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The Effect of the Mandatory Application of IFRS on the Value Relevance of Accounting Data: Some Evidence from Greece

By

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Abstract:

In this study we tested the effect of the mandatory adoption of IFRS upon the value relevance of earnings and book values using data from the Athens Stock Exchange that covered a period of two years before and two years after the mandatory adoption of IFRS. Greece is a code-law country with strong tax conformity, bank orientation and conservative accounting rules which have a negative effect on the value relevance of financial statements. As IFRS adoption promotes fair value accounting and weakens the link between taxation and accounting rules we expect earnings and book value to become more value relevant ceteris paribus. We report that the adoption of IFRS positively affected the value relevance of consolidated net income and book value although it had no effect on their unconsolidated counterparts and that consolidated accounting numbers are by far more value relevant than unconsolidated ones in both periods and, unexpectedly, this superiority is more pronounced after IFRS adoption. We also report that disaggregating net income increases the explanatory power of the earnings – book value capitalization (EBVC) model. Finally, we report that although the overall explanatory power of the model increases, the incremental explanatory power of both net income and financial income decreases. These last findings question the expected benefits of specific IFRS rules concerning the measurement of these income components. Nevertheless, assuming that the total impact of IFRS adoption is captured by the overall explanatory power of the models which actually increased, we conclude that mandating IFRS may prove beneficial even in an unfavorable context.

1. Introduction

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Greece, together with all other countries in the European Union, adopted International Financial Reporting Standards (IFRS)[1] from 1st of January 2005. The (mandatory) adoption of IFRS by all Greek listed firms was a vast change for financial reporting in Greece and it can be compared to the adoption of the 4th and 7th Directives of the European Union in the late 1980s'.

In the pre – IFRS period, Greece had all the characteristics of a Code – Law country. Firms relied heavily on bank loans to finance their activities; financial reporting was aimed at creditor's protection and had a strong tax influence. For these reasons there was a strong intervention by the state in the development of accounting standards. Financial accounting principles and methods were imposed by the government through Legislation. Assets presentation in the balance sheet was based solely upon historic cost and income was recognized in the Profit and Loss account only when it was realized, i.e. through a transaction. Prudence was the most important underlying accounting principle and fair value measurements were rejected on the basis of not been prudent. In the post – IFRS period, although the underlying economic reality remained the same with that of the pre – IFRS period, i.e., banks still are the major source of external finance for Greek firms, the aim of financial reporting changed and it is now directed towards assisting investors in making well informed decisions. The adoption of IFRS since 2005 brought up too many changes, in terms of financial reporting, in a market that was not familiar with concepts such as: fair value, value in use, deferred tax assets and liabilities, impairment, reporting for employee pension plans, provisions and so on and so forth. Moreover, the adoption of IFRS in Greece was not a necessity that was imposed by the market to the standard setters. It was not the underlying economic reality that had changed and, therefore, new accounting standards should be introduced in order to cope with the increased demand for more relevant and timely information by the capital market participants. On the contrary, standard setters located out of the country decided that the country (along with all other European Union members) should change its accounting standards. However, taking into account the well documented poor shareholder protection and the weak legal enforcement that exists in French – origin code – law countries such as Greece (La Porta et al., 1998) as well as the observed greater propensity of managers to manipulate accounting earnings in Greece (Ding et al., 2007; Leuz et al., 2003), we should be skeptical about the expected benefits of IFRS adoption. Therefore, whether capital markets participants in Greece perceived the mandatory change of the accounting standards that took place in 2005 as an improvement or as a waste of time and money, is a question that has to be answered by empirical research.

The purpose of this paper is to examine the effects from the mandatory adoption of IFRS in Greece on the perceived, by the users, quality of accounting information. One of the objectives of the IFRS is to provide a single set of high quality, accounting standards to help participants in the world's capital markets

[1] In this study the term International Financial Reporting Standards is used so as to include both the International Financial Reporting Standards and the International Accounting Standards.

and other users to make economic decisions.[2] To accomplish this, the International Accounting Standards Board (IASB), and its predecessor body the International Accounting Standards Committee (IASC), developed a set of principles based standards, reduced the number of allowed alternative accounting treatments and imposed accounting measurements that better reflected an entity's underlying financial position and performance. Although the term "quality of accounting information" can be interpreted in many different ways, we operationalise it in this study the same way Barth et al. (2007) did, i.e. we consider accounting numbers that are more value relevant as being of higher quality. We test, therefore, whether the mandatory application of IFRS by Greece improved the quality of accounting numbers in Greece by examining whether, within the context of the earnings – book value capitalization (EBVC) model, earnings and book value calculated in accordance with IFRS became more value relevant than earnings and book value calculated under Greek Accounting Standards (GAS).

