policymakers who can assess the effects of their mandate. But also from an academic perspective, as our results highlight the relevance of (also) using accounting-based measures to analyse accounting practices even when they refer only to listed companies as in this case.

Beyond the harmonizing effect of the mandate to European listed firms to adopt IFRS, based on previous empirical evidence, we expect that the reduction on unconditional conservatism shown by our results leads to positive effects such as:

- a reduction in higher insider-trading profitability from sales, given its positive relationship with the unconditional conservatism;
- a reduction in firms' cost of debt by increasing contracting efficiency that is negatively related with unconditional conservatism;
- a reduction in earnings management, which is facilitated by unconditional conservatism; and
- a reduction in financial analysts' forecasts bias, as the unconditional conservatism makes it difficult for them to adjust earnings forecasts properly.

Results shown in this paper have all the limitations of system-, country-, sample- and event-specific studies but, together with many others drawn in alternative contexts, may help to correctly understand both the time-evolution and cross-sectional country differences of firms' unconditional conservatism. In our future research, we plan to delve into the analysis of unconditional accounting conservatism: its causes, its measurement, its costs and benefits, and its relationship with conditional conservatism. Because, as Ruch and Taylor (2015) claim, more research on unconditional conservatism is needed to provide a complete picture of the effects of accounting conservatism, specially in countries with a code-law accounting system where unconditional conservatism emerges by mandate.

Notes

1. Among other accounting practices, unconditional conservatism includes: ignoring certain intangible assets; ignoring some R&D costs; the accelerated depreciation of fixed assets; and the systematic overvaluation of provisions.
2. Ball *et al.* (2000) refer to it as income conservatism, against the unconditional or balance-sheet conservatism.
3. Unconditional and conditional conservatism are usually incorporated into models as opposite effects (Beaver and Ryan, 2005; Roychowdhury and Watts, 2007).
4. The negative relationship between the two types of conservatism is empirically shown in Ball *et al.* (2000), Giner and Rees (2001), Pope and Walker (2003), Francis *et al.* (2004), Basu (2005) and Pae *et al.* (2005), and even at the industry level as in Givoly *et al.* (2007). However, Francis *et al.* (2013) find a positive relation between both, conditional and unconditional conservatism, and firm value during the 2007–2009 financial crisis.
5. Besides the mixed and sometimes unexpected previous evidence, in the empirical literature we observe a lack of analyses of the effects of mandatory IFRS adoption by the European listed firms in a framework not influenced by market dynamics. In fact, the use of accounting-based

measures of unconditional conservatism seems to be relegated to private firms analyses in the accounting literature focused on the European context.

6. The analysis of the unconditional conservatism through the value relevance of the book value is not exempt from model risk as the relationship between them is based on the Ohlson (1995) model that, as Fullana *et al.* (2021) show, use quite restrictive assumptions.
7. Fullana and Toscano (2016) analyse the consequences of using the mean of the firm-specific MtB ratios as a country-specific measure of the unconditional conservatism instead of the measure computed *a la* Givoly and Hayn, showing that these alternative measures do not contain the same information.
8. Although other systematic changes may affect the unconditional conservatism of companies (Lobo and Zhou, 2010), we have not detected any changes during the sample period.
9. We use the Breusch–Pagan Lagrange multiplier test (LM test) to check variances across entities and Hausman test to check if the difference between coefficients using the fixed effects and random effects estimators is not systematic.
10. Arellano and Bover (1995) and Blundell and Bond (1998) design this estimator commonly known as GMM-SYS. By introducing instrumental variables, it constructs a system of two equations, the original and the transformed that is estimated using the generalized method of moments.
11. In both, (2) and (3), the Wald test does not allow us to reject the null hypothesis of no first-order autocorrelation. In (3), the AR(2) test does not allow us to reject the null hypothesis of no second-order autocorrelation and the Sargan test also rejects the over-identification of restrictions, which guarantees the relevance of the instruments used in the specification.
12. More and more countries with both developed and emerging economies are incorporating by mandate the use of IFRS for listed companies: Canada (Jermakowicz *et al.*, 2018), China (Liu, *et al.*, 2011; Isaboke and Chen, 2019), India (Tawiah and Boolaky, 2020), Saudi Arabia (Nurunnabi *et al.*, 2020) and so on.

References

Ahmed, A.S. (1994), "Accounting earnings and future economic rents: an empirical analysis", *Journal of Accounting and Economics*, Vol. 17 No. 3, pp. 377-400.

