

IJBESAR

**International Journal of  
Business and Economic  
Sciences Applied Research**  
**8(1): 25-50**

<http://ijbesar.teiemt.gr>



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**The Interrelation among Faithful Representation (Reliability), Corruption  
and IFRS Adoption: An Empirical Investigation**

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**Abstract**

**Purpose** – *The degree of corruption, among other things, indicates the non-implementation of laws, weak enforcement of legal sanctions and the existence of non-transparent economic transactions. Therefore, the expected change in reliability (faithful-representation) resulting from the adoption of IAS/IFRS, does not depend solely on the adoption of IAS/IFRS but is also influenced by the degree of corruption in each country. The purpose of this paper is to examine whether the above statement is true.*

**Design/methodology/approach** – *The data were taken from DataStream database and the sample period consists of listed companies of fifteen European countries that adopted IAS/IFRS mandatorily. The time horizon is 10 years, from 2000 until 2009. The period between 2000 and 2004 is defined as the period before the adoption, while the period between 2005 and 2009 is defined as the period after the adoption. The reliability/faithful representation of financial statements -as defined by the Conceptual Framework- is detected through regression analysis.*

**Findings** – *The findings advocate that the adoption of IFRS/IAS seems to be not enough. It appears that the level of reliability of financial statements in every country does not depend solely on the adoption of IAS/IFRS but is also influenced by the degree of corruption in each country.*

**Research limitations/implications** – *The models that are used for the measurement of reliability have as an independent variable the short-term accruals. Given that, the models fail to take into consideration accounting treatments that concern non-current assets/liabilities.*

**Originality/value** – *The findings that are identified for counties with a high degree of corruption indicate a statistically significant reduction in reliability after the*

*adoption of IAS/IFRS. These findings constitute a useful tool for the IASB and the European Commission as well as for the users of financial statements.*

**Keywords:** IAS/IFRS Adoption, Faithful representation/reliability, Corruption, Conceptual framework

**JEL Classification:** M41, M48

## 1. Introduction

Following the decision taken in March 2002, the European Parliament decided to adopt the International Accounting Standards (IAS). Specifically, since 2005 all listed companies are required to prepare and present the consolidated financial statements in accordance with the International Financial Reporting Standards (IFRS). The decision regarding the implementation of the IFRS constitutes a significant and unprecedented change concerning the way financial statements are prepared and presented.

The ultimate purpose of the Committee of the International Accounting Standards Board (IASB) is to create high quality standards in order to produce financial statements of the highest quality. To achieve this objective, the IASB establishes those standards that lead to the increase of the degree of relevance, faithful representation, comparability, timeliness, verifiability and understandability in financial statements. The IASB stresses that the financial statements must reflect the specific characteristics, as defined by the

Conceptual Framework, so that the information provided is most useful.

As already mentioned, the IASB creates the standards as well as the Conceptual Framework, while essentially aiming to produce higher quality financial statements. The critical question that arises is whether this goal has been achieved; that is, whether the financial statements following the IAS/IFRS adoption are in fact, of higher quality. This question is directly related to the purpose of this paper. Specifically, this article investigates whether the adoption of IAS/IFRS is enough. Given that the degree of corruption indicates the non-implementation of laws, weak enforcement of legal sanctions and the existence of non-transparent economic transactions, it can be inferred that the expected change in quality resulting from the adoption of IAS/IFRS, does not depend solely on the adoption of IAS/IFRS but is also influenced by the degree of corruption in each country.

Based on the existing literature the quality is measured by different methods or, a combination of them, such as, by calculating discretionary accruals (Healy, 1985; Jones, 1991;

Dechow and Sloan, 1991; Dechow, Sloan, and Sweeney, 1995; Tsipouridou and Spathis, 2012), conservatism (Anwer, Neel and Wang, 2010; Ball, Kothari and Robin, 2000; Ball and Shivakumar 2005; Barth, Landsman and Lang, 2008; Chen et al., 2010), persistence of earnings (Bandyopadhyay et al., 2010; Kirschenheiter, 1997; Richardson et al., 2005) etc. An important characteristic and a significant contribution of this research is the fact that the quality measurement methodology used, examines the quality of financial statements, as defined by the Conceptual Framework. In contrast, the above measures of quality in some cases are not in line with the definition given by Conceptual Framework. A typical example that highlights this conflict is the measure of reliability. Literature supports that the degree of reliability is measured by the ability of current earnings to predict future earnings (Bandyopadhyay et al., 2010; Kirschenheiter, 1997; Richardson et al., 2005). The problem arising through this way of measurement is that, it contradicts with the definition of reliability/faithful representation as defined by the Conceptual Framework. This conflict can be readily understood through the following example. Suppose a company makes use of fair value through the valuation method, which essentially introduces variability in

the results by reducing their predictability. Given that the fair value is reflected without error, presenting faithfully the economic reality, the level of faithful representation based on the definition derived from the Conceptual Framework is very high, whereas based on the measure of predictability is very low (Riedl, 2010). Another element that highlights the conflict between existing methods of measuring quality and the degree of quality, as defined by the Conceptual Framework, relates to the measure of conservatism. The high degree of conservatism in the literature is presented as an indication of high quality financial statements (Anwer, Neel and Wang, 2010; Ball, Kothari and Robin, 2000; Ball and Shivakumar 2005; Barth, Landsman and Lang, 2008; Chen et al., 2010). In contrast, this feature is not considered desirable by the new Conceptual Framework - since it conflicts with the feature of neutrality - and therefore, not included in it.

The sample of this research consists of listed companies of fifteen European countries that have adopted IAS/IFRS mandatorily. Specifically, four different samples are created; a) the aggregate sample that includes all the countries b) the sample that consists of countries with low corruption, c) the sample that consists of countries with moderate corruption and d) the sample that

consists of countries with high corruption (Appendix 2).