The value relevance of aggregate reported earnings and total book value is, however, only part of the story. Previous empirical research in both the USA (Lipe 1986; Ohlson and Penman, 1992; and, Fairfield et al, 1996) and Europe (Ballas, 1996 and 1999; Giner and Reverte, 1999; and, Hevas, 2007) has shown that the income components have incremental informational content, over and above that provided by earnings alone. For this reason, we proceed further and test the incremental value relevance of the income components before and after the adoption of IFRS. In the post - IFRS period, Greek listed firms were required to measure some of the accounting income components in a completely different way than they used to. In the pre-IFRS period, for example: investment income was recognized in accordance with the cost method; depreciation, amortization and depletion were calculated using the tax rates without reference to the useful life of the assets; only current tax was recognized in the annual accounts; income classified as extraordinary was shown separately from income classified as ordinary and so on and so forth. In this study, we concentrate on three of the most important of such items, i.e. reported financial income, income tax expense and extraordinary income. To the best of our knowledge, this study is the first of its kind that examines this issue, since prior studies were concentrated on total reported income only.

Since 2005, Greek company law (Codified Law 2190/1920) requires that all firms listed on the Athens Stock Exchange prepare both their unconsolidared and their consolidated statements using IFRS. In this study we test whether the adoption of IFRS had an influence on the value relevance of both consolidated and unconsolidated earnings and book value. Moreover, we test whether disaggregating total reported net income to its components (i.e. operating income, financial income, extraordinary income and income tax) improves the explanatory power of the EBVC model in both the pre – IFRS and the post – IFRS periods.

[2] International Accounting Standards Board, "International Financial Reporting Standards", IASB, 2007, p 14

We differentiate from other studies that examined the economic consequences of mandatory IFRS adoption through an event studies approach (Christensen et al., 2007) because we do believe that, in tremendous changes of such an importance, in which political bargaining takes over for a number of years, it is practically impossible to identify the specific date of the event.

In section 2 of the paper there is a review of the relevant literature. A short description of the most important changes in financial reporting that occurred as a result of the adoption of IFRS is provided in section 3. In section 4, we present the models that will be tested in this study. A description of the data used is given in section 5, while the empirical findings are presented in section 6. The paper concludes with section 7.

2. Literature Review on Value Relevance

In this section we review the literature on the value relevance of earnings, earnings components and book value.

2.1 The Stakeholder Model vs. the Shareholder Model

There are several factors that have been proposed in order to explain differences in financial reporting practices across countries. Nobes and Parker (2000) identify four of these as the most important: the nature of the legal system, the information requirements of different providers of finance, the linkage between company taxation and disclosure in published financial reports and the degree of professionalisation[3].

Historically, the development of accounting standards in any country falls within one of the following two groups: the stakeholder model and the shareholder model. IFRS are based on a conceptual framework similar to the shareholder model which is found in common law countries (Barth et al. 2007) and therefore any study on the value relevance effects of the adoption of IFRS by a code law country inevitably involves a discussion of the code – law vs. common – law literature.

In countries that follow the stakeholder model the development of accounting standards is merely a state's affair. In these countries, usually referred as code - law countries, the stock exchange plays a minor only role in the financing of firms' activities; the banking system is the major source of external finance to firms. Governments impose the national accounting standards through legislation, usually after consultation with the major social partners (banks and other financial institutions, business associations, etc). Public disclosure is not of great importance and managers exercise greater discretion as to the items that are to be disclosed in the annual accounts (with or without the support of the government[4]).Additionally there is a strong link between financial reporting and

[3] Ali and Hwang (2000) provide evidence that these factors are strongly interrelated

[4] In Greece, for example, that is a code law country there was a boom in the Athens Stock Exchange (ASE) in 1998 – 1999 that was followed by a collapse in 1999 – 2000. Greek firms which had invested on shares listed on the ASE in 1998 – 1999 had to report huge losses in their

taxation. In fact, the fiscal authorities use information provided in the financial statements in order to determine taxable income (Alexander et al., 2007).

