



## IMPACT OF IFRS ON ACCOUNTING DATA – GRAY INDEX OF CONSERVATISM APPLIED TO SOME EUROPEAN LISTED COMPANIES

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### Abstract

*The Gray index of conservatism (also called index of comparability) is a good instrument to assess differences between two or more sets of accounting standards. We use this index to measure the impact of the compulsory application of IFRS in Europe, in 2005. The sample contains data from almost 600 companies listed on Euronext markets in 2005 (Amsterdam, Brussels, Lisbon, and Paris). The paper analyzes some accounting figures such as equity, net income, leverage, return on equity and return on assets. The results confirm that former Belgian, French, and Portugal GAAP were more conservative than IFRS. In some cases, for all the countries the IFRS numbers seem to be much less conservative.*

**Keywords:** transition to IFRS, Gray index of comparability, equity, net income, ROA /ROE, leverage

**JEL classification:** M41

### 1. INTRODUCTION

The attempts to compare financial information obtained by applying different rules to the same events and transactions are numerous. In this sense, various indexes were created that would measure the degree of comparability between data applicable to different referential standards. An important source of data to study financial information comparability consists in the multiple reporting<sup>1</sup> of companies listed on several stock exchanges<sup>2</sup> (Weetman & Gray, 1991; Krisement, 1997; Street *et al.*, 2000; Palacios Manzano *et al.*, 2007; Liu, 2009; Liu *et al.*, 2010); to all these, was added either information restated by financial analysts (Gray, 1980), or simulations of implementing some accounting rules (Weetman *et al.*, 1998). Another source for research regarding financial status information comparability was the compulsory implementation of IFRS in Europe, and other countries (such as Australia). The study of the comparability/harmonization in accounting may be also based on financial data collected either from companies, whether or not listed on some stock exchange, or by studying accounting regulations.

The calculations and conclusions derived from studies to-date must, nevertheless, be interpreted within the context of the economic, financial, legal, and historical background. Krisement (1997) established that the degree of information comparability was based on the

number of alternative accounting procedures available for collecting and processing accounting data, as well as on the number of entities that choose to make use of any of these alternatives.

The instruments to assess comparability and the difference between financial data obtained by either applying different accounting policies or through accounting harmonization are very diverse: ranging from Gray's conservatism index (Gray, 1980), to the H index, the I index and the C index<sup>3</sup> (Van der Taas, 1988), or the T index (Taplin, 2004), to an entropy or a heterogeneity index (Krisement, 1997).

The compulsory conversion to IFRS in Europe, beginning with the financial years past January 1<sup>st</sup> 2005, has represented a most important source for research regarding the classification and comparability of accounting systems, the accounting harmonization and for identifying the source of dissimilarities, having an impact on the accounting data published in financial statements. Sellhorn & Gornik-Tomaszewski (2006) duly noted that the embracing of the IFRS within the EU meant a deep change in terms of financial statements formatting, provided that within many EU countries, the technical differences between local regulations and the IFRS were numerous which has made the conversion costly in terms of both money and time. It was to be expected that the transition to IFRS would have a major impact on financial statements: Fitó *et al.* (2012) made a literature review and concluded that the impact was truly significant, even though the amplitude varied from country to country.

The advantages of transition to IFRS are reflected in the uniformity of financial statements, the reduction in the cost of capital, and the improvement in the quality of published information. The information on the transition is made available in notes published by reporting entities, in either the 2004 or the 2005 financial statements, or separately. The IFRS 1 makes mandatory such a presentation of information regarding the effects of the transition to IFRS over the assets, debt, equity, revenues and charges. Even though the conversion to IFRS was aiming at reaching an overall comparability of financial statements issued by European groups, the positive effects are accompanied by other, less than desirable effects. In Spain, Callao *et al.* (2007) observed, at the inception of IFRS implementation, that the local comparability of financial statements were worsening within the context in which some companies still apply IFRS, whereas some other companies do not.

Within the accounting systems classification regarding European countries, a distinction is often made between two large groups: the countries that observe the Anglo-Saxon model and the countries that enforce the continental model (Nobes, 2011). The general features of the two models may be conducive to placing, for instance, the UK and the IFRS within the same Anglo-Saxon model<sup>4</sup>. In the same line of thought, companies observing the continental model may have to expect an important dissimilitude between their own accounting regulations and the IFRS, differences that may be objectified in the mitigation of the degree of accounting conservatism following the transition to IFRS<sup>5</sup>. That expected decrease in accounting conservatism may also materialize itself in increases in IFRS net incomes and equity compared to former GAAP. Otherwise, Richard (in 2005), making a plea against the too extensive use of the fair values imposed by the IFRS, expresses the opinion that implementing these accounting regulations in Europe may open a path towards a true *principle of imprudence*.

The four countries whose companies are under scrutiny in this paper have in common the fact that their stock exchanges belong to the same group, and the fact that, with the

exception of the Netherlands, they fall within the continental accounting system: macro-economic orientation, governmental control over normalization, and a greater role of taxation (Nobes, 2011). Even though the implementation of IFRS in Europe has pursued accounting harmonization and the increase in financial statement comparability, Nobes (2011) found that the classification in two large groups (Anglo-Saxon versus continental), still remains valid from the viewpoint of accounting practices: the Netherlands is classified within the continental group, even though it is difficult to classify it within either of the two categories.

## 2. LITERATURE REVIEW

The degree of conservatism could be grasped, over time, by identifying the accounting treatment noted in the multitude of components of the structure of financial statements: the inventories evaluation, the depreciation of fixed assets, the impairment of assets, the capitalization of interests, the treatment of R&D expenses, and the use of fair value.