The time horizon is 10 years, from 2000 until 2009. Specifically, the period between 2000 and 2004 is defined as the period prior the adoption, while the period between 2005 and 2009 is defined as the post adoption period.

The findings for the aggregate sample suggest a marginal increase in the reliability of the financial statements but, without being statistically significant. This shows that the level of reliability for the aggregate sample after the adoption seems to be unaltered. Moreover, in countries where the degree of corruption is low, the degree of reliability is higher, but still, this increase is not statistically significant. Additionally, the degree of reliability for countries with a moderate degree of corruption seems to be unchanged, as well. Finally and more importantly, the findings that are identified for countries with a high level of corruption indicate a statistically significant reduction in the degree of reliability. These findings advocate that the adoption of IFRS/IAS seems to be not enough. It appears that the level of reliability of financial statements in every country does not depend solely on the adoption of IAS/IFRS but is also influenced by the degree of corruption of each country.

The research findings constitute a useful tool for the IASB and the

European Commission as well as for users of financial statements. On the one hand, the IASB and the European Commission will be able to know the degree of achievement of the objectives set initially and to take the necessary actions/improvements wherever is deemed appropriate. Furthermore, the wide range of the sample comprising of 15 countries that are examined in this research enables one to identify potential problems with the application of IAS/IFRS in specific countries (e.g. in countries where low levels of law enforcement are noticed) and to take the necessary measures. On the other hand, users are more equipped to make favorable decisions for their part.

## **2. Conceptual Framework**

The conceptual framework of IAS/IFRS essentially defines the general principles which should characterize the process of preparing and presenting financial statements. In no case does it have the power of a standard since the basic purpose of its creation is to help and guide the IASB to develop or review existing and future IAS/IFRS. Furthermore, it directs those preparing the financial statements to correctly apply the standards and is an additional tool for handling accounting issues not covered by existing standards. At this stage it should be noted that if an existing standard conflicts with the conceptual framework, then the

standard shall prevail. Finally, it helps auditors and users to understand whether the financial statements and the information provided is consistent with IAS/IFRS.

The qualitative characteristics are divided into fundamental and enhancing. The fundamental features are designed to separate the information provided to users in the following parts: useful information or non-useful and/or misleading information. The two fundamental characteristics include relevance and faithful representation (KPMG, 2010). The conceptual framework highlights (paragraph 17) that in order for the information to be useful, it must be characterized by both of the aforementioned characteristics, i.e. relevance and faithful representation.

In addition, the IASB defines also four enhancing qualitative characteristics considered complementary to the fundamental characteristics. The main difference with the fundamental characteristics is that if the financial information is not characterized by the fundamental characteristics, then the enhancing characteristics alone cannot generate useful information to users. Specifically, the enhancing characteristics are comparability, timeliness, understandability and verifiability.

### **3. Literature Review**

#### **3.1 Reliability / Faithfull representation and Adoption of IAS/IFRS**

Although IAS/IFRS gives equal emphasis between the feature of relevance and reliability through their conceptual framework, the same does not apply as far as the literature is concerned. On one side, a significant proportion of literature has dealt extensively with the characteristic of relevance and how this is reflected in the financial statements. In antithesis, the emphasis of the characteristic of reliability is very limited (Richardson et al., 2005).

The vast majority of the literature deals with the characteristic of reliability of accruals identified by finding the discretionary (DA) and non-discretionary accruals (NDA). Several researchers have created models for measuring the degree of reliability using this methodology (Healy, 1985; De Angelo, 1986; Jones, 1991; Dechow and Sloan, 1991; Dechow et al., 1995), which are then used as tools for further research. Moreover, the concept of reliability of accruals has been identified with the concept of quality of accruals directly related to the literature that deals with the quality of earnings.

Escaping from the basic idea of the above researchers, which is to identify the DA and NDA, recently some researchers identify the quality of accruals and earnings by

measuring the amount of error that arises from the relation between accruals and cash flows (Dechow and Dichev, 2002; McNichols, 2002).

In 2007, White, diverging significantly from the methodology of Dechow and Dichev (2002) and McNichols (2002), creates a new model that examines the extent to which the accruals at time  $t$  are converted into cash flow in year  $t + 1$ . In comparison to the previous models, important differences lie in that the calculation of accruals is not based on their changes, but on the closing balances of the accounts. Moreover, the model does not have as an independent variable the overall operating cash flows, which acts as the cause for the introduction of error.

Beyond the research dealing with the reliability of accruals, only a very small part of the literature deals with the reliability of specific accounting items or financial statements as a whole. Cotter and Richardson (2002), in order to identify the reliability of Asset Revaluations, compare the valuation of intangible assets arising from independent appraisers, with estimates arising from the board of the company. The findings indicated that the valuations of plant and equipment that have been made by independent appraisers are more reliable. For other non-current assets, no difference in the degree of reliability of valuations has been detected. The authors detect the

degree of reliability by examining the write-downs of an upward revaluation that took place in the past. They claim that the greater the reversal, the lower the reliability, as it implies that there was greater error in the initial revaluation.

In 2007 Lanito, detects the degree of reliability of IAS/IFRS in Finnish companies through questionnaires that target business managers and auditors of financial statements. The findings resulting from the responses, both for managers and auditors, recognize as reliable the information provided by several standards whilst the findings regarding those reliability standards requiring the exercise of judgment, are characterized as neutral.

Richardson et al. (2005) and Bandyopadhyay et al. (2010), measure the degree of reliability through the ability of current earnings to predict the earnings of the following period. This is based on the argument that the error arising from accruals is incorporated to the process of calculating the earnings, consequently weakening the relationship between successive earnings. In other words, the larger the error in the current earnings is, the lower the correlation to future earnings is as well, leading to a lower degree of persistence/predictive power. An important problem that arises is that this way of measuring the reliability is not consistent with the definition of reliability, as defined

by the conceptual framework of IAS/IFRS. It is alleged that this method may lead to conflicting findings concerning the degree of reliability, especially when the revaluation model is used. In particular, it is argued that the use of fair value introduces additional variation in earnings while reducing their predictive ability (Riedl, 2010). Therefore, based on the empirical model of Richardson et al. (2005), the degree of reliability would be characterized as low whilst by the definition given by the conceptual framework, the reliability is high (as long as the fair values are portrayed without error, presenting faithfully the economic reality).

