

Adoption of IFRS in Spain: Effect on the comparability and relevance of financial reporting

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Abstract

EU Regulation 1606/2002 requires application of International Financial Reporting Standards (IFRS) by groups listed on European stock markets. In Spain, listed groups are now obliged to prepare consolidated financial information under IFRS, and legislative changes to bring local rules into line with international standards have been tabled.

In this context, the potential impact of IFRS is fraught with uncertainty. Our study of IBEX-35 companies focuses on the effects of the new standards on comparability and the relevance of financial reporting in Spain. We address these objectives by seeking significant differences between accounting figures and financial ratios under the two sets of standards (i.e. Spanish accounting standards and IFRS).

The results obtained show that local comparability has worsened. The study reveals that local comparability is adversely affected if both IFRS and local accounting standards are applied in the same country at the same time. Reforms to bring local rules into line with international standards are therefore urgent. We also find that there has been no improvement in the relevance of financial reporting to local stock market operators because the gap between book and market values is wider when IFRS are applied. While there has been no gain in terms of the usefulness of financial reporting in the short-term, improved usefulness may be achieved in the medium to long-term.

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Keywords: International Financial Reporting Standards (IFRS); Financial ratios; Financial reporting usefulness; Spanish stock market

1. Introduction

The emergence and development of multinational concerns, the growth of international financial markets and changing investor behavior have, among other factors, contributed to the

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internationalization of economic activity. As a result of this phenomenon, financial reporting has spread beyond national borders.

However, interpretation and understanding of financial information at the international level is hindered by a multitude of factors, including the diversity of the accounting principles and rules governing the preparation of reports.

Considerable efforts have been made by various bodies (International Accounting Standards Board (IASB) and the European Union (EU)), since the 1970s to harmonize accounting rules in different countries, with the aim of improving the usefulness of financial information in the international context. Among other factors, the non-mandatory nature of the standards issued by the IASB, the flexibility and ease of compliance with EU Directives and, most seriously, the lack of political will in the countries concerned, rooted in local culture and a strong national outlook, have so far prevented the attainment of a truly harmonized framework for useful financial reporting.

Awareness within the EU of the need to make progress towards achieving international comparability resulted in the approval of Regulation 1606/2002, which provides for the mandatory application of International Financial Reporting Standards (IFRS) by business groups listed on European stock markets as of January 2005. The approval of this regulation has resulted in the adoption of IFRS in European countries. This paper focuses on the adaptation process in Spain.

1.1. Spanish accounting system

In contrast to those countries where professional practice orients accounting standards, the accounting rules in Spain, a country where the legal system is based on Roman Law, are enshrined in legislation. Hence, accounting rules in Spain have traditionally been a public issue and there has been scant input from the private sector. Regulations have taken the form of companies legislation (e.g. the Commercial Code and the Spanish Companies Act), the General Chart of Accounts and the related implementing Regulations, and other Securities Market and Bank of Spain legislation. Consequently, the Spanish accounting system is of a Continental European nature.

The adoption of IFRS in Spain was implemented by the Ministry of Economy with the publication of [Law 62/2003](#), 30 December, establishing tax, administrative and social measures. This Act provides for the application of the following accounting rules, applicable exclusively to consolidated financial statements prepared by companies required to report mandatory consolidated accounting information in years commencing as of January 1, 2005:

- (a) If at the closing date for the year, any group company may have issued securities listed in an official market in any member State of the EU, they shall apply the IFRS approved in the Regulations of the European Commission¹.
- (b) If at the closing date for the year, no group company may have issued securities listed in an official market in any member State of the EU, they may opt to apply either Spanish accounting standards or the IFRS approved in the Regulations of the European Commission. If they opt for the latter, the consolidated financial statements shall be prepared in accordance with such standards on an ongoing basis.

¹ Nevertheless, companies (except financial institutions) required to prepare consolidated financial statements but that may have issued only *fixed interest securities* listed on an official market of any member State of the EU at the close of 2005, may continue to apply Spanish accounting standards until years commencing as from January 1, 2007, unless they have already applied the IFRS approved by the Regulations of the European Commission in any prior year.

The regulatory change has raised numerous questions concerning the potential effects of the application of IFRS in an accounting environment that is unaccustomed to the utilization of accounting rules based on the structure and philosophy underlying international standards. Will the desired comparability of financial information at the European level be achieved if IFRS are applied only to consolidated financial statements? What will happen to individual financial statements or to the consolidated accounts of listed and unlisted groups? Will the local comparability of financial information improve? What will be the effects of the change on the stock market? Will there be any improvement in the value relevance of listed firms' financial reporting?

In our opinion, the key issue is whether the application of IFRS will improve the usefulness of financial reporting. To be useful, according to IASB Framework, information must be understandable, reliable, comparable and relevant. No doubt, financial statements prepared under IFRS will be more useful when they are used in an international context. But we are concerned about the effects of IFRS on the usefulness of financial reporting in the national context. This is the issue examined in this paper.

This research focuses on the effects of IFRS on the comparability and relevance of financial reporting in Spain. These are two of the four key qualitative characteristics that make financial information useful.

We seek to establish whether the financial statements of Spanish firms are comparable when some firms apply IFRS and others apply local standards. For this purpose, we measure the quantitative impact of the new rules for recognition and valuation on financial figures and ratios. The *a priori* effect of IFRS should be significant, to the extent that they contain criteria that are clearly different from Spanish accounting standards. For example, [Lainez, Callao, and Jarne \(2004\)](#) describe the expected effects of the first application of international standards on balance sheet captions. In any event, it is necessary to remember that the quantitative impact will depend on the accounting policies adopted by the Spanish firms themselves since IFRS provide a wide range of options.

Financial reporting is relevant when it influences the economic decisions of users, whether investors, employees, lenders, suppliers, customers or other agents. We focus on the investors and analyze whether IFRS make financial reporting more relevant for decision making in the capital markets than the information provided in financial statements prepared under Spanish standards. To this end, we analyze the effect on the gap between firms' book and market values and, by extension, the impact on the book-to-market ratio.

We expect our results to be of great interest to academics involved in guiding and researching progress with international accounting harmonization, and to the Spanish regulatory and supervisory authorities (Institute of Accounting and Auditing, National Securities Market Commission and the Bank of Spain) since the study provides insight into the results of implementing IFRS.

Our research may also be relevant to international regulators and institutions involved in the process (e.g. the European Commission, EFRAG, IASB and the securities markets), since the results provide examples of how firms required to apply IFRS have approached the process in a continental European accounting system characterized by regulatory rigidity and a legalistic outlook.

The remainder of the paper is organized as follows. The next section presents previous literature in the field. Section 3 describes the main differences between Spanish rules and IFRS. Details of the sample, data and methodology are given in Section 4. Section 5 deals with the impact of IFRS on comparability. Section 6 describes a qualitative analysis of the recognition and valuation policies that have generated the changes observed. Section 7 addresses the second objective, which concerns the impact of IFRS on the relevance of financial information. Finally, we discuss the main conclusions.

2. Literature review

A number of studies related to the objectives of this paper have been published in recent years, which we shall consider in two groups. The first comprises studies analysing the impact of the EU's adoption of IFRS on different aspects of national accounting models, while the second refers to papers examining the effect on the value relevance of the accounting information produced under different sets of standards.

Since the official announcement of the mandatory application of IFRS in the European Union in 2002, accounting research has examined the process, especially the impact, progress and difficulties it entails. Table 1 presents an overview of prior research on implanting IFRS.

Jermakowicz (2004) analyzes the IFRS adoption process in Belgium, which, like Spain, is an example of the continental accounting model. The paper analyzes the impact of IFRS on BEL-20 firms. A survey sent to Belgian companies indicates that implementing IFRS will dramatically change the way these companies design and handle both their internal and external reporting activities, and will increase the comparability of consolidated accounts as well as levels of transparency for many companies. The quantitative impact is only analyzed in three companies, which were the first companies to adopt IFRS in 2003. The study concludes that adjustments to translate Belgian GAAP to IFRS resulted in a significant impact on the companies' reported equity, as well as net income.

Ormrod and Taylor (2004) study the impact of the change from UK GAAP to IFRS on covenants included in debt contracts. They suggest that the change is likely to result in more volatile reported earnings figures, in addition to differences in reported profits and balance sheet items. A movement towards cash flow-based covenants might thus be seen as one method of moderating the uncertainty for borrowers arising from the introduction of IFRS.

Weißberger, Stahl, and Vorstius (2004) survey the motives that led certain German companies to opt for US GAAP or IFRS rather than German GAAP. The authors sent a questionnaire to a sample of 359 companies (DAX100 and *Neuer Markt*) and received 81 responses. Their results indicate that the change to IFRS or US GAAP was motivated by the expectation of gaining standing in the capital markets, achievement of improved supply of information, and the internationalization of investors. However, an ex-post evaluation revealed that not all of these objectives were achieved.

Larson and Street (2004) examine progress towards and perceived impediments to convergence in 17 European countries (the 10 new EU members, Switzerland and other EU candidate countries). The authors employ data collected by the former Big Six international accounting firms in their 2002 convergence survey. The results suggest the emergence of a "two-standard" system (IFRS for consolidated financial statements of listed companies and local GAAP for non-listed companies). The two most significant impediments to convergence are the complexity of certain IFRS and the tax-orientation of many national systems.