The first use of the conservatism index was made by Gray (in 1980), who compares the profits of some companies from the UK, France and Germany to the values adjusted according to criteria employed by a financial analysts organization, the EFFAS<sup>6</sup>. The results merely confirmed empirically that large German and French companies were significantly more prudent in their evaluation policies than the companies from the UK (the data processed by Gray- 1980- are related to the 1972 to 1975 financial years).

In 1980, Gray does not limit himself to establishing that companies from some countries are more prudent than others - he also seeks explanations, detailing the accounting methods used in each country in particular, as well as their specific economic, financial and fiscal background.

The same Gray reverts, a little later on, accompanied by another author (Weetman & Gray, 1991), this time establishing as reference the US GAAP, and analyzing the accounting data published by foreign companies listed on the American markets, and compelled to submit multiple financial reporting (national and US regulations and GAAP for the 1986, 1987 and 1988 financial years) - this time the companies monitored are UK, Sweden and Netherlands companies. In order to better grasp the effects in terms of conservatism of specific accounting policies, Weetman & Gray (1991) create some partial conservatism indexes<sup>7</sup>, according to the studied accounting methods (inventory evaluation, deferred taxation, goodwill amortization, extraordinary items, capitalization of interest, and the research/ development treatment). The conclusions of Weetman & Gray (1991) are that US GAAP seem to be more prudent than the British and Dutch ones in terms of impact over profits, but less prudent than the Swedish ones. In a more extended formula, the two authors come back (Weetman *et. al*, 1998) with an analysis of comparability between the UK GAAP on the one hand and US GAAP and IAS, on the other hand; here they use partial comparability indexes computed according to the same formula but applied to individual influences of divergence factors between rules – from these partial indices the total index is

achieved by aggregation as: 
$$\text{Total index} = \sum_{i=1}^n \text{adjustement}_i - (n-1)$$
. Authors warn of the

disadvantages created by applying this index in cases in which net income is zero or close to zero. The results reported by Weetman *et al.* (1998) suggest again that the reported net income under UK GAAP is higher than those compliant to US GAAP.

Another team to which Gray belongs (Street *et al.*, 2000) uses the comparability index<sup>8</sup> (already the term *conservatism index* is between quotation marks) to measure the differences between US GAAP and IAS (based on the reconciliations made by foreign companies that applied the IAS and were quoted in America) with regards to net income. They introduce a *total comparative index*, computed by aggregating some partial indices determined for each item to be reconciled between US GAAP and IAS. Street *et al.* (2001) find over all that the net income under IAS exceeds systematically and significantly the net income in compliance to US GAAP (the comparability index is supra-unitary), in the three analyzed years (1995, 1996, 1997); the partial indices are computed on 17 sources of differences between US GAAP and IAS.

Evraert & Trebucq (2002) analyze the accounting data published by some French companies listed in US, comparing the published values according to French GAAP with those complying to US GAAP, using Gray's conservatism index for the ratios of net income, equity and return on equity.

Balsari *et al.* (2009) analyze the difference between Turkish accounting rules and IFRS and do not see significant differences when the transition to IFRS is made, by applying Gray's comparability index on some key ratios and they explain this situation by the fact that Turkey uses an inflation accounting.

Gray *et al.* (2009) continue the series of studies that analyze the differences between US GAAP and the rules applied by European companies. This time, Europe is taken into consideration with two huge sets of accounting rules: for the period 2002-2004 national rules are in force, while for the rest of the period, Europe has a common set of rules – IFRS. The results reported by Gray *et al.* (2009) are fairly contrasting: for the pre-IFRS period, European equity is significantly lower than equity as seen by GAAP, over the entire studied sample. The net income over the time span 2004-2006 (according to IFRS-EU) is significantly greater than the same net income according to US GAAP. Anyhow, Gray *et al.* (2009) notice a clear-cut split between the UK GAAP financial statements and the financial statements of all the other countries under study.

Liu (2009) and Liu *et al.* (2010) analyze the comparability between US GAAP and IFRS and see that, despite a visible increase of the convergence between the two sets of rules, over the time span 2004 – 2006 and 2007, significant differences still remain between US GAAP and IFRS-EU.

A second direction in this literature review should deal with the IFRS impact over financial statements published by listed European entities. Studies are numerous and they undertake to analyze multifaceted aspects of transition. We retain here a few studies that research the impact that the transition to IFRS<sup>9</sup> has on accounting data. Aisbitt (2006) found that, for the FTSE 100 companies, variations in equity are in both directions (IFRS versus UK GAAP): 37 companies experience increases in equity, 55 companies experience decreases (the business industry is not a significant variable). Jermakowicz & Gornik-Tomaszewski (2006), analyzing the answers received from companies that passed to IFRS in 2005, and even before that time, notice that the expectations of respondents regarding this transition are in the sense of higher key ratios, such as equity and net income: the two authors do not find any significant correlation between the fact that the respondent companies belong to the continental accounting model (considered to be more cautious) and the increase of net income/equity.