Finally, the findings associated with the reliability and adoption of IAS/IFRS are identified in 2005 by Van Tendeloo and Vanstraelen, discovering while using the model of Jones (1991) that the financial statements of German firms that voluntarily adopt IAS/IFRS are characterized by higher degree of DA, compared with companies that do not adopt IAS/IFRS. In addition, Chen et al. (2010) examined 15 European countries and applied inter alia the modified model of Jones and Kothari et al. (2005), discovered opposite results in comparison to the findings of the Van Tendeloo and Vanstraelen (2005). Particularly, they find that the degree of DA is lower in firms adopting IAS/IFRS, which supports the increase in the quality of

their financial statements. In addition, the same researchers examine the quality of accruals through the model proposed in 2002 by the Dechow and Dichev, identifying a reduction in standard deviation of the residuals of the model, which again supports the rise in quality.

### **3.2 Interaction between Corruption and the Degree of Reliability**

As Ball (2006, p. 43) distinctly mentions, the uneven application/implementation of the standards constitutes the 'Achilles heel' for the IAS/IFRS. Specifically, the different degree of supervision by the authorities in charge of the proper implementation of the standards of each state as well as the distinctive characteristics governing each country, contribute to the creation of this particular problem. One of the characteristic which according to the literature influence the accounting system and the quality of the financial statements is the general culture of the country and the level of corruption and legal compliance (Leuz et al. 2003). Given that IAS/IFRS is a principle-based accounting system, the management in many cases has the freedom to choose an accounting treatment. This freedom ideally has as a result, the faithful representation of economic transactions and other events, in financial statements. In other words, the economic events are accounted

for and presented in accordance with their substance and economic reality and not merely their legal form. However, this is not the case in countries where corruption is high and the imposition of legal compliance is low. Specifically, in countries with such characteristics the management has no fear of legal sanctions and it may choose particular accounting treatments in order to manipulate the financial statements reducing to some extent the faithful representation/reliability of financial statements. Other characteristics that seems to influence the accounting system and are directly related to the level of corruption are, the existing political system (Leuz and Oberholzer-Gee, 2006), the extent of government involvement in businesses and the legal system (La Porta et al., 1998).

#### **4. Hypothesis development**

##### **4.1 Adoption of IAS/IFRS and the degree of Faithfull representation/Reliability of Financial Statements**

Based on the definition of faithful representation/reliability, as defined by the conceptual framework, the financial statements are said to be reliable when they do not contain any material error or bias and reliably reflect the economic events that they must present. In particular, the financial statements should be governed by five partial characteristics, to qualify as reliable. First, to present faithfully the

economic events; secondly, they should not be the product of any prejudice whatsoever, that is to be neutral; third, to present the economic substance of economic events unconstrained by legal aspects; fourth, decisions taken by the management regarding uncertain events which require the exercise of judgment must be taken with caution and finally, the financial statements ought to be complete.

The purpose of the IAS/IFRS Committee was the creation and provision, especially to investors, of augmented levels of relevance in the financial statements. Given the interaction between the characteristics of relevance and reliability, the increase of the degree of relevance will be attained by increasing the reliability of financial statements. To achieve this objective, the IASB has taken the following actions: First, there was a reduction of alternative accounting methods (e.g. abolition of the LIFO method), which aims to reduce the degree of manipulation of results and thus, the increase of their reliability. Second, there was a focus on the economic substance of events, giving in many cases the option to management to choose the accounting treatment (e.g. introduction of fair value as the valuation method) resulting to the better reflection of economic reality in the financial statements. Finally, the detailed presentation of the principles relating to valuation,

recognition and publication of the financial statements, suggests that the degree of manipulation by the management is reduced and at the same time a rise in terms of completeness is observed.

Additionally, with the adoption of IAS/IFRS and the increase of the degree of comparability, especially at international level, investors are able to compare at a lower cost the financial statements, identifying omissions and/or errors in accounting statements easier. This leads both, managements and audit firms that audit the financial statements, to be more careful in the drafting and auditing of accounts, resulting in more reliable financial statements.

On the other hand, in some cases, the use of fair value and the exercise of judgment by the management may result in the rise of the degree of manipulation. Moreover, the difficulty of calculating the fair value can introduce additional estimation error. These elements can cause loss of reliability, but are not considered likely to lead to a reduction in the reliability of the financial statements in the period following the adoption of IAS/IFRS.

If one relies on the definition of reliability, it can be drawn that before the adoption of IFRS the financial statements were governed by a low degree of reliability, since due to the use of historical cost the accounting data did not adequately describe the

economic reality, because the book values of a firm deviate significantly from the economic values. The deviation from the economic reality - an indication of low-level reliability - resulting from the use of historical cost is expected to be greater than the deviation caused by the use of fair value, upon adoption (which as mentioned above, in some cases can be manipulated or can be inaccurate). The fact that the elements that seem to reduce the reliability of financial statements, such as those mentioned in the previous paragraph, seem unlikely to prevail and lead to the reduction of the degree of reliability in the period following the adoption of IFRS in combination with the actions taken by the International Accounting Standards Board to increase the reliability, and result to the following hypothesis:

*Hypothesis 1:* The faithful representation/reliability of the financial statements of firms adopting IAS/IFRS is higher during the period following the adoption of IAS/IFRS in relation to the period before the adoption.