Schipper (2005) describes a series of implementation effects associated with the mandatory adoption of IFRS in the EU. The IASB has found it necessary to provide detailed implementation guidance for IFRS, otherwise preparers and auditors turn to US GAAP or jurisdiction-specific European GAAP. Likewise, the adoption of IFRS coupled with the IASB's commitment to international convergence with the FASB will place additional pressure on two reporting issues: defining the reporting entity for consolidation purposes and developing reliable fair value measures.

Van Tendeloo and Vanstraelen (2005) address the question of whether the adoption of IFRS is associated with lower earnings management. They examine whether German companies that have adopted IFRS engage significantly less in earnings management compared to firms reporting

Table 1
Literature on adoption of IFRS in the EU

References	Country analyzed	Topic	Results
Jermakowicz (2004)	Belgium	Impact of conversion to IFRS on companies, their internal organization and accounting and finance strategy	Significant changes in internal and external reporting activities, and impact on their reported equity and net income
Ormrod and Taylor (2004)	United Kingdom	Impact of the change to IFRS on covenants in companies' debt contracts	Changes in reported profits and balance sheet amounts, and more volatile reported earnings figures
Weißberger et al. (2004)	Germany	Motives that led German companies to opt for US GAAP or IFRS rather than German GAAP	Expectation of attaining improved standing in the capital markets
Larson and Street (2004)	17 European countries	Progress and impediments to convergence to IFRS	Development of "two-standard" system (IFRS for consolidated financial statements of listed companies and local GAAP for non-listed companies); the two most significant impediments are the complicated nature of certain IFRS and the tax-orientation of many national systems
Schipper (2005)	–	Implementation effects associated with the mandatory adoption of IFRS	IASB needs to provide detailed implementation guidance for IFRS
Van Tendeloo and Vanstraelen (2005)	Germany	Effects of IFRS on earnings management	Adoption of IFRS cannot be associated with lower earnings management
Tokar, 2005	–	Impact of convergence to IFRS on auditing firms	Investment of money and a significant change in the training of accounting studies
Delvaille et al. (2005)	France, Germany and Italy	Comparison of developments to integrate IFRS in the three countries	Use of IFRS is most prominent in Germany, and there are significant differences in the way the three countries adapt to the IFRS
Jones and Luther (2005)	Germany	Consequential effects of the change to IFRS on management accounting practices	Managers need to choose between integrating external and internal reporting or operating dual accounting systems
Callao et al. (2006)	Spain	Approach to the process of implementing IFRS in Spanish firms and implications	The cost of adaptation is high for firms and they foresee major changes in recognition and measurement policies

under German GAAP. Their results suggest that the adoption of IFRS cannot be associated with lower earnings management.

Tokar (2005) focuses on the impact of convergence on auditing firms and concludes that achieving true convergence of accounting standards is a costly and time-consuming objective, and will require a huge investment of money and a significant change in the training of accounting students in the near future.

Delvaille, Ebberts, and Saccon (2005) compare developments in France, Germany and Italy and the approaches taken to integrate the current European accounting reform processes with IFRS. They make an empirical analysis of the use of IFRS by listed companies on three stock markets (DAX 30, CAC 40 and S&P/MIB). The results show clearly that the use of IFRS is most prominent in Germany. They conclude that while France, Germany and Italy were in the past considered to employ Continental European accounting systems, they are very different today, not only in reporting practice but also in the way they have adapted to IFRS.

Jones and Luther (2005) examine whether the change to IFRS in Germany could have consequential effects on the distinctive traditional management accounting practices applied in the field of control. They examine three Bavarian companies and two management consultancy firms, concluding that managers face an important choice between integrating external and internal reporting or continuing to operate dual accounting systems, confining the adoption of IFRS to external reporting. At present no trend has been established.

Callao, Jarne, and Laínez (2006) investigate the manner in which Spanish firms have handled the process of implementing IFRS. The empirical work is based on a survey of Spanish business groups listed on the Madrid stock exchange. The results show that listed Spanish groups have taken a very positive stance towards the harmonization process and the adoption of IFRS, but adaptation is costly and requires changes in business organization and structures, as well as accounting policies.

The business and other issues analyzed in connection with the adoption of IFRS in Europe are very varied, although few studies have addressed the impact of adoption on accounting figures. In fact, our study is one of the first to consider these issues in the field of European accounting information.

In the second group of papers, referring to the effects of legislative change on the value relevance of accounting information, there are still very few published studies concerning the actual process of IFRS adoption in Europe. The papers which are briefly summarized in Table 2, are related to the adoption of IFRS at different times and countries.²

Harris and Muller (1999) examine the market valuation of earnings and book value figures prepared under IFRS and US-GAAP.³ The sample consists of 89 non-US companies that employ IFRS in their primary accounts with a reconciliation to US GAAP during the period 1992–1996, and the models used are based on earnings and Ohlson models. They find evidence that US GAAP earnings reconciliation amounts are value-relevant after controlling for IFRS amounts in market value and return models. IFRS amounts are more (less) closely associated with prices-per-share (security returns) than US GAAP amounts.

² There are other articles that analyze the value relevance of accounting figures produced under local GAAP and US GAAP. For example Alford, Jones, Leftwich, and Zmijewski (1993), Amir, Harris, and Venuti (1993), Bandyopadhyay, Hanna, and Richardson (1994), Harris, Lang, and Möller (1994), Chan and Seow (1996) or Mora and Rodríguez (2004).

³ Though some of these papers refer to IASB rules as International Accounting Standards (IAS), we have opted here to use the current terminology, referring to International Financial Reporting Standards (IFRS).

Table 2
Literature on the effects of IFRS on financial information relevance

References	Sample	Period	Model	Results
Harris and Muller (1999)	31 companies (reconciliation IFRS-US GAAP)	1992–1996	Multiple linear regression (Earnings and Ohlson models)	Reconciliations are value-relevant, IFRS are more closely associated with prices-per-share than US GAAP, but US GAAP are more closely associated with returns than IFRS
Niskanen et al. (2000)	18 companies (reconciliation Finnish GAAP-IFRS)	1984–1992	Multiple linear regression (Earnings model)	Reconciliations do not appear to be value-relevant
Bartov et al. (2005)	417 companies (US GAAP, German GAAP and IFRS)	1998–2000	Linear regression (cross sectional and time series)	US GAAP and IFRS are more value relevant than German GAAP
Lin and Chen (2005)	415 companies (reconciliation Chinese GAAP-IFRS)	1995–2000	Multiple linear regression (Earnings and Ohlson models)	Chinese GAAP more value relevant than IFRS
Horton and Serafeim (2006)	85 companies (reconciliation UK GAAP-IFRS)	2005	Multiple linear regression (event and value relevance studies)	Reconciliation adjustments in respect of earnings (but not in respect of shareholders' equity) are value relevant
Schiebel (2006)	12 German GAAP 12 IFRS	2000–2004	Linear and exponential regression (panel data)	German GAAP more value relevant than IFRS

The value relevance of earnings under Finnish accounting standards and their reconciliations to IFRS are studied by [Niskanen, Kinnunen, and Kasanen \(2000\)](#). They analyzed 18 Finnish firms that disclose earnings under local GAAP and IFRS (1984–1992) using an earnings model. The results show that the change in local GAAP earnings, as well as the level and change in aggregate reconciliation to IFRS, are value irrelevant.

[Bartov, Goldberg, and Kim \(2005\)](#) investigate the comparative value relevance of earnings reported under German GAAP, US GAAP and IFRS. The research sample included 417 German companies listed on local stock markets during the period 1998–2000. They use a return model and conclude that US GAAP and IFRS are more value relevant than German GAAP.

Outside the EU, [Lin and Chen \(2005\)](#) investigate the incremental value relevance obtained from reconciling accounts prepared under Chinese accounting standards to IFRS. The sample comprises between 53 and 79 companies per year listed on Chinese stock markets for the period 1995–2000. The authors apply the Ohlson model and the returns model and find that earnings and the book values of equity determined under Chinese GAAP provide more relevant accounting information for the purpose of determining the prices of shares than IFRS.

Addressing the adoption of IFRS in EU, [Horton and Serafeim \(2006\)](#) examine the market reaction to and value relevance of reconciliation adjustments from UK companies in the transition to IFRS compliance. The sample consists of 85 firms from the London Stock Exchange FTSE 350 for 2005. The authors employ an event study methodology and a market value model. They find the reconciliation adjustment from UK GAAP to IFRS to be value relevant with respect to earnings but not to shareholders' equity.

In Germany, [Schiebel \(2006\)](#) examines the value relevance of IFRS and German GAAP. The sample include 24 German companies listed on the Frankfurt stock exchange (12 companies publishing exclusively German GAAP consolidated reports for the period 2000–2004 and 12 companies publishing exclusively IFRS consolidated reports for the period 2000–2004). The author proposes different regressions of market capitalization on consolidated equity book value using a simple linear regression analysis, finding that German GAAP are significantly more value relevant than IFRS.

These findings are very mixed, with some studies showing that the change to IFRS improves value relevance ([Bartov et al., 2005](#); [Harris & Muller, 1999](#); [Horton & Serafeim, 2006](#)), and others that it worsens value relevance ([Lin & Chen, 2005](#); [Schiebel, 2006](#)), while yet others find no conclusive evidence either way ([Niskanen et al., 2000](#)).