Hung & Subramanyam (2007) study the transition to IFRS for German companies and find a confirmation of the orientation of German accounting to prudence and earning

smoothing: IFRS total assets, equity and net income exceed generally and significantly the same values calculated according to German standards. Tsalavoutas & Evans (2010), calculate that, for Greek companies, the transition to IFRS in 2005 has on average insignificant effects over equity (nevertheless, IFRS equities are larger than the ones calculated according to Greek standards, even if there are many extreme values one way and the other). As for the net income, Tsalavoutas & Evans (2010) find on average a significant increase in IFRS, compared to Greek regulations. Fifield *et al.* (2011) make an analysis of the transition to IFRS in the UK, Ireland and Italy, applying the Gray's comparability index; the conclusion is that, for the sample under study, the IFRS 2004 profit is in average higher than according to British, Irish and Italian regulations. As for the transition to IFRS in 2005 over equities, Fifield *et al.* (2011) find different situations in the three studied countries: if in the case of the UK and Italy equity gets higher, in the case of Ireland equity gets lower. As for Spain, Callao *et al.* (2007) notice significant differences between Spanish regulations and IFRS as for some important ratios: cash ratio, solvency, return on assets, return on equity, and net income. Also, in the case of Spain, but for the transition from 2007 to 2008, from the Spanish regulations to IFRS, in the case of some companies that did not have this obligation in 2005, Fitó *et al.* (2012) identify significant differences both for the balance sheet ratios and for operating ratios. Hellman (2011) apply Gray's comparability index to measure the difference between Swedish regulations and IFRS, for four relevant ratios: net income, equity, total assets and total liabilities<sup>10</sup>. Hellman's results (2011) found significant increases of profits as the transition to IFRS is made, and increases of the other ratios, at a smaller extent; the effect of applying IFRS in Sweden is a cohabitation of prudent traditional accounting with the model adapted to the financial market realities, rather than the substitution of the former with the latter. Clarkson *et al.* (2011) analyze the transition to IFRS for a sample of about 3,500 companies, and reach results that confirm the dichotomy existing between *common law* vs. *code law* accounting systems: the differences (BVPS and EPS) compared to IFRS of the companies classified as *common law* have a different profile than the ones ascertained in companies classified as *code law*. For countries under our study, the results of Clarkson *et al.* (2011) – Table 1 – confirm the stronger presence of prudence in countries characterized by *code law*: their equity increase at a rate of 3.6%.

Table no. 1 Increases/decreases of BVPS and EPS

Country	Number of observations	BVPS*		EPS**	
		Observations with increases	Observations with decreases	Observations with increases	Observations with decreases
Belgium	72	72,2%	27,8%	56,9%	43,1%
France	484	68,6%	31,4%	69,2%	25,4%
Netherlands	106	39,6%	60,4%	59,4%	27,4%
Portugal	32	50,0%	50,0%	75,0%	25,0%
...					
Total <i>code Law countries</i>	1.864	67,7%	32,2%	64,4%	29,6%
*BVPS: per share book value of common equity					
**EPS: earnings per share from continuing operations					

Source: [Clarkson *et al.*, 2011]

As for Belgium, Jermakowicz (2004) suggests his belief that the impact of applying the IFRS is significant on equity and the net income. In a different context, Haverals (2007) finds, further to a simulation, that the net income of Belgium companies would be higher if IFRS had been a reference set of rules in computing the profit tax.

France is considered one of the countries where accounting regulations were amongst the most divergent in relation to IFRS (Ding *et al.*, 2007), which makes Cormier *et al.* (2009) consider that the implementation of IFRS in France will lead to many changes in the practices specific to the traditional continental accounting model. Marchal *et al.* (2007) studies the impact of the transition to IFRS over the data published by 291 listed French non-financial groups and they find, over all, a limited decrease (2%) of equity, even if for 2/3 of the studied population equity increases; the net income rises considerably – in average by 38% (for 73% cases the net income rose); the leverage also rises in average by 16%. For the case of France, Demaria & Dufour (2007) conclude that options in accounting policies of companies that adopted IFRS were not guided by conservatism. Therefore, we may expect that IFRS data pertaining to net income and equity to be higher in IFRS than in the French regulations.

Aubert & Grudnitski (2011) analyze the effects of the transition to IFRS in Europe and they see a significant increase of return on assets in many European countries, the four countries studied here included. Therefore, Aubert & Grudnitski (2011) notice the most significant increase for the Netherlands, a lower one for Belgium, while for Portugal, the ascertained variances are not statistically relevant.

Ferreira Silva *et al.* (2009) find that IFRS implementation in Portugal has had a considerable impact on accounting information – all the important entries in the balance sheet and in the profit and loss account were impacted significantly. For Portugal also, Teixeira Lopez & Couto Viana (2008) apply Gray's comparability index and conclude that 70% of the listed companies that performed the transaction are in the neutral and pessimistic area according to Gray's index results, which means that the IFRS have led to accounting practices that were a little less prudent than the Portuguese standards. From the viewpoint of comparing the quality of the information supplied according to the Portuguese standards and to the IFRS, Morais & Curto (2008) detected a result quality increase in 35 Portuguese firms.

### 3. METHODOLOGY

The analysis that we intend to include in our paper refers to the IFRS impact on accounting figures, measured by applying *Gray's index of conservatism*. Gray (1980) proposes such an index in his attempt to find out whether some countries are more "prudent" than others as concerns accounting practices:

$$\begin{aligned} \text{Gray Index of Conservatism (Index of Comparability - IC)} &= \\ &= 1 - \frac{\text{New GAAP Numbers} - \text{Previous GAAP Numbers}}{|\text{New GAAP Numbers}|} \end{aligned} \quad \text{Formula 1}$$

Most studies that use this comparability index apply this type of formula. We also find authors that include figures pertaining to former standards in the denominator (Fifield, 2011; Hellman, 2011). Tsalavoutas & Evans (2010) bring about arguments in this sense. We agree with this latter variant of the formula, which includes the values pertaining to former standards in the denominator, as they make up the starting point of our analysis in which we

attempt to determine the distance between the IFRS and the former standards and not vice versa.. Thus, the calculations will be made according to the formula 2:

$$\text{Index of Comparability(IC)}=1-\frac{\text{Previous GAAP Numbers} - \text{IFRS Numbers}}{|\text{Previous GAAP Numbers}|} \quad \text{Formula 2}$$

Result interpretation will be done in the following manner:

- IC is 1 when the two sets of standards result in the same value;
- IC is higher than 1 when the IFRS values are higher than those pertaining to the former standards;
- IC is lower than 1 when the IFRS values are lower than those obtained by applying the former standards.