#### **4.2 Interaction between Corruption and the Degree of Reliability**

The high degree of corruption, among other things, indicates the non-implementation of laws, weaker enforcement of legal sanctions and the existence of non-transparent economic transactions. Therefore, the expected increase in reliability

(hypothesis 1) resulting from the adoption of IAS/IFRS, does not depend solely on the adoption of IAS/IFRS but is, also, influenced by the degree of corruption in each country.

In many cases, the choice of accounting treatment by the management is allowed by IAS/IFRS in order to better reflect the economic reality. But in countries where corruption is high and the imposition of legal sanctions and law enforcement is weaker, this option enables management to manipulate the results with greater ease and without fear of legal sanctions, thus reducing to some extent the reliability of financial statements. The conclusion is that the proper application of IAS/IFRS and the reliability of the financial statements are directly dependent on the degree of corruption that governs every country. The hypothesis which arises is the following:

*Hypothesis 2:* The improvement of the degree of reliability of the financial statements of companies adopting IAS/IFRS is higher in countries with low corruption.

## 5. Methodology

### 5.1 Measuring reliability - First Method

The first model used to measure the reliability has been developed by Kim and Kross (2005). Specifically, cash flows from operating activities and accruals at time  $t$  are set as the

independent variables, whilst the cash flows from operating activities in  $t+1$  as the dependent variable. The model which emerges is the following:

$$Cfo_{i,t+1} = a_0 + a_1 Cfo_{i,t} + a_2 Acc_{i,t} + u_{i,t+1} \quad (1)$$

$Cfo_{i,t+1}$  = Cash flows from operating activities in  $t+1$  / Total assets at  $t$ ,

$Cfo_{i,t}$  = Cash flows from operating activities in  $t$  / Total assets at  $t-1$ ,

$Acc_{i,t}$  =  $DWC - DEP$ ,

$DEP$  = Depreciation / Total Assets at  $t-1$ ,

$DWC$  = change in net accounts Receivables / total assets at  $t-1$ , plus change in inventory / Total assets at  $t-1$ , plus change in other current assets / total assets at  $t-1$ , minus change in accounts payable / Total assets at  $t-1$ , minus change in taxes payable / total assets at  $t-1$ , minus change in other current liabilities / Total assets at  $t-1$ , minus change in deferred taxes / Total assets at  $t-1$ .

$U_{i,t+1}$  = residuals

Reliability is defined as the ability of the two independent variables to explain the cash flows from operating activities in  $t+1$ . This ability is identified by the coefficient of determination of the model ( $R^2$ ). In other words, the identification of higher  $R^2$  indicates a higher degree of reliability, that is, the earnings and the current cash flows can predict better the future cash flows and vice versa. The comparison of reliability between the two periods - before and after the adoption - is performed by comparing the  $R^2$  of two independent

samples. The statistical significance of the difference between the two R<sup>2</sup>s is examined through a test used by Van der Meulen et al, in 2007, which was based on the analysis of Crammer (1987) (Appendix 1).

### **5.2 Measuring reliability - Second Method**

The second model used to measure reliability is based on the model developed by White, in 2007. There are two important properties of this model. First, is that the calculation of accruals is not based on changes in the accounting items ('traditional' approach), as older models (Dechow and Dichev, 2002; McNichols, 2002; Kim and Kross, 2005, etc.), but on their closing balances. Secondly, a distinction between accruals and deferrals is made, escaping from the hitherto definition of accruals that integrated the cumulative accruals and deferrals.

The underlying logic of the model is to isolate the amounts recognized in the year t and which are disbursed to the next (t+1) (payable/accruals), the amounts recognized in the year t +1 and disbursed to i, t as well as the amounts disbursed in fiscal year t+1 and in relation to the upcoming year (prepaid/deferrals). Finally, White (2007) examines the ability of these three variables to explain the cash flows at t+1. A basic assumption of the model is that short-term assets and liabilities are recovered or settled, within twelve months.

The higher the capacity of the three independent variables in explaining the dependent variable is, the higher the degree of reliability of the financial statements. In other words, when the accruals (payable/accruals at time t and prepaid/deferrals at time t+1) explain the operating cash flows at time t+1, then the management estimations relating to accruals can be regarded as reliable. Moreover, White (2007) argues that the introduction of the independent variable  $Cpcf_{i,t+1}$  introduces systematic measurement error in the regression (White, 2007, p. 18). Hence, he uses a proxy variable; the  $Cpcf_{i,t}$ . Finally, the explanatory ability of the independent variables is measured by the coefficient of determination of the model (R<sup>2</sup>). As in the previous model the comparison of reliability between the two is performed by comparing the R<sup>2</sup> of two independent samples. Again, the statistical significance of the difference between the two R<sup>2</sup> is examined through the test used by Van der Meulen et al, in 2007 (Appendix 1). The model which emerges is the following:

$$Cfo_{i,t+1} = a_0 + a_1 Accr_{i,t} + a_2 Cpcf_{i,t} + a_3 Def_{i,t+1} + u_{i,t+1} \quad (2)$$

$Cfo_{i,t+1}$  = Cash flows from operating activities in t + 1 / Total assets at t,

$Accr_{i,t}$  = Net accounts receivables / Total assets at t-1, minus other current liabilities / Total assets at t-1, minus inventory accruals / Total assets at t-1,

$Cpcf_{i,t}$  = operating income before depreciation at time  $t$  minus  $Accr_{i,t}$  plus  $Def_{i,t-1}$ .

$Def_{i,t+1}$  = other current assets / Total assets at  $t$ , plus inventory deferrals / Total assets at  $t$ ,

$U_{i,t+1}$  = residuals

## 6. Sample

The sample of this study consists of listed companies of 15 European countries, which according to the classification published by the FTSE Group in September 2009 (FTSE, Country Classification, 2009) are characterized as developed. The countries considered are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the UK. Moreover, three subsamples were created: a) countries with low corruption (Denmark, Finland, Sweden, Holland, Germany, and Ireland), b) countries with moderate corruption (United Kingdom, France, Belgium, Spain, and Portugal) and c) countries with high corruption (Greece and Italy). In order to categorise these countries to each subsample, the Corruption Perceptions Index published by Transparency International in 2010, was used.