The second objective of our study is closely linked to the last two papers referred to above. We examine the improvement in the value relevance of accounting information as a result of the application of IFRS rather than local criteria.

3. Key differences between Spanish accounting standards and IFRS

Until 2005 all Spanish firms prepared their financial statements in accordance with the local standards issued in 1990 following EU Directives ([Fourth Council Directive 78/660/EEC of 25 July 1978](#), on the annual accounts of certain types of companies, and [Seventh Council Directive 83/349/EEC of 13 June 1983](#) on consolidated accounts). For the companies in this study, the applicable rules are in the [Spanish General Chart of Accounts \(1990\)](#) and the [Regulations for the Preparation of Consolidated Annual Accounts \(1991\)](#).

As in are EU member States, listed Spanish groups are now required to adopt IFRS, which means adapting their accounting policies to international standards. Accounting issues that are likely to generate the greatest differences with the rules applied to date are discussed below

and will help to understand the reasons for the changes in the different areas of financial information.

Appendix A describes the principal differences between Spanish Accounting Standards (SAS) and IFRS. We have classified the differences observed in three groups, depending on whether the issue is mainly related to the preparation of the balance sheet (balance sheet areas), or to the calculation of income (income areas). The third group includes issues that cannot be easily classified as pertaining to the balance sheet or income. The table has four columns. The first defines the issue, the second and third explain the IFRS and SAS treatment, respectively, and the fourth describes the differences between IFRS and SAS.

As may be observed, differences appear in many balance sheet areas, including tangible and intangible assets, inventories, grants, goodwill and provisions. There are also significant differences in areas related to the calculation of income such as start-up costs, research and development expenditure, borrowing costs, leases, extraordinary results and income taxes. Finally, significant differences are also found in other areas, such as foreign currency, investment in associates, changes in accounting policies and errors.

It should not be forgotten that Spanish standards are only minimally developed, or even non-existent, in a number of areas such as investment property, non-current assets held for sale, financial instruments, employee benefits and financial reporting in hyperinflationary economies.

In some cases, such as valuation of property, plant and equipment, valuation of intangible assets or valuation of financial instruments, IFRS allow more than one option for accounting treatments, and one or more of the permitted criteria are already established in Spanish standards. Consequently, the differences found at the regulatory level do not always take shape in accounting practice. Where IFRS provide options, the differences in accounting standards take shape in accounting practice depending on whether firms opt for accounting policies that coincide with those already applied in accordance with local standards, or for divergent treatments. For example, IAS 16 permits the valuation of fixed assets at acquisition cost (a mandatory criterion under Spanish standards) or at revalued cost. This matter, which results in differences between the two standards, need not result in differences in practice if Spanish firms opt to continue valuing their assets at acquisition cost.

Consequently, this study examines the actual impact of IFRS on reporting by Spanish firms since it is likely that not all differences between standards will have produced variations in the financial statements prepared in the transition from one set of standards to the other.⁴

4. Sample and methodology

The sample comprises IBEX 35 firms at June 30, 2005. These are the firms with the highest stock market capitalization on the continuous market and, therefore, they are representative of the behavior and evolution of the Spanish stock market over a given period.

We have eliminated financial institutions and insurance companies from the total IBEX 35 firms at the aforementioned date in view of the peculiarities of the financial industry and its specific regulation. One firm was also discarded, because it had applied IFRS since 2002. As a result, the sample comprises 26 firms.

⁴ Finally, Spanish accounting standards (applicable to unlisted groups and stand-alone firms) are currently in the process of adaptation to international standards. It is expected that this process will be completed in 2007 with the publication of a new General Chart of Accounts that is more closely in line with international trends.

The study is based on the 6-monthly information reported by these firms to the Spanish National Securities Market Commission in the first half of 2004 and 2005. The information referring to the first half of 2004 was prepared under Spanish accounting standards. The data for the first half of 2004 under international standards (presented as comparative figures) and the reconciliation of the closing balance sheet for 2004 under international and Spanish standards has been extracted from the interim information for 2005.

The Spanish National Securities Market Commission published the *Circular 1/2005*, April 1, in order to regulate the transition from national to international standards. This Circular amends the rules for reporting by firms with securities traded on the Spanish stock market.

In accordance with *Circular 1/2005*, listed Spanish groups required to apply IFRS since January 2005 were also obliged to file interim information for the first half of the year using specific formats which include, the following:

- The consolidated opening balance sheet for the business year commencing in 2005 prepared under IFRS together with the closing balance sheet for the year ended in 2004 prepared in accordance with the local standards applicable in that year.
- The balance sheet and income statement for the first half of 2005 with comparative figures for the prior year. This information must be prepared in accordance with the recognition and valuation principles applied by the group to prepare its first set of consolidated financial statements in accordance with the IFRS adopted.
- A detailed explanation of significant adjustments made in order to evaluate the effect of applying all of the IFRS adopted on the opening balance sheet for the year commencing in 2005.

These disclosure requirements allow us to consider both the balance sheet and the income statement for the first half of 2004 prepared under international rules (information included in the comparative figures disclosed together with the first half of 2005) and under Spanish accounting standards (information disclosed for the first half of 2004). We also have the closing balance sheet for 2004 prepared under Spanish standards and the opening balance sheet for 2005 under IFRS.

We address the objectives mentioned by seeking the existence of significant differences between variables, which are compared for the same subjects or firms under different conditions (related samples). The study is performed applying parametric and non-parametric tests depending on whether or not the variables concerned follow a normal distribution.

To test normality we use the Kolmogorov–Smirnov (with Lilliefors significance correction) and Shapiro–Wilks tests (*Appendix B*). The *t*-test for related samples is then applied to the variables found to be normal. Non-parametric tests (specifically the Wilcoxon signed-ranks test) are applied to non-normal variables.

5. Impact of International standards on financial reporting comparability

The objective of the study is to test for the presence of significant differences in key figures and ratios calculated on the basis of Spanish and international accounting standards, respectively denoted SAS and IFRS. The comparison was performed on interim information for the first half of 2004 because this is the first period for which figures for the balance sheet and income statement are available under both Spanish and international rules, as explained above. We then examine whether the results obtained persist in the 2004 year-end information.

5.1. Definition of variables and hypothesis

The interim information is analyzed on the basis of the following variables:

$F_{iSAShalf}$ value of the variable F_i under SAS at the close of the first half of 2004

$F_{iIFRShalf}$ value of the variable F_i under IFRS at the close of the first half of 2004

where F represents the following figures and ratios:

- balance sheet figures (fixed assets, inventories, debtors, cash, current assets, total assets, equity, long-term liabilities, short-term liabilities, total liabilities, long-term resources, total equity and liabilities);
- income statement lines (operating income, ordinary income, net income and net income attributable to equity holders of the parent);
- financial ratios (current ratio, acid test, cash ratio, solvency, indebtedness, return on assets per operating income and ordinary income, return on equity per ordinary income and net income).

Table 3 presents the definitions of these accounting figures and financial ratios.

In total, the data base comprises 25 variables measured under two sets of rules, local and international standards. Descriptive statistics for the variables are included in Appendix C (Panel 1). The null hypothesis tested for each of these variables is:

H₀₁. There are no significant differences in the value taken by the variable F_i in the interim information under SAS and IFRS.

The variables for the data base of annual information (descriptive statistics are included in Appendix C (Panel 2)) are the same with the exception of those referring to results (operating income, ordinary income, net income and net income attributable to equity holders of the parent, return on assets and return on equity), since only the balance sheet per Spanish and international standards is available, but not the income statement. In this case, 17 figures and ratios are measured under the two sets of rules:

$F_{iSASyear}$ value of the variable F_i under SAS at the close of 2004.

$F_{iIFRSyear}$ value of the variable F_i under IFRS at the close of 2004.

In this case, the null hypothesis tested is:

H₀₂. There are no significant differences in the value taken by the variable F_i in the annual information under SAS and IFRS.

5.2. Results

5.2.1. Differences in interim information

The null hypothesis **H₀₁** was analyzed using parametric and non-parametric tests (respectively, the t -test and the Wilcoxon signed-ranks test) depending on the normality or otherwise of the variables. The results are presented in Table 4.

Table 3
Accounting figures and financial ratios

Figures	Definition
Fixed assets	Intangible assets + property, plant and equipment + long-term investments + goodwill
Inventories	Goods produced for sale + goods in the process of production + materials or supplies
Debtors	Receivables + short-term investments
Cash	Cash + cash equivalents
Current assets	Inventories + debtors + Cash (as defined above)
Total assets	Fixed assets + current assets (as defined above)
Equity	Funds contributed by shareholders + retained earnings + other reserves + net income + minority interest + deferred income
Long-term liabilities	Long-term creditors + long-term provisions
Short-term liabilities	Short-term creditors + short-term provisions
Total liabilities	Long-term liabilities + short-term liabilities (as defined above)
Long-term resources	Equity + long-term liabilities (as defined above)
Equity + liabilities	Equity + total liabilities (as defined above)
OPI (Operating income)	Operating income – Operating expenses
ORDI (Ordinary income)	OPI + Financial income – Financial expenses
NETI (Net income)	ORDI + extraordinary income – extraordinary expenses – taxes
ATTI (Net income attributable to the parent)	NETI – net income attributable to minority interest
Ratios	Definition
Current ratio	Current assets/short-term liabilities (as defined above)
Acid test	(Debtors + cash)/short-term liabilities (as defined above)
Cash ratio	Cash/short-term liabilities (as defined above)
Solvency	Total assets/total liabilities (as defined above)
Indebtedness	Total liabilities/equity (as defined above)
ROA (OPI)	Operating income/total assets (as defined above)
ROA (ORDI)	Ordinary income/total assets (as defined above)
ROE (ORDI)	Ordinary income/equity (as defined above)
ROE (NETI)	Net income/equity (as defined above)

The null hypothesis was rejected for twelve 12 at a maximum error level of 10%. Hence, five balance sheet items display significant differences (at 1%) depending on whether Spanish or international standards are applied. These are debtors, cash, equity, long-term liabilities and total liabilities. In the income statement, significant differences (at 5%) were observed at the level of operating income.