For result interpretation we resort to Gray (1980) again, who sets a conservatism degree scale applying to the various entities, depending on the index value<sup>11</sup>: below 0.95; between 0.95 and 1.05 and over 1.05. The interpretation may be done as follows:

- conservatism (pessimism – the IFRS more prudent than the former standards): for an index < 0.95, with three subdivisions, below 0.50; between 0.50 and 0.74; between 0.74 and 0.94;
- neutrality: for index values between 0.95 and 1.05; here Gray (1980) proposes 3 subdivisions: between 0.95 and 0.99; 1 and between 1.01 and 1.05;
- optimism (less conservatism – the IFRS less cautious than the former standards), for an index over 1.05, with the same number of subdivisions: between 1.06 and 1.25; between 1.25 and 1.50 and over 1.51.

This indicator used to measure the differences between the various accounting references has been discussed in many papers, in different contexts – various bigger or smaller samples, the compared standards are also very diverse. In all the cases, the data made public by the same company and for the same period are compared, and two different sets of accounting standards are actually applied or the data collected according to a frame of reference further to a simulation which relies on another frame of reference are reprocessed. Most of the times, the information is collected from the financial statements in which the figures are reconciled according to a set of accounting rules in order to pass to another one. In fact, with time, the indicator is referred to as a *comparative index* (Weetman *et al.*, 1991; Weetman *et al.*, 1998; Gray *et al.*, 2009; Liu, 2009).

In many studies, the comparability index is decomposed on difference sources among accounting standards, by calculating partial indices – our research does not propose such an approach, as we lack the data needed for it.

The advantage of this index is that it prevents any problems related to financial statements drafted in different currencies (Gray *et al.*, 2009) and with different approximation degrees.

Depending on the purpose of the research, the index may be slightly altered: for instance, in order to obtain the clearest possible information on the differences among accounting standards without compensating these differences in different senses, Liu (2009) uses an *absolute comparability index*, calculated by also including in the module the denominator of the fraction in the previous formula. Considering the data available in our study, the new formula may be written in the following manner:

$$\text{ACI} = \text{Absolute comparability index} = 1 - \frac{|\text{Previous GAAP numbers} - \text{IFRS number}|}{|\text{Previous GAAP number}|}$$

This formula may be interpreted as follows: the less different the figures resulting from the two sets of accounting standards, the closer to 1 the absolute comparability index (ACI).

#### 4. SAMPLE

As we lacked a financial database (the institution we belong to does not have such a resource), we chose to manually collect the data from the financial statements of the listed companies. Unfortunately, we failed to do that immediately after Europe's transition to IFRS. We did it later (in 2011). The ideal would have been to collect data concerning all the few thousands (over 7,000) of listed groups which were believed to have the obligation to implement the IFRS (Jermakowicz & Gornik-Tomaszewski, 2006). At this data collection stage, we only analyzed the groups listed on the Paris, Brussels, Amsterdam and Lisbon Stock Exchanges, included, in 2011, in the NYSE Euronext Group. Considering the four financial markets, we tried to compare the comparative data of the first IFRS financial year with the data provided by the former standards of the previous financial year. For consistency reasons, we considered that the French, Belgian, Dutch and Portuguese standards were the former ones. The file we found on the Euronext site ([https://europeanequities.nyx.com/en/resource-library/monthly-statistics?archive=6\\_years\\_ago\\_and\\_before](https://europeanequities.nyx.com/en/resource-library/monthly-statistics?archive=6_years_ago_and_before), accessed on 15 July 2011) provides the list of entities coming from the 4 countries (listed at the end of November 2005), which includes 1,034 companies. Considering that some group names appeared twice or several times (most likely because they have two or more types of titles listed), we took out 53 entries (which leaves us with 981). Then, we attempted to identify the financial statements for 2004 and 2005 of the remaining companies. Thus, my search for information on the companies listed on Euronext in November 2005, which seemed to have made available their financial statements for the first IFRS financial year (generally 2005 or the first financial year starting after 1 January 2005) and for the previous one, materialized in the data in Table 2. The remaining sample, which included 593 entities<sup>12</sup>, makes up 60.5% of the firms listed in November 2005.

Table nr. 1 Number of companies in the sample, by country

Country	Total number of observations	Observations with incomplete data	Remaining observations	Percentage of the remaining observations
0	1	2 = 1 - 3	3	4
Belgium	136	69	67	49.26%
France	635	232	403	63.46%
Netherlands	160	76	84	55.50%
Portugal	50	11	39	78.00%
<b>Total</b>	<b>981</b>	<b>388</b>	<b>593</b>	<b>60.45%</b>
* Missing data is explained by: listing after 2005, missing of a useful internet site at the date of data collection, closure of the company after 2005, non-application of IFRS after 2005 (8 companies), adoption of the IFRS before 2005 (26 companies)				

The information was gathered manually<sup>13</sup> from the first IFRS financial statements and from the ones immediately preceding. We were interested in data such as: closing date, the



auditor (*big four* or *non big four*), total assets, equity (including equity interests), revenues, operating income, net income, (as it is in the profit and loss account) – equity, operating cash flows and total cash flows. The data have been selected for the financial year immediately preceding the one applying for the first time of the IFRS (which we generically call 2004). The comparison refers to the exact same information published in the format and by the accounting rules before the IFRS (the column referring to the current financial year 2004) and the one comparatively presented in 2005. So we have the old 2004 and the IFRS 2004. Putting face to face the two rows of figures will allow us to estimate the IFRS impact on the equity and on the results of the groups listed in Europe. In order to avoid, as much as possible, manual data gathering errors, we checked, where available, both the 2004 financial statements (the column for 2004) and the 2005 financial statements (the column for 2004), and the note in which the listed groups reported the reconciliation specific to the first time application of the IFRS, by publishing tables with the transition from the old figures to the ones of the IFRS.