The time period under examination in this research is period of 10 years consisting of the period prior (2000-2004) and the period after (2005-2009) the adoption of

IAS/IFRS. Given that the effects of IFRS on the financial statements of companies that are mandatory IAS/IFRS adopters are the ones examined, firms which are either voluntary adopters of IAS/IFRS, or they adopt them at a time after 2005 (as listed on AIM London Stock Exchange - alternative investment market) are excluded from the sample. In other words, any firms whose first publication of their financial statements under IAS/IFRS was held a year other than 2005 are crossed out from the sample.

The data for the sample were provided by DataStream database. In addition, other than the aforementioned exceptions firms in the financial sector are also excluded (so that the findings can be directly compared with previous research), since the exclusion of financial firms from samples of previous research is almost ubiquitous. Additionally, according to the existing literature, companies with negative book value of capital are excluded. Among others, Collins et al. (1997) and Collins et al. (1999) and Brown et al. (1999) argue that the samples used for the measurement of relevance should incorporate only positive observations of book value of equity. In addition, 2% of the extreme values are deleted. The process of the creation of the final samples as well as the data per country, are summarized in Table 1 and 2.

**Table 1: Sample selection for IFRS mandatory adopters**

	(N)	(N)	(N)
	2000 - 2004	2005 - 2009	2000 - 2009
Original sample	26876	23047	49923
Minus:			
Observations for companies / fiscal year different from 1/1-31/12	7495	6501	13996
Observations for companies in the financial sector	1615	1459	3074
Observations for companies with negative book value of equity	581	572	1153
Voluntary adopters	7711	6686	14397
Data not available	437	449	886
Outliers (2%)	136	191	327
Final sample	8901	7189	16090

This sample refers to the reliability measure resulting from regression  $Cfo_{i,t+1} = a_0 + a_1Cfo_{i,t} + a_2Acc_{i,t} + u_{i,t+1}$ . Observations arising from the other model vary, depending on the unavailable data.

**Table 2: Final sample per country for the periods prior and post the adoption of IAS/IFRS**

Country	2000 -2004	2005 - 2009	Total 2000 - 2009
Austria	56	30	86
Belgium	285	215	500
Denmark	420	232	652
Finland	404	400	804
France	1680	1403	3083
Germany	619	418	1037
Greece	908	890	1798
Ireland	164	84	248
Italy	703	715	1418
Luxembourg	40	29	69

Netherlands	420	399	819
Portugal	196	150	346
Spain	433	407	840
Sweden	928	862	1790
UK	1645	955	2600
Total Observations	8901	7189	16090

These data refers to the reliability measure resulting from regression  $Cfo_{i,t+1} = a_0 + a_1Cfo_{i,t} + a_2Acc_{i,t} + u_{i,t+1}$ . Observations arising from the other model vary, depending on the unavailable data.

## 7. Results

### 7.1 Descriptive Statistics

In Table 3 the descriptive elements of the sample are presented. A detailed description of the variables used is presented in the table. The

correlation tables are presented in the third Appendix. The first correlation matrix concerns the period before the adoption of IFRS/IAS and the second the period after the adoption. It is observed that the negative (positive) correlation of current accruals(deferrals at t+1) and cash flows from operating activities at t+1is statistically significant for both periods. Nevertheless, these findings do not suggest any change (positive or negative) in reliability.

**Table 3: Descriptive statistics**

Variable / Model	2000-2004					2005-2009				
	Mean	Median	Q1	Q3	Sd	Mean	Median	Q1	Q3	Sd
Reliability 1										
Cfot+1	0,07	0,08	0,03	0,12	0,15	0,07	0,07***	0,03	0,12	0,11
Accr t	0,08	0,08	-0,01	0,18	0,20	0,08	0,08	-0,01	0,18	0,17
Cpcf t	0,07	0,06	-0,05	0,17	0,27	0,08***	0,08***	-0,05	0,19	0,22
Def t+1	0,07	0,03	0,01	0,10	0,11	0,06**	0,02***	0,00	0,10	0,10
Reliability 2										
Cfot+1	0,09	0,09	0,05	0,13	0,09	0,08***	0,08***	0,04	0,12	0,08
Cfo t	0,08	0,08	0,05	0,12	0,09	0,09***	0,09***	0,05	0,13	0,08
Acc	-0,05	-0,06	-0,09	-	0,09	-	0,03***	-0,07	0,00	0,08
				0,02		0,04***				

The model Reliability 1 refers to the regression:  $Cfoi_{t+1} = a_0 + a_1Accri_t + a_2Cpcfi_t + a_3Defi_{t+1}$ , and model Reliability 2 refers to the regression:  $Cfoi_{t+1} = a_0 + a_1Cfoi_t + a_2Acci_t$ . Variables:  $Cfoi_{t+1}$  = Cash flows from operating activities in  $t + 1$  / Total assets at  $t$ ,  $Cfoi_t$  = Cash flows from operating activities in  $t$  / Total assets at  $t-1$ ,  $Accri_t$  = Net accounts receivables / Total assets at  $t-1$ , minus other current liabilities / Total assets at  $t-1$ , minus inventory accruals / Total assets at  $t-1$ ,  $Defi_{t+1}$  = Other current assets / Total assets at  $t$ , plus inventory deferrals / Total assets at  $t$ ,  $Cpcfi_t$  = operating income before depreciation at time  $t$  minus  $Accr_{it}$  plus  $Defi_{t-1}$ ,  $Acci_t$  =  $DWC - DEP$ ,  $DEP$  = Depreciation / Total Assets at  $t-1$ ,  $DWC$  = change in net accounts Receivables / total assets at  $t-1$ , plus change in inventory / Total assets at  $t-1$ , plus change in other current assets / total assets at  $t-1$ , minus change in accounts payable / Total assets at  $t-1$ , minus change in taxes payable / total assets at  $t-1$ , minus change in other current liabilities / Total assets at  $t-1$ , minus change in deferred taxes / Total assets at  $t-1$ , \*\*\* = 1% statistically significant, \*\* = 5% statistically significant, \* = 10% statistically significant, T-test and Wilcoxon rank sum test have been used to test for differences means and median, respectively.