Table 4
Test of hypothesis H_{01} (observations related to 26 firms)

	Statistic ^b	Sig.
Figures		
Fixed assets _{half}	−0.647	0.517
Inventories _{half}	−0.845	0.398
Debtors _{half}	−2.882	0.003*
Cash _{half}	−3.658	0.000*
Current asset _{half}	−0.723	0.469
Total asset _{half}	−0.114	0.909
Equity _{half}	−3.263	0.001*
L.T. liabilities _{half}	−3.441	0.000*
S.T. liabilities _{half}	−0.174	0.861
Total liabilities _{half}	−3.517	0.000*
L.T. resource _{half}	−0.774	0.438
Equity + liabilities _{half}	−0.114	0.909
OPI _{half}	−2.527	0.011**
ORDI _{half}	−0.063	0.949
NETI _{half}	−0.038	0.969
ATTI _{half}	−0.571	0.567
Ratios		
Current ratio _{half} ^a	0.726	0.475
Acid test _{half} ^a	1.455	0.158
Cash ratio _{half}	−3.619	0.000*
Solvency _{half}	−3.593	0.000*
Indebtedness _{half}	−2.933	0.003*
ROA (OPI) _{half}	−2.019	0.043**
ROA (ORDI) _{half}	−0.088	0.929
ROE (ORDI) _{half}	−2.501	0.012**
ROE (NETI) _{half}	−2.171	0.029**

*Significant at 1%; **significant at 5%.

^a Normal variable.

^b Statistic Z (Wilcoxon test) for no normal variables and *t* statistic for normal variables.

Finally, six financial ratios reflected the presence of significant differences due to the application of the different standards. These were cash ratio, solvency and indebtedness (at 1%), return on assets per operating income, return on equity per ordinary income and net income (at 5%).

Based on the number of positive and negative ranks, as well as the sum of ranks of each sign provided by the Wilcoxon test, we may determine the sign of the variations experienced by the different variables. To focus on the variables generating significant variations as a result of the change from Spanish to international standards, we conclude that the financial statements of Spanish firms adopting IFRS reflect:

- Increases in cash and cash equivalents, long-term and total liabilities and in the cash ratio, indebtedness and return on equity.
- Decreases in debtors, equity, operating income and the solvency ratio and return on assets (measured in terms of the operating income).

Table 5
Test of hypothesis H₀₂ (observations related to 26 firms)

	Statistic ^b	Sig.
Figures		
Fixed assets _{year}	-1.257	0.208
Inventories _{year}	-0.149	0.881
Debtors _{year}	-3.416	0.000*
Cash _{year}	-3.290	0.001*
Current assets _{year}	-2.400	0.016**
Total assets _{year}	-0.012	0.989
Equity _{year}	-2.603	0.009*
L.T. liabilities _{year}	-2.958	0.003*
S.T. liabilities _{year}	-0.876	0.380
Total liabilities _{year}	-2.958	0.003*
L.T. resource _{year}	-0.850	0.394
Equity + liabilities _{year}	-0.012	0.989
Ratios		
Current ratio _{year} ^a	1.050	0.304
Acid test _{year}	-2.908	0.003*
Cash ratio _{year}	-3.416	0.000*
Solvency _{year}	-2.273	0.023**
Indebtedness _{year}	-1.968	0.049**

*Significant at 1%; **significant at 5%.

^a Normal variable.

^b Statistic Z (Wilcoxon test) for no normal variables and *t* statistic for normal variables.

5.2.2. Differences in annual information

This section describes the results obtained from testing whether the variables undergoing significant variations in the interim information for 2004 are the same in the year-end financial statements.

As noted in Table 5, the variables for which significant differences are found are practically the same as in the interim information, but they are joined by current assets (at 5%) and the acid test ratio (at 1%).

The sign of the differences observed for the significant differences in the interim information is the same in all cases in the analysis of annual data. The two variables that were found not to be significant in the interim information, current assets and the acid test ratio, decrease due to the application of IFRS.

We conclude from the initial analysis on the variables exhibiting significant differences that the results obtained for the interim information are consistent with those found in the annual information scenario.

6. Main issues underlying differences in financial information

In this section, we analyze the issues underlying the adjustments required to adapt the Spanish firms' financial information to IFRS. The nature of the information disclosed by the sample firms with regard to the adjustments does not allow statistical analysis, and three of them in fact failed to provide any explanatory notes. Consequently, the following discussion is based on a total of 23 firms.

Numerous issues have resulted in adjustments for Spanish firms. However, certain adjustments were made by more than 50% of the firms in the sample. We focus on the issues producing these adjustments, which are goodwill amortization, measurement of financial instruments, recognition of research costs, recognition of extraordinary income and expenses, accounting method for deferred tax and recognition of deferred tax assets.

Under Spanish GAAP, goodwill is amortized over the useful life of the investment, which may not be exceed 20 years. According to IFRS 3 goodwill acquired in a business combination shall not be amortized, instead the acquirer shall test it for impairment annually.

In accordance with Spanish standards, financial assets are measured at the lower of acquisition cost and market value, while financial liabilities are measured at repayment value. IAS 39 recommends that after initial recognition, financial assets be measured at their fair values, except loans and receivables, held-to-maturity investments and investments in equity instruments that do not have a quoted market price and whose fair value cannot be reliably measured. Financial liabilities should be measured at amortized cost using the effective interest method⁵.

In Spain, R&D expenditure may be recognized as an intangible asset if certain conditions are found. Under IAS 38, research expenditure shall be recognized as expense when they are incurred and intangible assets do not arise. The development expenditures should be recognized as an intangible asset when certain conditions can be found.

The income statement in Spain uses a classification of expenses based on their nature and distinguishes between ordinary and extraordinary income and expenses. Under IAS 1, an entity shall not present any items of income and expense as extraordinary items. Spanish firms have allocated the extraordinary items to the rest of ordinary items according to their nature.

Spanish GAAP require an entity to account for deferred tax using the income statement liability method, while IAS 12 requires the balance sheet liability method. The former focuses on timing differences (i.e. differences between taxable and accounting income that originate in one period and reverse in one or more subsequent periods) and the latter on temporary differences (i.e. differences between the tax base of an asset or liability and its carrying amount in the balance sheet). All timing differences are temporary differences, but there are temporary differences that do not give rise to timing differences. Because of this treatment, deferred tax assets and liabilities arose when Spanish firms adopted IFRS.

Spanish regulations establish a time limit for the recognition of deferred tax assets; the recovery of amounts that are not expected to revert within a period of 10 years is deemed uncertain, and they may not be reflected in the accounts. IAS 12 sets no time limit, and the application of IFRS therefore results in the recognition of deferred tax assets for accounting purposes.

It has not been possible to identify the issues causing the most significant quantitative impacts on accounting figures and ratios because the information provided by the sample firms was not appropriate for this purpose. It was heterogeneous and little detailed. It is a limitation of our research.

7. Effects of IFRS on the book-to-market ratio

The effects produced by the adoption of IFRS on the relevance of financial reporting are discussed in this section. We examine the impact of IFRS on the difference between the book and

⁵ The fair value criterion was incorporated into the Spanish rules for valuation of financial instruments in very similar terms to IAS 39 and, therefore, this matter no longer differs between the two sets of standards. The adoption of this criterion was a consequence of the need to adapt Spanish legislation to IFRS. Firms applied it for the first time in 2005.

Table 6
Book value vs. market value (observations related to 26 firms)

	Z statistic	Sig.
BSAS _{half} vs. MV _{half}	−4.076	0.000*
BSAS _{year} vs. MV _{year}	−4.254	0.000*
BIFRS _{half} vs. MV _{half}	−4.457	0.000*
BIFRS _{year} vs. MV _{year}	−4.457	0.000*

*Significant at 1%; **significant at 5%.

market value of firms, which is to say the book-to-market ratio. This issue is particularly relevant because one of the reasons for the adoption of international standards was to ensure the generation of useful information for the stock market, which would imply narrowing the gap between a firm's book and market value.

7.1. Definition of variables and hypothesis

We began by testing the market value of Spanish firms to establish whether the figures differ significantly from book value under Spanish standards and IFRS in both June and December. We found significant differences as shown in Table 6.