In countries that adopt the shareholder model the development of accounting standards is merely done by the professional bodies. In these countries, usually referred as common - law countries, the stock exchange plays a vital role in the financing of firms' activities and, therefore, public disclosure is of the up most importance. In these countries, managers are considered to exercise less discretion to the items that are to be disclosed in the annual accounts.

Many researchers tried to compare the value relevance of accounting numbers between code-law and common-law countries assuming that increased value relevance is an indication of better accounting quality. Most of them included in their sample United Kingdom and Germany as representative countries of the two ends of the shareholder-stakeholder spectrum respectively.

Alford et al (1993) examined the value relevance of earnings in 17 countries using USA as a benchmark. They reported that the value relevance of earnings (deflated by price) is higher in countries where the alignment between financial accounting and tax accounting is lower. This is turn suggests that earnings are more value relevant in countries that follow the Anglo-Saxon system in financial accounting (i.e. common law countries) than in code – law countries.

Joos and Lang (1994) using data from France, Germany and the United Kingdom reported significant differences in financial ratios and the stock market valuation of earnings (before extraordinary items), earnings changes and book value although they did not verify the results reported by Alford et al. (1993).

Harris et al. (1994), using data from Germany and the United States, reported that the overall value relevance of total reported earnings is almost the same for the two countries. The value relevance of book value, however, was significantly lower in Germany than in the UK.

King and Langli (1998) examined the value relevance of earnings and book value in Germany, Norway and the United Kingdom. They reported that German accounting numbers are less value relevant than the Norwegian accounting numbers while the UK accounting numbers exhibits the highest degree of value relevance. Book value, however, is more value relevant than earnings in Germany but less in the UK and Norway.

Ali and Hwang (2000), using a sample of 16 countries, find that the value relevance of earnings and book values is actually lower in bank oriented countries (as opposed to market oriented) with code law origin and high tax conformity. Moreover, when the private sector bodies are not involved in the standard setting process there is a reduced value relevance of accounting figures as well.

Arce and Mora (2002) examined the value relevance of earnings and book values in Belgium, France, Germany, Italy, The Netherlands, Switzerland, Spain

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annual accounts for 1999 and 2000 since they had to measure these investments at the lower between cost and market value. Responding to pressure from the business community, the government allowed the firms to capitalize these losses as an asset and amortize them over a three years period. The political justification for this exceptional treatment was that the collapse of the Athens Stock Exchange was an extraordinary event which, if shown in the income statement, would hide the true and fair view of the firms' financial performance.

and the UK. They concluded that earnings are more relevant than book value in common - law countries and vice versa in code – law countries. On aggregate, however, their findings do not support the proposition that earnings and book value, taken together, are more value relevant in common – law countries than in code – law countries.

The overall impression conveyed by the sum of the studies is that the results are mixed and a general conclusion can not be inferred about the value relevance and accounting quality between the two orientations. In addition, there are some theoretical and methodological criticisms for this area of research[5]. For instance, a main methodological issue is whether these studies succeed in taking into account variables that reflect the different pricing mechanisms and information environments across countries (Soderstrom and Sun, 2007). The results of these studies are therefore difficult to interpret due to a number of potential confounding effects arising in cross-country comparisons (Bartov et al 2005). The recent mandatory adoption of IFRS[6] is considered to be an excellent opportunity for comparing alternative accounting standards within a country eliminating such possible problems.

More recently, however, there is an emerging literature which highlights the importance of reporting incentives and institutional environment. Particularly, Hung (2001) investigates the value relevance of earnings and ROE in 21 countries and concludes that higher use of accrual accounting is beneficial only in countries with strong shareholder protection. Additionally, Ball et al., (2003) explore four East Asian countries where the accounting standards derive from common law sources implying higher reporting quality while the preparers' incentives are generally characterized as a variant of the code law model. They find that financial reporting quality is not higher than under code law standards. In a similar vein, Burgstahler et al. (2006) examine the impact of the different reporting incentives between the European private and public firms on the level of earnings management. As expected, they find that earnings management is more pervasive in private firms than in publicly traded firms. In addition, Daske et al. (2007a), using a sample of 26 countries, which were mandated to adopt IFRS, find that capital market benefits exist only in countries with strong reporting incentives. Finally, Daske et al. (2007b) investigate the economic consequences of voluntary IFRS adoption across 24 countries. Their results reveal that the IFRS adoption was beneficial (in terms of lower cost of capital and higher market liquidity) only to firms which exhibited a serious commitment. "Label" adopters did not actually better themselves. An important implication of this area of research is that importing an exogenously-set of accounting standards (as IFRS) will not necessarily change firms' actual reporting behavior in a material fashion (Ball, 2006). In such a case, the capital market benefits of adopting IFRS will be only modest. Stated it differently, if the preparers have no incentives to produce