We have not separated the companies according to sectors of activity, although this type of analyses (at least on *financial* vs. *non financial*) can be relevant.

In such cases, we shall only have available, as comparative numbers for 2004, the equity and/or the net income: for these companies (10 of them in the samples of 593), we were not able to calculate the indicators that have to the denominator the total assets (leverage ratio or return on assets).

Of the 593 companies of the sample, 503 (85%) have the closing date on December 31<sup>st</sup>, the other ones issuing financial statements on various dates – the majority close on March 31<sup>st</sup>. We have not excluded from the sample these companies<sup>14</sup>, because the average and the median in the calculations made are not changed significantly.

The number of the companies for which we did not find data or for which we did not take into consideration the data – 388 of 981 (39.55%), for the reasons indicated in Table 1.

Many previous studies compute and interpret the IC on more financial years<sup>15</sup>, which presents the advantage of avoiding the effects of the evolution of accounting standards. In this paper, there are to be compared the figures from one sole financial year for all the companies of the sample – the transition to the IFRS was made only one time for all the European listed companies from my sample. So we will come down to the analysis of only one financial year: 2004 or the financial year begun in 2004 and closed in 2005. Also, in some previous studies, the samples were usually smaller, which guaranteed certain homogeneity of the conclusions, even if there could have appeared problems related to the generalization of the results.

The number of the ratios used for comparisons vary: many times only the net income or various components of it are caught, but equity (Palacios Monzano *et al.*, 2007) or the return on capital (Evraert & Trebucq, 2002) can also be added. Balsari *et al.* (2009) apply the formula of the comparability index to 7 indicators: equity, return, current ratio, acid-test ratio, leverage ratio (long term debts / equity), return on capital and return on assets. Tsalavoutas & Evans (2010) mention 4 indicators: equity, net return, leverage ratio and liquidity. Below, we will focus on the result, the equity, the leverage ratio, the net income, the return on capital and the return on assets.

## 5. IMPACT ON EQUITY

All the studies which envisage the impact of changing the accounting standards take into consideration the effects on equity. The calculations refer either to their absolute size, or to the indicators set on them (equity per share, return on capital).

In the sample used in this study, if we analyze the number of the companies depending on the level of the comparability index (Table 3), on the three ranges proposed by Gray (1980), then, in total, we find that the majority of the companies are situated in the range of neutrality 0.95 – 1.05. At an individual level, only Belgium does not fit in this positioning, as it has the majority of the companies situated over 1.05, meaning the IFRS equity significantly exceeds the one compliant with Belgian standards. However, the companies having an index exceeding 1.05 outnumber the ones with an index under 0.95, except for the Netherlands. The results do not seem spectacular and it is worthwhile completing them with company identification data in keeping with their position to the 1.00 index (the last three rows in table 3). This time, we identify two types of countries: on the one hand, Belgium and France, with more companies with higher equity when expressed in IFRS and, on the other hand, the Netherlands and Portugal where most companies have lower equity when applying IFRS. The differences between the number of companies for which the index is sub-unitary to the ones the index is greater than 1 are not very big, which can suggest the existence of some differences in the individual accounting policies, too, rather than accounting national differences (Aisbitt, 2006).

Table no. 2 Number of companies by intervals of the comparability index (CI) – equity

	<b>Belgium</b>	<b>France</b>	<b>Netherlands</b>	<b>Portugal</b>	<b>Total</b>
CI to 0.95 (IFRS < former GAAP)	13	80	34	13	<b>140</b>
CI between 0.95 and 1.05 (relative neutrality)	24	188	38	13	<b>263</b>
CI over 1.05 (IFRS > former GAAP)	30	135	12	13	<b>190</b>
<b>Total</b>	<b>67</b>	<b>403</b>	<b>84</b>	<b>39</b>	<b>593</b>
CI < 1.00	21	158	51	21	<b>251</b>
CI = 1.00	2	2	6	-	<b>10</b>
CI > 1.00	44	243	27	18	<b>332</b>

Taking into account the number of companies only can be irrelevant sometimes, as their sizes may vary largely. Even if the simple arithmetical average may conceal extremes and does not take into account the individual sizes of companies, it is relevant from the standpoint of the IFRS impact analysis. In order to remove to some extent the effect of extreme situations, besides the mean that takes into account all the entities per country and at a global level, the average resulting after eliminating some outliers is presented as well. For the latter calculations, we resorted to the mechanism used by Gray *et al.* (2009): the interquartiles 1 and 3 (q1 and q3) were calculated, the interquartile range was determined (IQR= q3 - q1) and all observations exceeding the interval were removed [q1 – 1.5xIQR; q3+1.5xIQR]. The results from table 4 – having considered the global average – suggest us that the application of IFRS led to the significant increase of equity (the average ratio exceeds 1.05), except for the Netherlands where a decrease occurs, that is nonetheless

irrelevant. France is the country where differences seem to be the greatest, the next being Belgium. After eliminating the outliers, naturally, differences fade away and the mean on the overall sample suggests an insignificant increase (ratio under 1.05); it is interesting to notice that without outliers the means for the two countries are subunitary, that is the transition to IFRS led to the decrease of the equity. The only country for which the mean of ratios is significant considering the ranges as determined by Gray (1980) is Belgium (the mean ratio exceeds 1.05), for the rest, they are all located in areas of neutrality.