## 7.2 Empirical Findings

According to the first hypothesis, reliability of financial statements is expected to increase in the period following the adoption of IFRS/IAS. Moreover, this increase is expected to be larger in countries with a low degree of corruption. Tables 3 and 4 illustrate the findings on this matter.

### 7.2.1 Empirical findings measuring reliability - First Method

Using the first method, the change of reliability is detected by the linear model 1 and more specifically, by examining the change of the coefficient of determination ( $R^2$ ). In case of increasing reliability, the  $R^2$  of each regression is expected to be higher in the period after the adoption in relation to the period before the adoption. The results concerning the aggregate sample detect a marginal increase in the degree of reliability but are not statistically significant whatsoever.

Specifically, with regards to the aggregate sample, the change of  $R^2$  shows a marginal non-significant increase in reliability at the rate of 3% (Table 4). In addition, with regards to the low and moderate corruption samples, the results again are not statistically significant. In detail, for the low corruption sample (Denmark, Finland, Sweden, Holland, Germany, Ireland and Luxembourg) the difference between  $R^2$  is 4% and not statistically significant, and for the moderate corruption sample (United Kingdom, France, Belgium, Spain and Portugal) no difference is detected between  $R^2$  (Table 4).

Finally and most importantly, the degree of reliability is detected to be lower in countries with a high degree of corruption (Greece and Italy). Specifically, the change of  $R^2$  shows a statistical significant decrease (at the level of 10%) in reliability at the rate of -10% (Table 4). Conflicting results

concerning Greece were detected from Naoum et al. in 2011. In detail, the authors detected an increase in quality of financial statements, suggesting higher reliability.

**Table 4: Reliability 1**

$$Cfo_{i,t+1} = a_0 + a_1Cfo_{i,t} + a_2Acc_{i,t} + u_{i,t+1}$$

Country	a0	a1	a2	Ad. R <sup>2</sup>	Dif.R <sup>2</sup>
All countries prior IAS/IFRS	0.023***	0,699***	- 0,094***	51%	
All countries post IAS/IFRS	0,015***	0,680***	-0.052**	54%	+03%
Countries with low corruption-prior IAS/IFRS	0.027***	0.739***	0.012	52%	
Countries with low corruption-post IAS/IFRS	0.008	0.756***	-0.039	56%	+04%
Countries with moderate-corruption prior IAS/IFRS	0.028***	0.711***	-0.049**	52%	
Countries with moderate corruption-post IAS/IFRS	0.019***	0.685***	-0.049**	52%	0%
Countries with high corruption-prior IAS/IFRS	0.017*	0.680***	- 0.147***	53%	
Countries with high corruption-post IAS/IFRS	0.020**	0.509***	-0.051	43%	-10%*

Variables :  $Cfo_{i,t+1}$  = Cash flows from operating activities in  $t + 1$  / Total assets at  $t$ ,  $Cfo_{i,t}$  = Cash flows from operating activities in  $t$  / Total assets at  $t-1$ ,  $Acc_{i,t}$  =  $DWC - DEP$ ,  $DEP$  = Depreciation / Total Assets at  $t-1$ ,  $DWC$  = change in net accounts Receivables / total assets at  $t-1$ , plus change in inventory / Total assets at  $t-1$ , plus change in other current assets / total assets at  $t-1$ , minus change in accounts payable / Total assets at  $t-1$ , minus change in taxes payable / total assets at  $t-1$ , minus change in other current liabilities / Total assets at  $t-1$ , minus change in deferred taxes / Total assets at  $t-1$ . The technique bootstrapping (Van der Meulen et. al 2007 and Crammer 1986) is used to control the statistical significance of differences in  $R^2$ . The Variance Inflation Factor (VIF) was calculated for all independent variables and the results do not indicate multicollinearity. \*\*\* = 1% statistical significance, \*\* = 5% statistically significant, \* = 10% statistically significant. Countries with low corruption: Denmark, Finland, Sweden, Holland, Germany, Ireland. Countries with moderate corruption: United Kingdom, France, Belgium, Spain, Portugal. Countries with high corruption: Greece, Italy.

### 7.2.2 Empirical findings measuring reliability - Second Method

Using the second method, the change of reliability is detected by the linear model 2. In case of increasing reliability, the R<sup>2</sup> is expected to be higher in the period post the adoption in relation to the period prior the adoption. The results regarding the aggregate sample detect a not statistically significant increase in the degree of reliability. In detail, the change of R<sup>2</sup> regarding the aggregate sample shows a marginal non-significant increase in reliability at the rate of 2% (Table 5). In addition, with regards to the low and moderate corruption samples, the results again are not statistically significant. Namely, for the low corruption sample the difference between R<sup>2</sup> is 4% and not statistically significant, and for the moderate corruption sample the difference between R<sup>2</sup> is -1% and not statistically significant (Table 5).

As in previous method the degree of reliability is detected to be significantly lower in counties with a high degree of corruption. Using the latter regression the change of R<sup>2</sup> indicates a statistical significant decrease (at the level of 10%) in reliability at the rate of -7% (Table 5).

The findings derived from both regressions suggest that the adoption of IFRS/IAS seems to be not enough. In other words, the level of reliability of financial statements in every country does not depend solely on the adoption of IAS/IFRS but is also influenced by the degree of corruption in each country. Specifically, in countries with low and moderate level of corruption, the level of reliability after the adoption of IFRS/IAS remains the same, while in countries with high level of corruption the level of reliability deteriorates. At this point it should be highlighted that the findings are not in line with one of the main purposes of IASB which was the increase of reliability/faithful representation.