[5] For a critical assessment and an evaluation of the value relevance research see Holthausen and Watts (2001) and Barth et al. (2001)

[6] While the voluntary adoprion of IAS by a large number of firms in some countries (i.e Germany) gave the opportunity to compare accounting quality in the pre and the post adoption period a main econometric issue in these studies is the self selection bias.

high quality financial reports then, no matter the quality of the standards, the quality of financial reporting will be low.

2.2 The Transition to IFRS

Empirical research on the improvement of financial statement quality[7] due to the adoption of IFRS can be categorized into two different groups: those that examined the effects of voluntary adoption of IFRS and those that examined the effects of mandatory adoption of IFRS.

Hung and Subramanyam (2007) examined the effect of the voluntary adoption of IFRS by German listed firms in the period 1998 – 2002. They reported that the adoption of IFRS did not improve the value relevance of book value or net income. However, they reported that book value (net income) is accorded a significantly larger (smaller) valuation coefficient under IFRS than under German General Accepted Accounting Principles (GAAP). This is consistent with IFRS reducing income persistence. They also examined the timeliness and asymmetric timeliness of income measured under IFRS and German GAAP. They reported that IFRS income is more conditionally conservative that the German GAAP since under IFRS economic losses is recognized in a timelier manner than under the German GAAP.

Bartov et al. (2005) examined the comparative value relevance among IAS, US and German accounting standards. In their sample they included, firstly, German firms that were listed on the Frankfurt Stock Exchange and followed the German GAAP and, secondly, German firms that were listed on either the Frankfurt Stock Exchange or the Neuer Markt and had switched voluntarily to US GAAP or IAS over the period 1998-2000. Using returns models they concluded that the value relevance of IAS and US based earnings is higher than that of German GAAP-based earnings suggesting higher accounting quality under an IAS or US accounting regime.

Barth et al (2007) examined whether application of IFRS is associated with higher accounting quality. They combined data from 21 countries that adopted the IFRS and reported that firms applying IFRS evidence less earnings management, more timely loss recognition and more value relevance of accounting figures.

Daske et al (2007a) examined the economic consequences of the introduction of mandatory IFRS reporting in 26 countries across the world and more specifically the effects on market liquidity, cost of equity capital and Tobin's Q. They reported that market liquidity and equity valuations increase around the time of the mandatory introduction of IFRS although the results for the cost of capital are mixed. They also report that the capital market benefits exist only in countries with strict enforcement regimes and institutional environments that provide strong reporting incentives. Moreover, the effects were weaker when

[7] Financial statements quality is perceived to be captured by a variety of ways such as measures of price-earning and/or book values association, earnings smoothing, timeliness, cost of capital, bid-ask spreads, market liquidity etc.

local GAAP are closer to IFRS, in countries with an IFRS convergence strategy, and in industries with higher voluntary adoption rates.

Christensen, Lee and Walker, (2007), examined the economic consequences (i.e. the short-run price reactions and the long-run changes in the cost of equity) of mandatory IFRS adoption in UK. They reported that mandatory IFRS adoption does not benefit all firms in a uniform way but results in relative winners and losers according to their willingness to adopt IFRS.

Schadewitz and Vieru (2007) explore the value relevance of the reconciliations imposed by IFRS in the Finnish Stock Market. Finland is usually perceived as a code law country with strong law enforcement. Using a sample of 86 firms and two price models they found that only the earnings reconciliations were positively value relevant. Equity reconciliations had either a negative coefficient or were statistically insignificant based on the model used.

Paananen (2008) explores whether the quality of financial reporting has increased in Sweden (a code law country) after the mandatory adoption of IFRS. Her analysis of accounting quality includes measures of earnings smoothing, timeliness and association to share prices. Unexpectedly, the results of all these measures suggest a decrease to the accounting quality of the IFRS adoption.