*Table no. 3 Averages of comparability indexes by country, at the transition to IFRS – equity*

	<i>Belgium</i>	<i>France</i>	<i>Netherlands</i>	<i>Portugal</i>	<i>Total</i>
Average of all comparability indexes	1.0992 n=67	1.1438 n=403	0.9855 n=84	1.0798 n=39	1.1121 n=593
Average of indexes, after the elimination of the outliers	1.0804 n=60	1.0164 n=341	0.9625 n=68	0.9675 n=34	1.0101 n=509

## 6. INDEXES OF COMPARABILITY FOR LEVERAGE RATIO

An indicator widely used in the analysis of the situation of listed companies is the leverage ratio, with the formula total debt-to-total assets. In table 5, we see that for most companies in the sample, the comparability ratio computed for the leverage ratio is within the neutral range (0.95 – 1.05), with a certain bias to values higher than 1.00.

*Table no. 4 Number of companies by intervals of the comparability index (CI) – leverage*

	<i>Belgium</i>	<i>France</i>	<i>Netherlands</i>	<i>Portugal</i>	<i>Total</i>
CI to 0.95 (IFRS < former GAAP)	18	46	4	7	75
CI between 0.95 and 1.05 (relative neutrality)	29	266	49	24	368
CI over 1.05 (IFRS > former GAAP)	13	72	31	6	122
<b>Total</b>	<b>60</b>	<b>384</b>	<b>84</b>	<b>37</b>	<b>565</b>
CI < 1.00	34	185	17	15	251
CI = 1.00	-	2	4	-	6
CI > 1.00	26	197	63	22	308

The mean of the comparability indices (table 6) is within or close to the neutral range – the only exception is the Netherlands with a significant increase of the leverage ratio, but only after eliminating the outliers.

*Table no. 5 Averages of comparability indexes by country, at the transition to IFRS – leverage*

	<i>Belgium</i>	<i>France</i>	<i>Netherlands</i>	<i>Portugal</i>	<i>Total</i>
Average of all comparability indexes	1.0021 n=60	1.0169 n=384	1.0595 N=84	1.0193 n=37	1.0219 n=565
Average of indexes, after the elimination of the outliers	0.9837 n=51	1.0043 n=329	1.0367 N=79	1.0006 n=33	1.0040 n=485

## 7. IMPACT ON INCOME

The analysis of company performances often takes into consideration the net income as difference between total revenues and total expenses, or the overall account results. In this study, the net income is presented, as it is yielded by the profit and loss account, as seen in other previous studies. However, Goncharov & Hodgson (2011) reach the conclusion that the net income prevails over the topline as relevant information for investors' decision-making when they want to get informed, to assess and to forecast the future of the listed companies.

The comparability index on the net income (before taking out equity interests) suggests that for most companies under study, there is a significant increase (the index surpasses 1.05), which is true for all countries and for each country individually (Table 7). The results are even more significant when giving up the neutral range and the index of 1.00 is determined as a reference.

*Table no. 6 Number of companies by intervals of the comparability index (CI) - net income*

	<i>Belgium</i>	<i>France</i>	<i>Netherlands</i>	<i>Portugal</i>	<b>Total</b>
CI to 0.95 (IFRS < former GAAP)	16	63	12	9	100
CI between 0.95 and 1.05 (relative neutrality)	11	93	29	6	139
CI over 1.05 (IFRS > former GAAP)	40	246	43	24	353
<b>Total</b>	<b>67</b>	<b>402</b>	<b>84</b>	<b>39</b>	<b>592</b>
CI < 1.00	23	104	24	10	161
CI = 1.00	-	3	6	-	9
CI > 1.00	44	295	54	29	422

The large number of companies for which IFRS increased the net income is confirmed by the mean of comparability indices. Both before and after eliminating the outliers, the mean of the indices exceeds the threshold of 1.05 (except for the mean computed for Netherlands after eliminating the outliers). A hierarchy of countries, after eliminating the outliers, places Portugal on the first place, with the most significant change of net income, followed by Belgium and France. We see that these three countries are part of what is called the continental accounting system, recognized as being the farthest related to Anglo-Saxon regulations and to IFRS, as a matter of fact.

*Table no. 7 Averages of comparability indexes by country, at the transition to IFRS – net income*

	<i>Belgium</i>	<i>France</i>	<i>Netherlands</i>	<i>Portugal</i>	<i>Total</i>
Average of all comparability indexes	1.2970 n=67	1.6175 n=402	1.4398 n=84	1.6814 n=39	1.5602 n=592
Average of indexes, after the elimination of the outliers	1.1565 n=60	1.1223 n=330	1.0549 n=76	1.1735 n=34	1.1221 n=496

The net income growths generated by passing to IFRS are the more significant as IFRS are considered high-quality regulations and it is expected that their application leads to a

better quality of the published data. However, in case of France, Zéghal *et. al* (2011) notice a decrease in the management of the net income level.

## 8. THE IMPACT OF THE TRANSITION TO IFRS ON SOME RETURN RATIO

Highlighting the changes of individual values such as equity, net income, revenues, total assets when IFRS is adopted should be completed with the analysis of some mixed factors. The leverage ratio is presented above. To better highlight the change of the performance indices, two values are relevant in this analysis: return on equity and return on assets. The number of companies for which we had data differs slightly because for some entities I did not find information on total assets.