Ahmed, A.S. and Duellman, S. (2007), "Accounting conservatism and board of director characteristics: an empirical analysis", *Journal of Accounting and Economics*, Vol. 43 Nos 2/3, pp. 411-437.

Ahmed, A.S., Billings, B.K. and Morton, R.M. (2002), "The role of accounting conservatism in mitigating bondholder-shareholder conflicts over dividend policy and in reducing debt costs", *The Accounting Review*, Vol. 77 No. 4, pp. 867-890.

Arellano, M. and Bover, O. (1995), "Another look at the instrumental variable estimation of error-components models", *Journal of Econometrics*, Vol. 68 No. 1, pp. 29-51.

Bae, K.H., Tan, H. and Welker, M. (2008), "International GAAP differences: the impact on foreign analysts", *The Accounting Review*, Vol. 83 No. 3, pp. 593-628.

Ball, R. and Shivakumar, L. (2005), "Earnings quality in UK private firms: comparative loss recognition timeliness", *Journal of Accounting and Economics*, Vol. 39 No. 1, pp. 83-128.

Ball, R., Kothari, S.P. and Nikolaev, V.V. (2013), "Econometrics of the Basu asymmetric timeliness coefficient and accounting conservatism", *Journal of Accounting Research*, Vol. 51 No. 5, pp. 1071-1097.

Ball, R., Kothari, S.P. and Robin, A. (2000), "The effect of international institutional factors on properties of accounting earnings", *Journal of Accounting and Economics*, Vol. 29 No. 1, pp. 1-51.

Ball, R., Robin, A. and Sadka, G. (2008), "Is financial reporting shaped by equity markets or by debt markets? An international study of timeliness and conservatism", *Review of Accounting Studies*, Vol. 13 Nos 2/3, pp. 168-205.

Ball, R., Robin, A. and Wu, J.S. (2003), "Incentives versus standards: properties of accounting in four east Asian countries", *Journal of Accounting and Economics*, Vol. 36 Nos 1/3, pp. 235-270.

Basu, S. (1997), "The conservatism principle and the asymmetric timeliness of earnings", *Journal of Accounting and Economics*, Vol. 24 No. 1, pp. 3-37.

Basu, S. (2005), "Discussion of "conditional and unconditional conservatism: concepts and modelling", *Review of Accounting Studies*, Vol. 10 Nos 2/3, pp. 311-321.

Beaver, W.H. and Ryan, S.G. (2000), "Biases and lags in book value and their effects on the ability of the book-to-market ratio to predict book return on equity", *Journal of Accounting Research*, Vol. 38 No. 1, pp. 127-148.

Beaver, W.H. and Ryan, S.G. (2005), "Conditional and unconditional conservatism: concepts and modelling", *Review of Accounting Studies*, Vol. 10 Nos 2/3, pp. 269-309.

Blundell, R. and Bond, S. (1998), "Initial conditions and moment restrictions in dynamic panel data models", *Journal of Econometrics*, Vol. 87 No. 1, pp. 115-143.

Cieslewicz, J.K. (2014), "Relationships between national economic culture, institutions, and accounting: Implications for IFRS", *Critical Perspectives on Accounting*, Vol. 25 No. 6, pp. 511-528.

Dayanandan, A., Donker, H., Ivanof, M. and Karahan, G. (2016), "IFRS and accounting quality: legal origin, regional, and disclosure impacts", *International Journal of Accounting and Information Management*, Vol. 24 No. 3, pp. 296-316.

Dechow, P., Ge, W. and Schrand, C. (2010), "Understanding earnings quality: a review of the proxies, their determinants and their consequences", *Journal of Accounting and Economics*, Vol. 50 Nos 2/3, pp. 344-401.

Ding, Y., Zhang, H. and Zhang, J. (2007), "Private vs state ownership and earnings management: evidence from Chinese listed companies", *Corporate Governance: An International Review*, Vol. 15 No. 2, pp. 223-238.

Field, L., Lowry, M. and Shu, S. (2005), "Does disclosure trigger litigation?", *Journal of Accounting and Economics*, Vol. 39 No. 3, pp. 487-507.

Filip, A. and Raffournier, B. (2013), "The value relevance of earnings in Europe after IFRS implementation: why do national differences persist?", *International Journal of Accounting, Auditing and Performance Evaluation*, Vol. 9 No. 4, pp. 388-415.

Francis, B., Hasan, I. and Wu, Q. (2013), "The benefits of conservative accounting to shareholders: evidence from the financial crisis", *Accounting Horizons*, Vol. 27 No. 2, pp. 319-346.