2.3 The Value Relevance of Income Components

According to the Earnings – Book Value Capitalization (EBVC) model it is only total reported earnings and book value that influence a share's price, i.e.

$$P_{it} = \alpha + \beta NI_{it} + cBV_{it} + e_{it}$$

where P_{it} is the market value of the equity at period t, NI_{it} is total reported accounting income, BV_{it} is the book value of equity, β is the earnings response coefficient (ERC), c is the book value response coefficient (BVRC) and e_{it} is the disturbance term.

Many researchers have argued, however, that non-recurring income items should not be accounted for as income because, if they are included in the model, the variability of the income series will increase and its predictive ability will be reduced (Brief and Peasnell, 1996). Along these lines, Ohlson (1999) divided accounting income to core income and transitory income and suggested that it is core income (together with book value) that is value relevant and not transitory income.

In the USA, empirical evidence provided by Lipe (1986) suggested that income components explain more of the variation of returns that is explained by earnings alone. Earnings disaggregation provides a small but significant amount of information that would be lost if only total earnings were reported. Ohlson and Penman (1992) and Fairfield et al (1996) provided similar findings.

In Europe, Ballas (1996 and 1999), Giner and Reverte (1999), and Hevas (2007) provided evidence that certain income components are priced differently than total reported income. As it usually happens with cross – sectional studies, however, the results reported were both country and time specific.

We build alone the line of those studies and examine whether the value relevance of income components increased after the adoption of IFRS. We

concentrate on three specific items, i.e. operating income, extraordinary income, financial income and income tax expense.

IFRS do not permit extraordinary income to be shown separately in the income statement while Greek Accounting Standards require that it is disclosed separately. Ballas (1996) reported circumstantial evidence that extraordinary income is priced differently than other income by Greek investors while Hevas (2007) reported that it does not have any informational content at all. Since extraordinary income is purely transitory in nature we want to test whether it is priced by investors or it is totally ignored in the valuation process as the theory asserts.

In Greece, any investment in the shares of another company was accounted for using the cost method, no matter whether it represented a long – term investment or it was held for trading purposes or it was an available for sale security. It follows that in the pre – IFRS period, financial income consisted of two main elements: the income realized from the sale of securities and the dividend income. Since 2005, firms are required to apply four different methods in accounting their investments in shares and the financial income shown in the income statement is a mixture of realized and unrealized income. In this study we test whether this new concept of financial income is of more value relevance to investors than the previous one.[8]

Until 2005, only the current tax liability was shown in the annual accounts of Greek firms. No deferred tax assets or deferred tax liabilities were recognized in them. Since 2005, Greek firms have to recognize the income tax expense in the income statement and deferred tax assets and deferred tax liabilities in the balance sheet in accordance with IAS 12. This is quite an important conceptual change for Greek investors and we want to test their reaction to this new piece of information.

2.4 Consolidated vs. Unconsolidated Statements

A question opens to debate is whether parent only accounts are more or less informative than consolidated accounts when the firm publishes both types of accounts. Surprisingly, the empirical evidence on this fundamental issue is still limited. Nevertheless, there are some studies that investigate the value relevance of consolidated versus unconsolidated financial statements. In Germany, Harris et al. (1994) reported that consolidation increases value relevance. In Finland, Niskanen et al. (1998) examined the information content of consolidated versus parent-only earning. They reported that consolidation improves the information content of earnings. In Greece, however, Hevas et al. (2000), using a sample of firms listed on the Athens Stock Exchange reported that the association of earnings and book value with share price is stronger if someone incorporates into the model the earnings and book value reported in the parent only accounts than the respective figures reported in the consolidated accounts. Finally, Abad et al.

[8] It is worth noting that in the post IFRS period many professional accountants in Greece refer to the dividend income as the true income all other financial income being an accounting handicraft.

(2000) provide clear evidence that consolidated information dominates non-consolidated or parent company information for Spanish firms.

As a consequence to this mixed and limited empirical evidence, we proceed further and investigate the IFRS adoption effect on the value relevance of both types of accounts.

3. Greek Accounting Standards vs. IFRS

In Table 1 we summarize the main differences between Greek Accounting standards (GAS) and IFRS.