In case of both returns, the differences between the average of all ratios and the computed average after eliminating outliers are very important. Even if the number of companies considered extreme cases is not that big, we have to take into account that there were entities in all countries that applied accounting methods or were involved in business of so many different types, that transition to IFRS completely changed the configuration of financial statements.

### 8.1. IMPACT ON ROE

We found above that the change of equity when passing to IFRS was not spectacular, yet for the net income there were significant deviations of the two sets of accounting regulations. Therefore, we may expect that the relation between net income and equity to vary greatly.

Table no. 8 Number of companies by intervals of the comparability index (CI) – ROE

	<i>Belgium</i>	<i>France</i>	<i>Netherlands</i>	<i>Portugal</i>	<i>Total</i>
CI to 0.95 (IFRS < former GAAP)	24	84	11	10	129
CI between 0.95 and 1.05 (relative neutrality)	6	83	22	6	117
CI over 1.05 (IFRS > former GAAP)	37	235	51	23	346
<b>Total</b>	<b>67</b>	<b>402</b>	<b>84</b>	<b>39</b>	<b>592</b>
CI < 1.00	26	121	19	14	180
CI = 1.00	-	1	4	-	5
CI > 1.00	41	280	61	25	407

The data in Tables 9 and 10 confirm the significant increase of the return on equity reported by entities that apply IFRS compared to the calculations done according to the former GAAP. All numbers suggest significant increases for the sample as a whole and for every country considered individually, before and after eliminating the outliers. The conclusion is valued both for the mean of the comparability index and for the number of companies where higher returns on capital are recorded.

Table no. 9 Averages of comparability indexes by country, at the transition to IFRS - ROE

	<b>Belgium</b>	<b>France</b>	<b>Netherlands</b>	<b>Portugal</b>	<b>Total</b>
Average of all comparability indexes	1.1904 n=67	1.5365 n=402	1.4176 n=84	1.8166 n=39	1.4989 n=592
Average of indexes, after the elimination of the outliers	1.0787 n=61	1.1330 n=330	1.1275 n=73	1.1880 n=34	1.1274 n=491

The net income of the financial year for which comparative information is published rose once the transition to IFRS was performed, at a larger extent than the equity. It is interesting to highlight here the evolution of the comprehensive income.

## 8.2. IMPACT ON ROA

To take into account, at a certain extent, the variation of total assets generated by the transition to IFRS, we calculated comparability indices also for the return on assets.

Table no. 10 Number of companies by intervals of the comparability index (CI) – ROA

	<b>Belgium</b>	<b>France</b>	<b>Netherlands</b>	<b>Portugal</b>	<b>Total</b>
CI to 0.95 (IFRS < former GAAP)	15	78	20	9	122
CI between 0.95 and 1.05 (relative neutrality)	7	98	23	6	134
CI over 1.05 (IFRS > former GAAP)	38	211	41	22	312
<b>Total</b>	<b>60</b>	<b>387</b>	<b>84</b>	<b>37</b>	<b>568</b>
CI < 1.00	19	117	30	12	178
CI = 1.00	-	1	3	-	4
CI > 1.00	41	269	51	25	386

The conclusion reached on return on capital can also be extended to the return on assets, although the numbers are smaller. All averages fit in the range qualifying a significant increase of the return on assets, except for the Netherlands– after eliminating outliers.

Table no. 11 Averages of comparability indexes by country, at the transition to IFRS – ROA

	<b>Belgium</b>	<b>France</b>	<b>Netherlands</b>	<b>Portugal</b>	<b>Total</b>
Average of all comparability indexes	1.1604 n=67	1.5227 n=402	1.3683 n=84	1.2332 n=39	1.4427 n=592
Average of indexes, after the elimination of the outliers	1.1903 n=54	1.1024 n=314	1.0357 n=69	1.1886 n=33	1.0939 n=478

Thus, in this case also, we note an average increase of the result greater than the increase of the total assets.

## 9. CONCLUSIONS, LIMITS AND FUTURE RESEARCH

The compulsory transition to the IFRS of the listed European companies – event performed in the financial year of 2005 and, for certain entities, in 2007 – represented a unique moment for the accounting practice and a very important source of information for the accounting research. Among the many topics that generate discussions in this regard, we try - like many other authors - to assess the impact of IFRS, comparing figures published by some groups involved in this process before and after the transition to the IFRS. We gathered the data from the end of the last financial year before 2005 and the same data published comparatively on the column reserved to the immediately previous financial year from the first complete IFRS financial statements. We analyzed a sample of 593 listed companies, on 31.12.2005, on the Euronext (Amsterdam, Brussels, Lisbon and Paris).

The instrument we used to assess the comparability is Gray's index of comparability, originally called also Gray's index of conservatism. It represents a very used mechanism in estimating the comparability of accounting data in very various contexts. The indicators for which we calculated and interpreted the index were chosen from the items already compared for other series of data by authors who had also previously used Gray's index: equity, leverage ratio, net income, return on capital and return on assets.

Results confirm the previous characterizations of the Dutch, Belgian, French and Portuguese accounting systems: except for the Netherlands, we expect the conservatism degree detected based on the figures related to the national standards to be greater than the one identified based on the IFRS data. So:

- for the equity, both before and after eliminating the outliers, the IFRS numbers are a little bit greater than the ones in the former GAAP, except for the Netherlands;
- for the net income, in all cases, the transition to IFRS determined its significant increase, on an average;
- the leverage ratio changes very little, both before and after eliminating the outliers;
- the modifications of the returns (on capital and on assets) confirm the conclusions we arrived at after analyzing the result: a significant increase generated by transition to the IFRS and for the comparative financial year published on the occasion of this transition.