**Table 5: Reliability 2**

$$Cfo_{i,t+1} = a_0 + a_1 Accr_{i,t} + a_2 Cpcf_{i,t} + a_3 Def_{i,t+1} + u_{i,t+1}$$

Country	a0	a1	a2	a3	Ad. R <sup>2</sup>	Dif. R <sup>2</sup>
All countries prior IAS/IFRS	0.026***	0.443***	0.459***	- 0.295***	35%	
All countries post IAS/IFRS	0.016***	0.451***	0.490***	- 0.333***	37%	+02%
Countries/low corruption-prior IAS/IFRS	0.027***	0.488***	0.484***	- 0.356***	38%	

Countries/ low corruption-post IAS/IFRS	0.001	0.497***	0.533***	- 0.304***	42%	+04%
Countries/ moderate-corruption prior IAS/IFRS	0.022***	0.424***	0.440***	- 0.292***	38%	
Countries/ moderate-corruption post IAS/IFRS	0.029***	0.424***	0.455***	- 0.395***	37%	-01%
Countries/ high corruption-prior IAS/IFRS	0.032***	0.527***	0.607***	- 0.506***	38%	
Countries/ high corruption-post IAS/IFRS	0.019***	0.390***	0.419***	- 0.347***	31%	-07%*

Variables :  $Cfoi_{t+1}$  = Cash flows from operating activities in  $t + 1$  / Total assets at  $t$ ,  $Accri_t$  = Net accounts receivables / Total assets at  $t-1$ , minus other current liabilities / Total assets at  $t-1$ , minus inventory accruals / Total assets at  $t-1$ ,  $Def_{i,t+1}$  = Other current assets / Total assets at  $t$ , plus inventory deferrals / Total assets at  $t$ ,  $Cpfi_t$  = operating income before depreciation at time  $t$  minus  $Accri_t$  plus  $Def_{i,t-1}$ . The technique bootstrapping (Van der Meulen et. al 2007 and Crammer 1986) is used to control the statistical significance of differences in  $R^2$ . The Variance Inflation Factor (VIF) was calculated for all independent variables and the results do not indicate multicollinearity. \*\*\* = 1% statistical significance, \*\* = 5% statistically significant, \* = 10% statistically significant. Countries with low corruption: Denmark, Finland, Sweden, Holland, Germany, Ireland. Countries with moderate corruption: United Kingdom, France, Belgium, Spain, Portugal. Countries with high corruption: Greece, Italy.

## 8. Conclusions

The IASB creates the standards and the conceptual framework in an attempt to create higher quality financial statements. Throughout this article, the extent to which this objective has been achieved is examined. Specifically, whether the quality of the financial statements of firms adopting IFRS/IAS is superior to the period after the adoption of IAS/IFRS, as compared with the period before the adoption, is examined.

An important characteristic and a contribution of this research is the fact that the quality measurement methodology used, varies greatly from other existing methodologies that are identified in the existing literature. The quality of financial statements is examined in the light of the Conceptual Framework and specifically through the examination of Reliability which is one of the fundamental qualitative characteristics.

The sample consists of listed companies of fifteen European countries that have adopted IAS/IFRS mandatorily. The countries included in the sample are: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, Sweden and the UK. Additionally, three other subsamples are created: a) countries with low corruption, b) countries with moderate corruption and c) countries with high corruption.

The time horizon is 10 years, from 2000 until 2009. Specifically, the period between 2000 and 2004 is defined as the period before the adoption, while the period between 2005 and 2009 is defined as the period after the adoption.

Using two alternatives measures in order to capture the difference between the degree of reliability before and after the adoption, the findings that are identified for the aggregate sample suggest a marginal increase in the reliability of the financial statements but, without being statistically significant. This indicates that the level of reliability for the aggregate sample after the adoption seems to be unaltered. Moreover, it is detected that countries with a low degree of corruption have increased the degree of reliability, but still, this increase is not statistically significant. Additionally, the degree of reliability for countries with a

moderate degree of corruption seems to be unchanged.

Lastly and more importantly, the findings that are identified for countries with a high degree of corruption indicate a statistically significant reduction in the degree of reliability. These findings advocate that the adoption of IFRS/IAS seems to be not enough. It appears that the level of reliability of financial statements in every country does not depend solely on the adoption of IAS/IFRS but is also influenced by the degree of corruption in each country.

Finally, the results are subject to some limitations. Firstly, the models that are used for the measurement of reliability have as an independent variable the short-term accruals. That is, the models measure the ability of current accruals to explain the future cash flows. Given that, the models fail to take into consideration accounting treatments that concern non-current assets/liabilities. Secondly, the methodology depends on the comparison of  $R^2$ . While in the current article a lot of tests are utilized in order to check the significance of  $R^2$ , a part of the literature suggests that this kind of studies are plagued with endogeneity issues. These limitations could be taken into consideration as opportunities for future research.

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## Appendix

### 1- Statistical significance of the differences of Factor Determination ( $R^2$ )

The methodology carried out in order to identify the statistical significance of the difference between two Coefficients of Determination ( $R^2$ ) was held in two steps. Initially, the standard errors as well as variations of the coefficients of determination for each sample were calculated using the 'bootstrapping' technique. Then, following the statistical test used by Van der Meulen et al, in 2007, which was based on the analysis of Crammer (1987), the statistical significance concerning the differences in terms of  $R^2$ , was identified.