Table 1: Major differences between Greek Accounting Standards & IFRS

Accounting Treatment	Greek Accounting Standards	IFRS
PPE	Revaluation not permitted	Revaluation permitted
Depreciation, Amortization & Depletion	Based exclusively on tax rules	The useful life of the asset must be estimated by the reporting entity
Financial Instruments	Lower of Cost or Market Value	Fair value measurement for certain types of investments
Inventory	1) LIFO permitted 2) Subsequent measurement at Lower between Historic Cost and Current Replacement Cost. The usage of the Net Realizable Value is permitted only if it is lower than the Current Replacement Cost; the latter should be lower than the Historic Cost.	1) LIFO not permitted 2) Subsequent measurement at Lower between Historic Cost and Net Realizable Value
Leases	Capitalization of financial leases is not permitted	Capitalization of financial leases is required if certain criteria are met
Goodwill arising from a purchase consideration	Negative Goodwill is not allowed	Negative Goodwill in included in the first period's income
Goodwill arising upon consolidation	Positive Goodwill may be either capitalized or offset against equity. It is amortized within a five years period. Negative Goodwill is shown on equity. In may be transferred to income if certain criteria are met.	Positive Goodwill is capitalized. Subsequently, it is subject to impairment test. Negative Goodwill is included in the first period's income
Pensions	Usually based upon the tax rules	The actuarial present value of promised retirement benefits should be recorded using either current or projected salary levels
R & D expenses	Certain expenses are capitalized.	Capitalized if certain criteria are met
Provisions	Recognized on the basis of prudent judgment by the management	Recognized when it is probable and it can be reasonably estimated
Extraordinary Income	Shown separately	Not shown separately

Start up costs	Recognized as an asset and amortized over 5 years	Expensed when incurred
Income Taxes	Deferred tax is not allowed	Deferred tax is required when certain conditions are met
Exchange Differences	Exchange gains are deferred until realized. Exchange differences associated with liabilities incurred in the acquisition or construction of assets are capitalized	Exchange gains and losses are recognized in the period in which they arise

The overall impression conveyed by the table 1 is that there are substantial differences between IFRS and Greek Accounting Standards (GAS) in the areas of recognition and measurement. GAS impose conservatism in the sense Belkaoui (1992) defined it (p. 246), i.e. "… the lowest values of assets and revenues and the highest values of liabilities and expenses should be reported." and "… the accountant display a generally pessimistic attitude when choosing accounting techniques for financial reporting". IFRS, on the other hand encourages the presentation of "a true and fair view" presentation of assets and liabilities on the balance sheet. Additionally, IFRS is independent of tax reporting considerations (Hung and Subramanyam, 2007) in contrast to GAS which is mainly tax driven. For example, under GAS, depreciation, amortization and depletion are determined exclusively by tax rules while under IFRS the estimated useful lives are used. Similarly, pensions are based on tax rules under GAS while IFRS requires the recognition of the actuarial present value of promised retirement benefits. Moreover, earnings smoothing flexibility is greater under GAS than IFRS. For instance, GAS allows the capitalization of start up costs and their amortization over a 5 years period while IFRS requires that they are expensed in the year they occur.

The gap between GAS and IFRS has been occasionally reported in the past research. Ding et al. (2007), using a sample of 30 countries, find that Greece gets the highest score in the "absence index". According to Ding et al., "the absence index" measures the differences between domestic accounting standards (DAS) and IAS as the extend to which the rules regarding certain accounting issues are missing in the DAS while they are covered in IAS[9]. They also find that absence is negatively related to the importance of the equity market and positively to ownership concentration. All in all, they argue that absence creates an opportunity for more earnings management and more pervasive earnings.

However, mandating IFRS is undoubtedly not enough to ensure less earnings management, higher value relevance and improved accounting quality. More specifically, table 1 reveals that IFRS adoption generally weakens the link between taxation and accounting rules and increases the use of fair values and accrual accounting. Greater use of accrual accounting and reduction of tax conformity implies a better matching of revenues and expenses and concurrently promotes the true and fair view of assets and liabilities. Reasonably, this should result to increased accounting quality. Nevertheless, there are also claims that increased use of accrual accounting means more opportunities for earnings management and accrual discretion, which in turn have a negative impact on

[9] This great distance between GAS and IAS is also documented in the study of Bae et al. (2008)

accounting quality (Hung, 2000). The outcome of this trade-off between the two effects described will actually determine whether the perception of accounting quality will eventually change.