Francis, J., LaFond, R., Olsson, P.M. and Schipper, K. (2004), "Costs of equity and earnings attributes", *The Accounting Review*, Vol. 79 No. 4, pp. 967-1010.

Fullana, O. and Toscano, D. (2016), "Aggregate market-based measurement of country-specific balance-sheet conservatism", *WSEAS Transactions on Business and Economics*, Vol. 13, pp. 498-513.

Fullana, O., González, M. and Toscano, D. (2019), "The effects of IFRS adoption on the unconditional conservatism of Spanish listed companies", *Australian Accounting Review*, Vol. 29 No. 1, pp. 193-207.

Fullana, O., González, M. and Toscano, D. (2021), "The role of assumptions in Ohlson model performance: Lessons for improving equity-value modeling", *Mathematics*, Vol. 9 No. 5, p. 513.

García-Lara, J.M. and Mora, A. (2004), "Balance sheet versus earnings conservatism in Europe", *European Accounting Review*, Vol. 13 No. 2, pp. 261-292.

García-Lara, J.M., Rueda, J.A. and Vázquez, P. (2008), "Conservadurismo del resultado contable bajo las normas internacionales de contabilidad: Un estudio comparativo", *Spanish Journal of Finance and Accounting*, Vol. 37 No. 138, pp. 197-210.

Giner, B. and Rees, W.P. (1999), "A valuation based analysis of the Spanish accounting reforms", *Journal of Management Governance*, Vol. 3 No. 1, pp. 31-48.

Giner, B. and Rees, W.P. (2001), "On the asymmetric recognition of good and bad news in France, Germany and the U.K", *Journal of Business Finance and Accounting*, Vol. 28 Nos 9/10, pp. 1285-1331.

Givoly, D. and Hayn, C. (2000), "The changing time-series properties of earnings, cash flows and accruals: Has financial reporting become more conservative?", *Journal of Accounting and Economics*, Vol. 29 No. 3, pp. 287-320.

Givoly, D., Hayn, C. and Natarajan, A. (2007), "Measuring reporting conservatism", *The Accounting Review*, Vol. 82 No. 1, pp. 65-106.

Haller, A. and Wehrfritz, M. (2013), "The impact of national GAAP and accounting traditions on IFRS policy selection: evidence from Germany and the UK", *Journal of International Accounting, Auditing and Taxation*, Vol. 22 No. 1, pp. 39-56.

Houqe, N. (2018), "A review of the current debate on the determinants and consequences of mandatory IFRS adoption", *International Journal of Accounting and Information Management*, Vol. 26 No. 3, pp. 413-442.

Hung, M. and Subramanyam, K.R. (2007), "Financial statement effects of adopting international accounting standards: the case of Germany", *Review of Accounting Studies*, Vol. 12 No. 4, pp. 623-657.

Isaboke, C. and Chen, Y. (2019), "IFRS adoption, value relevance and conditional conservatism: evidence from China", *International Journal of Accounting and Information Management*, Vol. 27 No. 4, pp. 529-546.

Jackson, S. and Liu, X. (2010), "The allowance for uncollectible accounts, conservatism, and earnings management", *Journal of Accounting Research*, Vol. 48 No. 3, pp. 565-601.

Jermakowicz, E., Chen, C. and Donker, H. (2018), "Financial statement effects of adopting IFRS: the canadian experience", *International Journal of Accounting and Information Management*, Vol. 26 No. 4, pp. 466-491.

Joos, P. (1997), "The stock market valuation of earnings and book value across international accounting systems", UMI, Doctoral Thesis.

Joos, P. and Lang, M. (1994), "The effects of accounting diversity: evidence from the European Union", *Journal of Accounting Research*, Vol. 32 No. S, pp. 141-168.

Khalilov, A. and García-Osma, B. (2020), "Accounting conservatism and the profitability of corporate insiders", *Journal of Business Finance and Accounting*, Vol. 47 Nos 3/4, pp. 333-364.

Kim, J.B., Nekrasov, A., Shroff, P.K. and Simon, A. (2019), "Valuation implications of unconditional accounting conservatism: evidence from analysts' target prices", *Contemporary Accounting Research*, Vol. 36 No. 3, pp. 1669-1698.

Kvaal, E. and Nobes, C. (2010), "International differences in IFRS policy choice: a research note", *Accounting and Business Research*, Vol. 40 No. 2, pp. 173-187.