We then analyzed the gap between book and market value (measured by the book-to-market ratio—BtM) to establish whether it differed depending on the measurement of book value under local or international standards. The variables concerned are:

$$\text{BtM}_{i\text{SAS}} = \frac{B_{i\text{SAS}}}{MV_i} \quad (1)$$

and

$$\text{BtM}_{i\text{IFRS}} = \frac{B_{i\text{IFRS}}}{MV_i} \quad (2)$$

where $\text{BtM}_{i\text{SAS}}$ is the book-to-market ratio per SAS; $\text{BtM}_{i\text{IFRS}}$ is the book-to-market ratio per IFRS; $B_{i\text{SAS}}$ is book value per SAS; $B_{i\text{IFRS}}$ is book value per IFRS; MV_i is market value. The subscript i represents firms.

Based on these variables, we tested the null hypothesis:

H₀₃. There are no significant differences in the book-to-market ratio per SAS and IFRS.

We tested the hypothesis with values at June and December.

Finally, we tested whether any evolution of market value is observable in the period analyzed (June through December 2004) in line with the evolution of book value per international standards, or whether this is closer to book value under Spanish rules.

To this end, we utilized the absolute values for relative variations in market value and book value per SAS and IFRS at June and December.

$$\text{VAR}_{i\text{MV}} = \left| \frac{MV_{i\text{dec}} - MV_{i\text{jun}}}{MV_{i\text{jun}}} \right| \quad (3)$$

$$\text{VAR}_{i\text{BSAS}} = \left| \frac{B_{i\text{SASdec}} - B_{i\text{SASjun}}}{B_{i\text{SASjun}}} \right| \quad (4)$$

Table 7
Test of hypothesis H_{03} (observations related to 26 firms)

	Z statistic	Sig.
BtM _{SAS} half vs. BtM _{IFRS} half	-3.187	0.001*
BtM _{SAS} year vs. BtM _{IFRS} year	-2.273	0.023**

*Significant at 1%; **significant at 5%.

$$\text{VAR}_{i\text{BIFRS}} = \left| \frac{B_{i\text{IFRSdec}} - B_{i\text{IFRSjun}}}{B_{i\text{IFRSjun}}} \right| \quad (5)$$

The null hypotheses tested are defined as follows:

H₀₄. There are no significant differences between the relative variation of book value per SAS (VAR_{BSAS}) and the variation in market value (VAR_{MV}) arising in the period June through December 2004.

H₀₅. There are no significant differences between the relative variation of book value per IFRS ($\text{VAR}_{\text{BIFRS}}$) and the variation in market value (VAR_{MV}) arising in the period June through December 2004.

Descriptive statistics for the variables utilized in this section are given in [Appendix C](#) (Panel 3).

7.2. Results

7.2.1. Impact of IFRS on the book-to-market ratio

Having established that book value differs significantly from market value using either of the two standards, we tested H_{03} in order to discover whether differences arise in the book-to-market ratio depending on the application of SAS or IFRS and looked for any narrowing of the gap between the book and market values of the Spanish firms.

The results presented in [Table 7](#) show that the book-to-market ratio differs significantly depending on the rules applied in both June (at 1%) and December (at 5%). Meanwhile, the sum of ranks in the Wilcoxon tests reveals that book value is actually further from market value when IFRS are applied than when Spanish accounting rules are used. Similar results were found by [Niskanen et al. \(2000\)](#), based on Finnish GAAP, [Lin and Chen \(2005\)](#), based on Chinese GAAP, and [Schiebel \(2006\)](#), based on German GAAP. In our survey the results are the same at both of the dates considered, although the gap appears to narrow in December.

7.2.2. Evolution of market value and book value

Finally, on the basis of the tests of H_{04} and H_{05} concerning the evolution of market and book value, both hypotheses must be rejected as shown by the results presented in [Table 8](#). Thus, the

Table 8
Test of hypothesis H_{04} and H_{05} (observations related to 26 firms)

		Z Statistic	Sig.
H_{04}	VAR_{BSAS} vs. VAR_{MV}	-2.857	0.004*
H_{05}	$\text{VAR}_{\text{BIFRS}}$ vs. VAR_{MV}	-2.502	0.012**

*Significant at 1%; **significant at 5%.

relative variation in book value depending on the application of Spanish or international accounting standards, and the observed difference in market value for the period June–December 2004, are different. These differences are statistically significant (at 1% when book value is measured using Spanish accounting standards and 5% for IFRS).

This result means that the evolution of the market value of Spanish firms is not in line with their book value in the period analyzed, regardless of the rules applied by the firms to prepare their financial information. However, the different levels of signification at which hypotheses H_{04} and H_{05} are rejected, as well as the sums of ranks, indicate that the relative variation in market value differs more widely from the variation in book value measured using Spanish than international standards.

8. Conclusions

This study has two objectives: (1) to establish whether the financial statements of Spanish firms are comparable when some apply IFRS and others continue to use Spanish standards and (2) to determine the effect of the adoption of IFRS on the relevance of financial reporting in Spain. We measured the quantitative impact of the application of IFRS on financial figures and ratios. We compared financial information prepared under Spanish and international accounting rules and tested for the existence or otherwise of statistically significant differences. We also analyzed the impact of IFRS on the difference between the book and market value of firms, the book-to-market ratio, to determine the relevance of IFRS.

The results of the study indicate that the image of listed Spanish firms differs significantly when IFRS rather SAS are applied in the preparation of financial information for the first half of 2004. In the balance sheet, this effect is most significant in debtors, cash and cash equivalents, equity, long-term and total liabilities. The figures are all relevant for the evaluation of a firm's financial structure.

Based on the analysis of significant adjustments made by firms to adapt their financial statements to international standards, the main causes of the significant variation in current assets were the application of fair value to financial instruments, the reclassification of accounts, and changes in the scope of consolidation. On the liability side, significant variations were due to the change in the rules for the valuation of debts and changes in the scope of consolidation. The significant variation in equity is due to direct adjustments and to the indirect effect of adjustments to results.

Fixed assets and inventories were the only items that did not vary significantly. Fixed assets did not vary because the majority of firms opted not to change the fixed asset valuation criterion applied (acquisition cost). In the case of inventories, there were no significant variations because the LIFO method, which is not permitted under IFRS, was not generally applied by Spanish firms.

In the income statement, significant variations were found in operating income depending on whether Spanish standards or IFRS were used because there are differences in the treatment of revenues and expenses (R&D expenses, asset impairment, etc.). Another difference between Spanish and international standards which had a significant impact on the firms analyzed was the treatment of extraordinary income, which made it necessary to reclassify certain extraordinary items under SAS as operating income under IFRS.

Cash, solvency and indebtedness ratios, as well as the return on assets and return on equity, varied significantly as a result of the changes in the balance sheet and income statement. We conclude that the economic and financial positions of Spanish firms, reflected in accordance with IFRS, are significantly different from the image presented by local accounting standards. Furthermore, the quantitative impact of IFRS on the interim information persists when the period analyzed is extended to the full year.

The results show that book value differs significantly from market value under both standards. The results also show that the book-to-market ratio varies significantly depending on the accounting standards applied, and is less than one in both cases. We also conclude that the gap between book and market value is wider when IFRS are applied than when Spanish standards are utilized. The conclusion is the same at both the dates considered (June and December 2004), although the difference appears to be smaller in December.

According to Feltham and Olshon (1995), accounting policies may be defined as conservative when the market value of the firm exceeds the book value (ex-ante or balance conservatism). Differences in accounting conservatism in the international context have been analyzed in studies such as Joos and Lang (1994), Arce and Mora (2002) and García and Mora (2004), which reveal that common-law countries are less conservative than code-law countries. Assuming that IFRS are nearer to common-law countries, especially the United States and United Kingdom,⁶ the international standards may be expected to show less conservatism than SAS, because the Spanish accounting system is code-law based.

However, the manner in which Spanish firms have applied IFRS continues to provide conservative financial information. This result may be due to cultural values inherent in the Spanish accounting tradition. Consequently, it would be of interest in the future to explore changes in the book-to-market ratio in different countries following the application of IFRS in order to establish whether the pre-existing level of conservatism in local accounting standards is related to the gap between market and book value after the adoption of international accounting standards. It is likely that this conservatism, which is without doubt linked to cultural and legal factors, has some impact on the choice of recognition and valuation criteria from among the options provided by IFRS.

Based on the analysis of the evolution of market value and book value in the last quarter of 2004, we conclude that the relative variation in market value is not in line with the variation in book value, regardless of the criteria applied by the firms in the preparation of their financial information. However, the results indicate that the gap between the relative variation in market value is wider than the relative variation in book value when measured under Spanish rules rather than IFRS. Considering that the period analyzed is short and that firms have only recently begun to apply IFRS, it may be expected in the medium to long-term that international standards will result in an evolution of firms' book values that is more in line with their market value.

Our results should be of interest to the institutions involved in implementing the changes necessary to harmonize European and international accounting. Our results also may help Spanish standard setters improve the process of reforming the General Chart of Accounts in order to ensure convergence between Spanish accounting standards and IFRS for all companies. Users also should benefit from the findings because they highlight the comparability problem between firms and the absence of any improvement in relevance after the adoption of IFRS.

The study has some limitations. First, the period for the analysis is short, and it would be of interest to extend the time horizon. Likewise, the sample of firms analyzed is small. They are the firms with the highest stock market capitalization and, therefore, they are representative of the behaviour and evolution of the Spanish stock market over a given period. Nevertheless, it would be worth repeating the study for all listed companies currently applying IFRS. Finally, our study does not allow quantification of the direct effect of each standard on the accounting figures and financial ratios. This limitation would, however, be difficult to overcome, because the information furnished by firms is not sufficiently detailed and is too patchy for this purpose, as explained above.