The limits of the study are related to the insufficient statistical processing of data – testing of the importance of the figures we reached – to the sample from which we removed many entities for the reason of impossibility of accessing data. Also, the overall analysis of the IFRS impact on return and on equity can lead to the compensation of some significant individual effects. We have not taken into account the impact of the various individual standards, which could influence the conclusions; furthermore, Aisbitt (2006) finds that, even if the effects of transition to IFRS in the case of the companies from the FTSE 100 were, globally, limited, the changes on individual balance elements and CPP were significant. Another limitation is related to ignoring the sector of activity or the size of the companies subject to the transition – actually, this is a good opportunity to continue the research.

An important direction of analysis, which has been treated in some works, is given by the identification of the causes which have led to the differences between older standards and the IFRS. We have not had at our disposal the full data necessary to conduct such research.

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## Notes

<sup>1</sup> Van der Taas (1988) states that multiple reporting means that a company reports additional information based on accounting rules different from its primary accounting methods. Krisement (1997) reformulate this definition: multiple reporting occurs in the case of a company listed on a foreign market whereby the obligation arises to report supplementary information according to the accounting standards required by this market.

<sup>2</sup> Most of these studies relate to foreign companies listed on the US financial markets and required to submit reconciliation between domestic standards and US GAAP.

<sup>3</sup> Some of these indexes were developed and have resulted in different versions: van der Taas C index was extended by Archer *et al.* (1995) to WCC (within-country C) and BCC (between-country C). Pierce & Weetman (2002) believe that BCC is a better index because it is more stable as the number of countries involved increases.

<sup>4</sup> Results reported by Aisbitt (2006) make us more prudent in assessing such a conclusion. Moreover, Alexander & Archer (2000) found that there are many differences between the US and the UK accounting and it is not really justified to put them in the same group of countries.

<sup>5</sup> For example, Demaria & Dufour (2007) believes that the financial statements of the companies belonging to the European continental accounting model report more conservative results than those established by the rules belonging to the Anglo-Saxon model.

<sup>6</sup> European Federation of Financial Analysts Societies.

<sup>7</sup> We could find a similar approach, detailing the differences by sources of influence, in Palacio Manzano *et al.* (2007).

<sup>8</sup> Street *et al.* (2000) found that this comparability index measures the impact of accounting differences and distinguishes it from indices H, I and C's van der Tas, the latter not highlighting the impact of accounting differences on accounting income. However, in the literature, the comparability index is sometimes calculated by using a different formula (Archer *et al.*, 1995).

<sup>9</sup> There are many papers on the impact of the transition to IFRS, other than the quantitative impact.

<sup>10</sup> Unlike other studies, Hellman (2011) used as reference (the denominator) accounting numbers complying with Swedish regulations. It is also the only one which has total assets in the calculation, arguing that IFRS could lead to their modification by recognizing certain elements that hitherto were off balance. Meanwhile, Hellman (2011) explicitly recognizes that comparing equity calculated in different regulation, we could measure the differences in conservatism between the two standards.

<sup>11</sup> In this paper, I shall use this three step scale (without the sub-categories) – pessimistic, neutral, optimistic. Later, Gray (Weetman & Gray, 1991) modifies the scale by using five categories: up to 0.90; from 0.90 to 0.95; from 0.95 to 1.05; from 1.05 to 1.10 and above 1.10. For both Weetman & Gray (1991), and Weetman *et al.* (1998) use a degree of materiality of 5% or 10% to pass to an interval to another (as Tsalavoutas & Evans, 2010).

<sup>12</sup> Having access to a financial database, Aubert & Grudnitski (2011) analyze 4,700 European companies, of which 110, 626, 108 and 37 (total 881) from the countries I study in this paper (Belgium, France, the Netherlands and, Portugal).

<sup>13</sup> Manual data collection can lead to errors, but we had no alternative. There are other papers with manual data collection: Aisbitt (2006) - for companies listed on the London - Gray *et al.* (2009) - for 134 European listed companies in the U.S. - and Tsalavoutas & Evans (2010) - for 238 Greek companies.

<sup>14</sup> Aisbitt (2006) notes that various closing dates may affect the comparability of the information, because firms do not necessarily apply the same version of accounting standards.

<sup>15</sup> Gray (1980): 288 firm-year observations (about 72 each year - 1972, 1973, 1974, 1975); Weetman & Gray (1991): about 118 firm-year observations (about 40 each year - 1986, 1987, 1988); Weetman *et al.* (1998): 45 firms for two years (1994 and 1998); Street *et al.* (2000): firm-year observations (about 31 each year - 1995, 1996, 1997); Palacios Manzano *et al.* (2007): 314 firm-year observations (about 63 each year - 1997, 1998, 1999, 2000, 2001); Liu (2009): 90 firm-year observations - 2004, 2005, 2006; Gray *et al.* (2009): 134 firm-year observations from 16 European countries, listed on US stock exchanges - 2002-2006; Balsari *et al.* (2009): 207 firm-year observations for the transition year (2004/2005); Liu *et al.* (2010): 50 firm for one year (2006); Tsalavoutas & Evans (2010): 238 Greek companies, for the year of the transitions (2004); Fifield *et al.* (2011): 211 companies from three countries, for the comparative year of the transition (2004); Hellman (2011) analyzes the transition to IFRS (2004) for 132 Swedish firms.