Specifically, the comparison of  $R^2$  between the two samples (prior and post the adoption), is performed through the following statistical test:

$$T = \frac{|R_{IFRS}^2 - R_{LOCAL}^2|}{SE(R_{IFRS}^2 + R_{LOCAL}^2)}$$

Moreover, the standard error (SE) is equal to:

$$SE(R_{IFRS}^2 + R_{LOCAL}^2) = \sqrt{VAR(R_{IFRS}^2 + R_{LOCAL}^2)}$$

Therefore, given that the two samples being independent, the following applies:

$$SE(R_{IFRS}^2 + R_{LOCAL}^2) = \sqrt{VAR(R_{IFRS}^2) + VAR(R_{LOCAL}^2)}$$

## 2 - Corruption Index

### Corruption Perceptions Index 2010- European Union and Western Europe

RANK	REGIONAL RANK	COUNTRY TERRITORY	/ CPI SCORE	2010
1	1	Denmark	9.3	
4	2	Finland	9.2	
4	2	Sweden	9.2	
7	4	Netherlands	8.8	
8	5	Switzerland	8.7	
10	6	Norway	8.6	
11	7	Iceland	8.5	
11	7	Luxembourg	8.5	
14	9	Ireland	8.0	
15	10	Austria	7.9	
15	10	Germany	7.9	
20	12	United Kingdom	7.6	
22	13	Belgium	7.1	
25	14	France	6.8	
26	15	Estonia	6.5	
27	16	Slovenia	6.4	
28	17	Cyprus	6.3	
30	18	Spain	6.1	
32	19	Portugal	6.0	
37	20	Malta	5.6	
41	21	Poland	5.3	
46	22	Lithuania	5.0	

50	23	Hungary	4.7
53	24	CzechRepublic	4.6
59	25	Latvia	4.3
59	25	Slovakia	4.3
67	27	Italy	3.9
69	28	Romania	3.7
73	29	Bulgaria	3.6
78	30	Greece	3.5

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### 3 - Correlation matrixes

#### Sample prior to adoption

	Cfo t	Cfo t+1	Acc t	Accrt	Cpcf t	Def t+1
Cfo t	1	0.690***	-0,453***	0.054***	0.378***	0.044**
Cfo t+1	0.742***	1	-0,012**	-0,052**	0.376***	0.049**
Acc t	0.450***	-0.352***	1	0,521***	0.223	0.034
Accrt	0.057***	0,026	0,576***	1	-0.694***	0.058***
Cpcf t	0.398***	0.368***	0,013	-0.635***	1	0.415***
Def t+1	0.042**	0.033*	0,099	0.209***	0.256***	1

Above the diagonal, Pearson's correlations are illustrated, while below the diagonal Spearman's correlations. Variables: Cfo<sub>i,t</sub> = Cash flows from operating activities in t / Total assets at t-1, Cfo<sub>i,t+1</sub> = Cash flows from operating activities in t + 1 / Total assets at t, Acc t = DWC - DEP, DEP = Depreciation / Total Assets at t-1, DWC = change in net accounts Receivables / total assets at t-1, plus change in inventory / Total assets at t-1, plus change in other current assets / total assets at t-1, minus change in accounts payable / Total assets at t-1, minus change in taxes payable / total assets at t-1, minus change in other current liabilities / Total assets at t-1, minus change in deferred taxes / Total assets at t-1, Accr<sub>i,t</sub> = Net accounts receivables / Total assets at t-1, minus other current liabilities / Total assets at t-1, minus inventory accruals / Total assets at t-1, Def<sub>i,t+1</sub> = Other current assets / Total assets at t, plus inventory deferrals / Total assets at t, Cpcf<sub>i,t</sub> = operating income before depreciation at time t minus Accr<sub>i,t</sub> plus Def<sub>i,t-1</sub>. \*\*\* = 1% statistically significant, \*\* = 5% statistically significant, \* = 10%.

#### Sample post to adoption

	Cfo t	Cfo t+1	Acc t	Accrt	Cpcf t	Def t+1
Cfo t	1	0.705***	-0,645***	-0,004	0.438***	0.034*
Cfo t+1	0.740***	1	-0,023**	-0.061***	0.383***	0,014
Acc t	0.342***	-0.436***	1	0.487***	0.002	0.063
Accrt	-0,006	-0.058***	0,345***	1	-0.732***	0.122***
Cpcf t	0.413***	0.359***	0,015	-0.707***	1	0.284***
Def t+1	0.037*	-0,008	0,066	0.186***	0.197***	1

*The Interrelation among Faithful Representation (Reliability), Corruption and IFRS  
Adoption: An Empirical Investigation*

Above the diagonal, Pearson's correlations are illustrated, while below the diagonal Spearman's correlations. Variables:  $Cfoi_{i,t}$  = Cash flows from operating activities in  $t$  / Total assets at  $t-1$ ,  $Cfoi_{i,t+1}$  = Cash flows from operating activities in  $t + 1$  / Total assets at  $t$ ,  $Acc_{i,t}$  =  $DWC - DEP$ ,  $DEP$  = Depreciation / Total Assets at  $t-1$ ,  $DWC$  = change in net accounts Receivables / total assets at  $t-1$ , plus change in inventory / Total assets at  $t-1$ , plus change in other current assets / total assets at  $t-1$ , minus change in accounts payable / Total assets at  $t-1$ , minus change in taxes payable / total assets at  $t-1$ , minus change in other current liabilities / Total assets at  $t-1$ , minus change in deferred taxes / Total assets at  $t-1$ ,  $Accr_{i,t}$  = Net accounts receivables / Total assets at  $t-1$ , minus other current liabilities / Total assets at  $t-1$ , minus inventory accruals / Total assets at  $t-1$ ,  $Def_{i,t+1}$  = Other current assets / Total assets at  $t$ , plus inventory deferrals / Total assets at  $t$ ,  $Cpcfi_{i,t}$  = operating income before depreciation at time  $t$  minus  $Accr_{i,t}$  plus  $Def_{i,t-1}$ . \*\*\* = 1% statistically significant, \*\* = 5% statistically significant, \* = 10%.