⁶ See, for example, Rivera (1990) and Wallace (1990).

Appendix A

Differences between IFRS and Spanish Accounting Standards^a

Issue	IFRS treatment	SAS treatment	Main differences
Balance sheet areas			
Measurement of property, plant and equipment and intangible assets subsequent to initial recognition	IAS 16 and IAS 38: - Acquisition cost, or - fair value	GCA (Part V): - Acquisition cost	SAS do not allow fair value
Amortization of intangible assets	IAS 38: Allows for the possibility of unlimited useful life of intangible assets, which therefore need not be amortized	GCA (Part V): Does not envisage the possibility of unlimited useful life. All intangible assets are amortized	Under SAS intangible assets are always amortized. Under IFRS, assets with unlimited useful life need not be amortized
Impairment of assets	IAS 36: - Impairment loss is reflected by writing down the book value of the asset to its recoverable amount and is recognized as an expense. - Recoverable amount is estimated for individual assets and if this is not possible it should be estimated for the cash-generating unit.	GCA (Part V): - Distinguishes between reversible and irreversible impairment. Irreversible impairment (when reversal of the impairment loss is not expected) is reflected by writing down the book value of the asset to its recoverable amount and is recognized as an expense. Reversible impairment (when reversal of the impairment loss is possible) is reflected by provisions. - Recoverable amount is estimated for individual asset. Cash-generating unit concept is not included.	- IFRS does not distinguish between reversible and irreversible impairment. The treatment is different in the case of reversible impairment. - SAS only envisage the estimation of recoverable amounts for individual assets but do not include the cash-generating unit concept.
Measurement of inventories	IAS 2: - At the lower of cost and net realizable value. - When specific identification of costs is not possible, FIFO or weighted average cost formulas should be used.	GCA (Part V): - At the lower of cost and net realizable value. - If specific identification of costs is not possible, FIFO, LIFO, weighted average or other cost formulas should be used.	IFRS only allow the use of weighted average and FIFO cost formulas, while SAS also permit LIFO and similar methods.

Issue	IFRS treatment	SAS treatment	Main differences
Presentation of grants related to assets	<p>IAS 20:</p> <ul style="list-style-type: none"> - As deferred income which is recognized as income over the useful life of the asset, or - by deducting the grant in arriving at the carrying amount of the asset. The grant is recognized as income by way of a reduced depreciation charge. 	<p>GCA (Part V):</p> <p>As deferred income which is recognized as extraordinary income over the useful life of the asset.</p>	<p>SAS do not allow to presentation of grants by deducting it in arriving at the carrying amount of the asset.</p> <p>When the grant is presented as deferred income, under SAS it is recognized as extraordinary income over the useful life of the asset. These amounts are not extraordinary items under IFRS.</p>
Recognition of grants related to non-depreciable assets	<p>IAS 20:</p> <p>The amount is recognized as income over the periods which bear the cost of meeting the obligations conditioning grants of this nature.</p>	<p>GCA (Part V):</p> <p>The grant is taken to income in the year the non-depreciable asset is retired or sold.</p>	<p>Under IFRS the grant is recognize as income to compensate the cost of certain obligations. Under SAS, the grant is not recognized as income while the asset remains in the firm.</p>
Goodwill	<p>IFRS 3:</p> <p>Goodwill is not amortized; but firm must test for impairment annually. Any impairment must be recognized.</p>	<p>RPCAA (Chapter III):</p> <p>Goodwill should be amortized systematically over the useful life, which may not exceed 20 years.</p>	<p>SAS establish a maximum amortization period of 20 years. Under IFRS goodwill is not amortized.</p>
Financial Instruments	<p>IAS 39</p> <p>Financial assets: fair value (except loans and receivables, held-to-maturity investments. . .)</p> <p>Financial liabilities: amortised cost.</p>	<p>GCA (Part V)^b</p> <p>Financial assets: lower of acquisition cost and market.</p> <p>Financial liabilities: repayment value.</p>	<p>SAS do not allow measurement of financial assets at fair value^b. Under IFRS financial liabilities should be valued at amortised cost and under SAS at repayment value.</p>
Provisions	<p>IAS 37:</p> <p>A provision should be recognized when, and only when, the firm has a present obligation, it is probable that an outflow of resources will be required to settle it, and the amount of the obligation can be reliably estimated.</p>	<p>GCA (Part V):</p> <p>Two types of provisions exist: those that correct the value of assets and those representing an obligation, which are recorded as liabilities.</p>	<p>IFRS only consider provisions representing an obligation, since impairments in the value of assets are recognized directly by writing down the value of the asset.</p>

Income areas			
Start-up costs	IAS 38: Start-up costs should be expensed when incurred.	GCA (Part V): Start-up costs are recognized as an asset when incurred and are amortized over 5 years.	Under IFRS start-up costs are expensed when incurred and under SAS they are deferred over a period of 5 years.
R&D expenditure	IAS 38: Expenditure on research should be recognize as an expense when it is incurred. Development expenditure should be recognized as an intangible asset if the firm can show the amount meets certain conditions.	GCA (Part V): Expenditure on research and development may be recognized as an intangible asset if the firm can show the amount meets certain conditions.	SAS allows the capitalization of research and development expenses, while IFRS does not permit the capitalization of research expenditure, though it requires capitalization of development expenditure when certain conditions are observed.
Borrowing costs	IAS 23: - Borrowing costs eligible for capitalization are the borrowing cost incurred less any investment income on the temporary investment of the borrowings. - The amount of borrowing costs capitalized during a period should not exceed the amount of borrowing costs incurred.	GCA (Part V): - Borrowing costs eligible for capitalization are the borrowing cost incurred - The limit to borrowing costs for capitalization is the market value of the asset.	SAS do not envisage any investment income on the temporary investment of the borrowings to determine borrowing costs eligible for capitalization. The limit to borrowing costs for capitalization is different: under IFRS, the amount of borrowing costs incurred, and, under SAS, the market value of the asset.
Income areas			
Definition of Finance lease	IAS 17: A lease is a finance lease if it transfers substantially all risks and rewards incident to ownership. Some examples:	GCA (Part V): A lease is a finance lease when the lessee has the option to purchase the asset and there are no doubts it will happen by the end of the lease term.	SAS confine the definition of a lease as financial to the existence of a purchase option, while IFRS refer to certain other situations

Issue	IFRS treatment	SAS treatment	Main differences
Recognition of Finance lease	<ul style="list-style-type: none"> - the lease transfers ownership - the lessee has the option to purchase - the lease term is for the major part of the economic life - the present value of the minimum lease payments amounts to at least substantially all of the fair value. - The leased asset is of specialized nature. <p>IAS 17:</p> <p>A finance lease should be recognized as an asset and a liability in the balance sheet at the same amount. Finance charges are recognized as an expense when incurred. The depreciation of leased assets should be over the shorter of useful life and the term of the lease in cases where subsequent ownership of the asset is not guaranteed.</p>	<p>GCA (Part V):</p> <p>A finance lease should be recognized as an asset and a liability in the balance sheet. The liability includes the finance charge. Leased assets are depreciated over their useful lives.</p>	<p>Under IFRS, the liability does not include finance charges, which are included under SAS.</p> <p>IFRS propose depreciation of leased assets over the shorter of useful life and the term of the lease in cases where subsequent ownership of the asset is not guaranteed. Under SAS, depreciation is provided over the useful life of the asset in all cases.</p>
Extraordinary income and expense	<p>The annual income statement does not include income or expenses of an extraordinary nature.</p>	<p>GCA (Part IV):</p> <p>The annual income statement distinguishes between income and expenses of an ordinary and extraordinary nature. Some examples of extraordinary income (expenses) are: income (losses) from sale of property, plant and equipment, income (expense) from prior years' errors, etc.</p>	<p>Certain income and expenses considered extraordinary items under SAS are treated as ordinary under IFRS, which do not permit the recognition of an extraordinary result.</p>
Income taxes	<p>IAS 12:</p> <p>This requires an entity to account for deferred tax using the balance sheet liability method.</p>	<p>GAC (Part IV)</p> <p>The rule requires an entity to account for deferred tax using the income statement liability method.</p>	<p>IFRS require for the treatment of deferred taxes using the balance sheet liability method, while GAC requires the income statement liability method. Under IFRS, an entity must offset deferred tax assets and deferred tax liabilities, which is prohibited under SAS.</p>