Larcker, D.F. and Rusticus, T.O. (2010), "On the use of instrumental variables in accounting research", *Journal of Accounting and Economics*, Vol. 49 No. 3, pp. 186-205.

Liu, C., Yao, L.J., Hu, N. and Liu, L. (2011), "The impact of IFRS on accounting quality in a regulated market: an empirical study of China", *Journal of Accounting, Auditing and Finance*, Vol. 26 No. 4, pp. 659-676.

Lobo, G.J. and Zhou, J. (2010), "Changes in discretionary financial reporting behavior following the Sarbanes-Oxley act", *Journal of Accounting, Auditing and Finance*, Vol. 25 No. 1, pp. 1-26.

Martínez, J.A., Martínez, F.G. and Diazaraque, J.M.M. (2011), "Optional accounting criteria under IFRSs and corporate characteristics: evidence from Spain", *Revista de Contabilidad*, Vol. 14 No. 1, pp. 59-85.

Mensah, Y.M., Song, X. and Ho, S.S.M. (2004), "The effect of conservatism on analysts' annual earnings forecast accuracy and dispersion", *Journal of Accounting, Auditing and Finance*, Vol. 19 No. 2, pp. 159-183.

Nobes, C. (1998), "Towards a general model of the reasons for international differences in financial reporting", *Abacus*, Vol. 34 No. 2, pp. 162-187.

Nobes, C. and Perramon, J. (2013), "Firm size and national profiles of IFRS policy choice", *Australian Accounting Review*, Vol. 23 No. 3, pp. 208-215.

Nurunnabi, M., Jermakowicz, E.K. and Donker, H. (2020), "Implementing IFRS in Saudi Arabia: evidence from publicly traded companies", *International Journal of Accounting and Information Management*, Vol. 28 No. 2, pp. 243-273.

Ohlson, J.A. (1995), "Earnings, book values and dividends in equity valuation", *Contemporary Accounting Research*, Vol. 11 No. 2, pp. 661-687.

Pae, J., Thornton, D.B. and Welker, M. (2005), "The link between earnings conservatism and the price-to-book ratio", *Contemporary Accounting Research*, Vol. 22 No. 3, pp. 693-717.

Penman, S.H. and Zhang, X.J. (2002), "Accounting conservatism, the quality of earnings, and stock returns", *The Accounting Review*, Vol. 77 No. 2, pp. 237-264.

Pope, P.F. and Walker, M. (2003), "Ex-ante and ex-post accounting conservatism, asset recognition and asymmetric earnings timeliness", Lancaster University-Manchester University, Working Paper.

Qiang, X. (2007), "The effects of contracting, litigation, regulation, and tax costs on conditional and unconditional conservatism: cross-sectional evidence at the firm level", *The Accounting Review*, Vol. 82 No. 3, pp. 759-796.

Roychowdhury, S. and Watts, R.L. (2007), "Asymmetric timeliness of earnings, market-to-book and conservatism in financial reporting", *Journal of Accounting and Economics*, Vol. 44 Nos 1/2, pp. 2-31.

Ruch, G.W. and Taylor, G. (2015), "Accounting conservatism: a review of the literature", *Journal of Accounting Literature*, Vol. 34, pp. 17-38.

Stober, T. (1996), "Do prices behave as if accounting book values are conservative? Cross-sectional tests of the Feltham-Ohlson (1995) valuation model", University of Notre Dame, Working Paper.

Tawiah, V. and Boolaky, P. (2020), "Consequences and determinants of IFRS convergence in India", *International Journal of Accounting and Information Management*, Vol. 28 No. 2, pp. 303-322.

Vander-Bauwhede, H. (2007), "The impact of conservatism on the cost of debt: conditional versus unconditional conservatism", Katholieke Universiteit Leuven, Working paper.

Watts, R.L. (2003), "Conservatism in accounting part 1: explanations and implications", *Accounting Horizons*, Vol. 17 No. 3, pp. 207-221.

Windmeijer, F. (2005), "A finite sample correction for the variance of linear efficient two-step GMM estimators", *Journal of Econometrics*, Vol. 126 No. 1, pp. 25-51.

Xu, R., Taylor, G. and Dugan, M. (2007), "Review of real earnings management literature", *Journal of Accounting Literature*, Vol. 26, pp. 195-228.

Further reading

LaFond, R. and Watts, R.L. (2008), "The information role of conservatism", *The Accounting Review*, Vol. 83 No. 2, pp. 447-478.

Corresponding author

David Toscano can be contacted at: dtoscano@uhu.es