	<p>A deferred tax asset is recognized when it is probable that taxable income will be available against which the deductible temporary difference can be utilized (no temporal limit). An entity shall offset deferred tax assets and deferred tax liabilities of the same taxable entity if it complies with certain conditions.</p>	<p>A deferred tax asset is recognized when future recovery is likely (within a maximum period of 10 years). An entity cannot offset deferred tax assets and deferred tax liabilities.</p>	
<p>Other areas Foreign currency</p>	<p>IAS 21: Foreign currency transactions are recorded, on initial recognition, in the functional currency. Exchange differences arising at each balance sheet date are recognized in profit or loss in the period in which they arise.</p>	<p>RPCAA (Chapter V) GCA (Part V): A foreign currency transaction is recorded, on initial recognition, in the presentation currency. At each balance sheet date, exchange gains are, in general, deferred until realized. Negative exchange differences are recognized as an expense in the period in which they arise. SAS also allow the capitalization of exchange differences associated with liabilities incurred in the acquisition or construction of assets under certain circumstances.</p>	<p>Under IFRS, exchange gains or losses arising at the balance sheet date must be taken to results. Under SAS, the treatment of negative exchange differences is the same, but it differs for exchange gains. Exchange gains are, in general, deferred until realized. The capitalization of exchange differences associated with liabilities incurred in the acquisition or construction of assets under certain circumstances is another difference between IFRS and SAS.</p>
<p>Investment in associates</p>	<p>IAS 28: An associate is an enterprise in which the investor has significant influence and which is neither a subsidiary nor a joint venture of the investor. It is presumed that the investor has significant influence when the investor holds 20% or more of the voting power of the investee.</p>	<p>RPCAA (Chapter I): An associate is an enterprise in which the investor has significant influence and which is neither a subsidiary nor a joint venture of the investor. It is presumed that the investor has significant influence when the investor holds 20% or more (3% if the firm is listed on a stock market) of the voting power of the investee.</p>	<p>Under both standards an investee company should be treated as an associate in the case of significant influence. However IFRS establish that such influence exists when the interest held is equal to or greater than 20%, while SAS establish a limit of 3% if the investee company is listed.</p>

Appendix A (Continued)

Issue	IFRS treatment	SAS treatment	Main differences
Recognition of changes in accounting policies	IAS 8: Changes in accounting policies should be recognized retrospectively. The entity is required to adjust the opening balance of each affected component of equity for the earliest prior period presented and the comparative amounts, as if the new accounting policy had always been applied.	GCA (Part V): Changes in accounting policies causes an adjustment, which is recognized as extraordinary income or expense for the year in which the change is made. Comparative amounts are not corrected.	IFRS require changes in accounting policies to be recognized retrospectively, which is to say as if the new criteria had always been applied. Under SAS, these adjustments are recognized as extraordinary results for the year in which the change is made, and no correction is made to the comparative information.
Recognition of errors	IAS 8: The financial statements and the comparative amounts should be presented as if the error had been corrected when it occurred.	GCA (Part V): A prior period error causes an adjustment which should be recognized as extraordinary income or expense for the year in which the error is corrected.	In accordance with IFRS, the financial statements (including comparative statements) must be presented as if the error had been corrected in the period in which it occurred. This criterion is not followed by SAS, which require adjustments to be recognized as extraordinary results.

SAS: Spanish accounting standards; GCA: General Chart of Accounts; RPCAA: Regulation for preparation of consolidated annual accounts; IAS: International accounting standards; IFRS: International Financial Reporting Standards.

^a Some issues regulated in IFRS are not regulated in depth in SAS. Because of this, such issues could also result in differences in the financial statements when they are prepared under IFRS rather than SAS. Some examples are: investment property, non-current assets held for sale, financial instruments, employee benefits, financial reporting in hyperinflationary economies, etc.

^b The fair value criterion was incorporated into the Spanish rules for valuation of financial instruments in very similar terms to IAS 39, and this matter therefore no longer differs between the two sets of standards. The adoption of this criterion was a consequence of the need to adapt Spanish legislation to IFRS. Firms applied it for the first time in 2005.

Appendix B. Normality test

	Kolmogorov–Smirnov		Shapiro–Wilk	
	Statistic	Sig.	Statistic	Sig.
Panel 1. Normality test for half-year accounting figures and financial ratios (observations related to 26 firms)				
Fixed assets _{SA} Half	0.266	0.000	0.670	0.000
Inventories _{SA} Half	0.184	0.019	0.827	0.000
Debtors _{SA} Half	0.187	0.016	0.832	0.001
Cash _{SA} Half	0.202	0.006	0.805	0.000
Current assets _{SA} Half	0.196	0.009	0.854	0.001
Total assets _{SA} Half	0.239	0.000	0.713	0.000
Equity _{SA} Half	0.285	0.000	0.651	0.000
L.T. liabilities _{SA} Half	0.272	0.000	0.671	0.000
S.T. liabilities _{SA} Half	0.206	0.005	0.818	0.000
Total liabilities _{SA} Half	0.221	0.002	0.730	0.000
L.T. resources _{SA} Half	0.262	0.000	0.675	0.000
Equity + liabilities _{SA} Half	0.239	0.000	0.713	0.000
OPI _{SA} Half	0.361	0.000	0.645	0.000
ORDI _{SA} Half	0.356	0.000	0.656	0.000
NETI _{SA} Half	0.359	0.000	0.712	0.000
ATTI _{SA} Half	0.341	0.000	0.719	0.000
Current ratio _{SA} Half ^a	0.095	0.200	0.966	0.507
Acid test _{SA} Half ^a	0.112	0.200	0.950	0.216
Cash ratio _{SA} Half	0.183	0.021	0.780	0.000
Solvency _{SA} Half	0.219	0.002	0.883	0.006
Indebtedness _{SA} Half	0.227	0.001	0.804	0.000
ROA (OPI) _{SA} Half	0.203	0.006	0.811	0.000
ROA (ORDI) _{SA} Half	0.197	0.009	0.775	0.000
ROE (ORDI) _{SA} Half	0.253	0.000	0.805	0.000
ROE (NETI) _{SA} Half	0.283	0.000	0.755	0.000
Fixed assets _{IFR} Half	0.257	0.000	0.671	0.000
Inventories _{IFR} Half	0.198	0.008	0.806	0.000
Debtors _{IFR} Half	0.203	0.006	0.803	0.000
Cash _{IFR} Half	0.249	0.000	0.734	0.000
Current assets _{IFR} Half	0.200	0.007	0.853	0.001
Total assets _{IFR} Half	0.242	0.000	0.714	0.000
Equity _{IFR} Half	0.292	0.000	0.687	0.000
L.T. liabilities _{IFR} Half	0.299	0.000	0.661	0.000
S.T. liabilities _{IFR} Half	0.204	0.005	0.781	0.000
Total liabilities _{IFR} Half	0.229	0.001	0.718	0.000
L.T. resources _{IFR} Half	0.253	0.000	0.667	0.000
Equity + liabilities _{IFR} Half	0.242	0.000	0.714	0.000
OPI _{IFR} Half	0.350	0.000	0.670	0.000
ORDI _{IFR} Half	0.335	0.000	0.679	0.000
NETI _{IFR} Half	0.321	0.000	0.686	0.000
ATTI _{IFR} Half	0.314	0.000	0.687	0.000
Current ratio _{IFR} Half ^a	0.106	0.200	0.973	0.674
Acid test _{IFR} Half ^a	0.145	0.153	0.958	0.337
Cash ratio _{IFR} Half	0.252	0.000	0.817	0.000
Solvency _{IFR} Half	0.181	0.023	0.853	0.001
Indebtedness _{IFR} Half	0.222	0.002	0.865	0.002
ROA (OPI) _{IFR} Half	0.204	0.005	0.817	0.000
ROA (ORDI) _{IFR} Half	0.221	0.002	0.802	0.000

Appendix B (Continued)

	Kolmogorov–Smirnov		Shapiro–Wilk	
	Statistic	Sig.	Statistic	Sig.
ROE (ORDI) _{IFRS} half	0.228	0.001	0.841	0.001
ROE (NETI) _{IFRS} half	0.218	0.002	0.832	0.001
Panel 2. Normality test for annual accounting figures and financial ratios (observations related to 26 firms)				
Fixed assets _{SAS} year	0.272	0.000	.691	.000
Inventories _{SAS} year	0.206	0.005	.823	.000
Debtors _{SAS} year	0.191	0.013	.838	.001
Cash _{SAS} year	0.329	0.000	.591	.000
Current assets _{SAS} year	0.211	0.003	.854	.001
Total assets _{SAS} year	0.237	0.000	.735	.000
Equity _{SAS} year	0.269	0.000	.663	.000
L.T. liabilities _{SAS} year	0.265	0.000	.709	.000
S.T. liabilities _{SAS} year	0.214	0.003	.767	.000
Total liabilities _{SAS} year	0.215	0.002	.751	.000
L.T. resources _{SAS} year	0.258	0.000	.701	.000
Equity + liabilities _{SAS} year	0.237	0.000	.735	.000
Current ratio _{SAS} year ^a	0.105	0.200	.971	.622
Acid test _{SAS} year	0.174	0.036	.896	.011
Cash ratio _{SAS} year	0.340	0.000	.560	.000
Solvency _{SAS} year	0.263	0.000	.852	.001
Indebtedness _{SAS} year	0.237	0.000	.688	.000
Fixed assets _{IFRS} year	0.279	0.000	.693	.000
Inventories _{IFRS} year	0.211	0.003	.799	.000
Debtors _{IFRS} year	0.190	0.013	.818	.000
Cash _{IFRS} year	0.279	0.000	.672	.000
Current assets _{IFRS} year	0.217	0.002	.850	.001
Total assets _{IFRS} year	0.229	0.001	.736	.000
Equity _{IFRS} year	0.268	0.000	.708	.000
L.T. liabilities _{IFRS} year	0.306	0.000	.681	.000
S.T. liabilities _{IFRS} year	0.213	0.003	.750	.000
Total liabilities _{IFRS} year	0.225	0.001	.736	.000
L.T. resources _{IFRS} year	0.256	0.000	.690	.000
Equity + liabilities _{IFRS} year	0.229	0.001	.736	.000
Current ratio _{IFRS} year ^a	0.081	0.200	.974	.709
Acid test _{IFRS} year ^a	0.129	0.200	.942	.136
Cash ratio _{IFRS} year	0.252	0.000	.694	.000
Solvency _{IFRS} year	0.230	0.001	.839	.001
Indebtedness _{IFRS} year	0.234	0.001	.868	.003
Panel 3. Normality test for variables related to book and market values (observations related to 26 firms)				
MV _{half}	0.340	0.000	0.499	0.000
MV _{year}	0.275	0.000	0.594	0.000
BtM _{SAS} half	0.287	0.000	0.611	0.000
BtM _{IFRS} half	0.258	0.000	0.669	0.000
BtM _{SAS} year	0.253	0.000	0.650	0.000
BtM _{IFRS} year	0.214	0.003	0.768	0.000
VAR _{MV}	0.379	0.000	0.442	0.000
VAR _{BSAS}	0.187	0.020	0.843	0.001
VAR _{BIFRS}	0.218	0.003	0.750	0.000

^a Variables found to be normal.

Appendix C. Descriptive statistics

	Min.	Max.	Mean	St. dev.
Panel 1. Half-year accounting figures (thousands of euros) and financial ratios. Observations related to 26 firms				
Fixed assets _{SAShalf}	191069	48807343	8564971	12186920
Inventories _{SAShalf}	182	2423000	613723	667286
Debtors _{SAShalf}	206992	9290449	2423968	2424353
Cash _{SAShalf}	1772	639990	140090	159094
Current ratios _{SAShalf} ^a	304473	10530236	3177780	2911118
Acid test _{SAShalf} ^a	638427	59337579	11742752	14512812
Equity _{SAShalf}	145941	19162683	4030176	5515859
L.T. liabilities _{SAShalf}	60286	25756350	4388105	6227689
S.T. liabilities _{SAShalf}	212833	14237749	3293780	3401346
Total liabilities _{SAShalf}	273119	39994099	7681885	9341511
L.T. resources _{SAShalf}	293006	44919033	8418281	11403499
Equity + liabilities _{SAShalf}	622679	59156782	11712061	14487326
OPI _{SAShalf}	-42952	3420954	555696	804732
ORDI _{SAShalf}	-102958	2696319	455996	650357
NETI _{SAShalf}	-89964	1411054	302710	383823
ATTI _{SAShalf}	-81952	1254177	276446	344066
Current ratios _{SAShalf}	0.3700	1.9906	1.1110	0.4005
Acid test _{SAShalf}	0.3617	1.5435	0.8505	0.3128
Cash ratios _{SAShalf}	0.0028	0.2064	0.0450	0.0427
Solvency _{SAShalf}	1.1072	2.6054	1.6040	0.3938
Indebtedness _{SAShalf}	0.6229	9.3262	2.6118	2.0139
ROA (OPI) _{SAShalf}	-0.0176	0.2310	0.0531	0.0450
ROA (ORDI) _{SAShalf}	-0.0421	0.2343	0.0459	0.0466
ROE (ORDI) _{SAShalf}	-0.4352	0.4954	0.1297	0.1646
ROE (NETI) _{SAShalf}	-0.3803	0.3553	0.0889	0.1246
Fixed assets _{IFRShalf}	185907	46257898	8394736	11844466
Inventories _{IFRShalf}	182	2579829	650949	737811
Debtors _{IFRShalf}	188375	9588698	2164385	2307923
Cash _{IFRShalf}	3472	2052000	364113	481496
Current assets _{IFRShalf}	299945	10910269	3179447	2939311
Total assets _{IFRShalf}	638507	57168167	11574184	14266645
Equity _{IFRShalf}	122507	13171000	3148924	3874412
L.T. liabilities _{IFRShalf}	59960	29951657	5177272	7641889
S.T. liabilities _{IFRShalf}	238380	15375359	3247988	3420861
Total liabilities _{IFRShalf}	298340	45327016	8425260	10688006
L.T. resources _{IFRShalf}	277337	41792808	8326196	11301627
Equity + liabilities _{IFRShalf}	638507	57168167	11574184	14266645
OPI _{IFRShalf}	-46857	2874476	523194	742763
ORDI _{IFRShalf}	-118200	2266309	443634	615192
NETI _{IFRShalf}	-88137	1583647	309343	424559
ATTI _{IFRShalf}	-80125	1464002	292042	396241
Current assets _{IFRShalf} ^a	0.3765	1.9961	1.0990	0.3814
Total assets _{IFRShalf} ^a	0.3187	1.4445	0.8220	0.3148
Cash ratio _{IFRShalf}	0.0055	0.5766	0.1348	0.1477
Solvency _{IFRShalf}	1.1549	2.2845	1.5025	0.3410
Indebtedness _{IFRShalf}	0.7785	6.4563	3.0254	1.9212
ROA (OPI) _{IFRShalf}	-0.0177	0.2166	0.0496	0.0426
ROA (ORDI) _{IFRShalf}	-0.0446	0.2189	0.0448	0.0444
ROE (ORDI) _{IFRShalf}	-0.3326	0.4807	0.1462	0.1516
ROE (NETI) _{IFRShalf}	-0.2480	0.3168	0.1016	0.1042

Appendix C (Continued)

	Min.	Max.	Mean	St. Dev.
Panel 2. Annual accounting figures (thousands of euros) and financial ratios. Observations related to 26 firms				
Fixed assets _{SASyear}	189689	50982288	9140493	12665136
Inventories _{SASyear}	172	2652000	668457	741069
Debtors _{SASyear}	187740	9427797	2446015	2419533
Cash _{SASyear}	300	3303000	453787	805443
Current ratio _{SASyear} ^a	303801	12126000	3568259	3338302
Total assets _{SASyear}	627702	61934715	12708752	15338040
Equity _{SASyear}	180895	19230305	4254394	5633932
L.T. liabilities _{SASyear}	66944	23150655	4572989	6094337
S.T. liabilities _{SASyear}	201775	19553755	3881370	4428568
Total liabilities _{SASyear}	268719	42704410	8454358	10097295
L.T. resources _{SASyear}	346689	42380960	8827382	11411097
Equity + liabilities _{SASyear}	627702	61934715	12708752	15338040
Current ratio _{IFRSyear} ^a	0.3267	2.1638	1.1549	0.4654
Acid test _{IFRSyear} ^a	0.3215	2.1629	0.8879	0.4035
Cash ratio _{SASyear}	0.0005	1.2325	0.1388	0.2547
Solvency _{SASyear}	1.0841	2.7277	1.6123	0.4192
Indebtedness _{SASyear}	0.5788	11.8917	2.6337	2.3666
Fixed assets _{IFRSyear}	188810	48932285	9063921	12447570
Inventories _{IFRSyear}	172	2901075	697619	807833
Debtors _{IFRSyear}	107195	9576706	2293022	2420879
Cash _{IFRSyear}	2027	3321000	541601	807375
Current assets _{IFRSyear}	301936	11966000	3532241	3320751
Total assets _{IFRSyear}	630466	60078856	12596163	15182723
Equity _{IFRSyear}	208314	14033000	3456881	4071896
L.T. liabilities _{IFRSyear}	66601	27458526	5336712	7601844
S.T. liabilities _{IFRSyear}	208482	19993802	3802569	4400444
Total liabilities _{IFRSyear}	275083	47452328	9139281	11438136
L.T. resources _{IFRSyear}	331161	40538000	8793594	11464859
Equity + liabilities _{IFRSyear}	630466	60078856	12596163	15182723
Current ratio _{IFRSyear}	0.3315	2.0817	1.1385	0.4397
Acid test _{IFRSyear}	0.1812	2.0808	0.8577	0.4102
Cash ratio _{IFRSyear}	0.0030	1.1928	0.1873	0.2590
Solvency _{IFRSyear}	1.1329	2.7383	1.5481	0.3930
Indebtedness _{IFRSyear}	0.5753	7.5238	2.8195	1.8885
Panel 3. Variables related to book and market values. Observations related to 26 firms				
B _{SAShalf} (thousands of euros)	145941	19162683	4030176	5515859
B _{IFRShalf} (thousands of euros)	122507	13171000	3148924	3874412
MV _{half} (thousands of euros)	887785	61442939	7258722	12228248
BtM _{SAShalf}	0.0566	2.3234	0.6503	0.4625
BtM _{IFRShalf}	0.0610	2.0366	0.5599	0.4021
B _{SASyear} (thousands of euros)	180895	19230305	4254394	5633932
B _{IFRSyear} (thousands of euros)	208314	14033000	3456881	4071896
MV _{year} (thousands of euros)	1170227	69432038	10384986	14848645
BtM _{SASyear}	0.0431	0.9582	0.4500	0.2790
BtM _{IFRSyear}	0.0698	0.7760	0.4036	0.2399
VAR _{MV}	0.0039	9.9207	0.9370	2.1494
VAR _{BSAS}	0.0000	0.5800	0.1404	0.1352
VAR _{BIFRS}	0.0200	0.7000	0.1610	0.1543

^a Variables found to be normal.

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