Managerial propensity for accruals manipulation can be deterred and attenuated by an institutional environment that provides strong shareholder protection (Hung, 2000). In that case, accounting quality will probably increase. This assumption is empirically verified by Daske et al. (2007a) who find that the capital market benefits expected with the adoption of IFRS are present only in countries with strict enforcement regimes and in countries where the institutional environment provide incentives for more transparent accounting figures and efficient shareholder protection. Ball et al. (2003) argue that these conditions are generally met in countries usually classified as common law countries and shareholder oriented.

Greece, however, is generally considered as a code law country with a French civil law origin. More specifically, in 1835 the French commercial code was translated into Greek and adopted to serve as the basis for the Greek commercial law (Ballas, 1994). While during the years many amendments have been made, this law is still on the statute books. Due to the French-origin of the commercial law, Greece is distinguishable from other code law countries such as Germany or Finland and is usually classified to the French-origin code law countries cluster (La Porta et al. 1998). La Porta et al. (1998) and Djankov et al. (2006) provide strong evidence that this cluster of countries offers the weakest protection to shareholders in contrast to common law countries which offer the strongest. Furthermore, La Porta et al. (1998) argue that, while other code law origin clusters, such as Scandinavian and German-civil-law countries, have a strong system of legal enforcement as substitute for the weaker rules (compared to common law countries) the French family exhibit the weakest. The poor shareholders' protection combined with weak legal enforcement are usually associated with less developed capital markets and concentrated ownership (La Porta et al. 1997) which both imply a lower demand for high quality financial reporting.

Consistent with the above arguments, Leuz et al. (2003), using a sample of 31 countries, find that Greece is the country with the highest level of earnings management. Additionally they report that earnings management is negatively related to shareholders' rights and legal enforcement. As high quality reporting means low levels of earnings management (Barth et al. 2007), the above findings confirm, at least partially, the low quality of Greek financial statements and the unfavorable circumstances in the period before IFRS adoption. However, while the standards changed, bank orientation and concentrated ownership still exist. Moreover, there is no evidence of improvements in law enforcement and investor protection in the post adoption period (Kaufmann et al., 2007; www.doingbusiness.org).

To conclude, while one should fairly expect that the impact of IFRS adoption should be more obvious in countries where local GAAP and IFRS have a great distance each other (Daske et al. 2007a), it may be just modest if firms' incentives, as shaped by the institutional environment, are countervailing. Benefits

of mandatory IFRS adoption, instead of an adoption imposed by the market needs, are highly debatable. In Greece while the accounting principles changed considerably with IFRS adoption the underlying economic reality remained almost the same (bank orientation, concentrated ownership, poor shareholder protection, weak law enforcement). Based on the above analysis and the past research related to the Greek context, we are unable to make an ex-ante prediction whether the IFRS adoption had a profound impact to shareholders' perception of accounting quality and therefore we argue that empirical investigation is strongly recommended.

4. The Models

We will test whether the mandatory adoption of IFRS increased the value relevance of earnings and book value by testing the following equation:

$$P_{it} = a + + bBV_{it} + c\ NI_{it} + e_{it} \qquad (1)$$

Where,
P_{it} = the price of common stock i six months after fiscal year's end;
BV_{it}= the book value per share of firm i for fiscal year t;
NI_{it} = the net earnings per commonshare of firm i for fiscal year t;
e_{it} = the disturbance term

We estimate equation (1) with least squares, fixed year effects to allow for different constants across years. Also, consistent with previous literature, we correct for heteroscedasticity using White's (1980) heteroscedasticity-consistent covariance matrix. We examine whether the explanatory power of model (1), as it is measured by the adjusted coefficient of determination, increased in the post - IFRS period compared with that of the pre – IFRS period using both consolidated and unconsolidated data. When we compare the explanatory power between unconsolidated and consolidated data we perform tests suggested by Vuong (1989) to test for significance. Similarly, when we compare the explanatory power of equation (1) between the pre-IFRS and the post-IFRS period we perform Cramer's (1987) test to test for significance.

Moreover, we test whether disaggregating total reported net income to its major components, i.e., operating income, (OI_{it}), financial income, (FI_{it}), extraordinary income (EXT_{it}) and tax expense (T_{it}) increases the explanatory power of the EBVC model. Thus, we estimate the model described by equations (2) below and examine whether, firstly, the disaggregation of net income increased the explanatory power of model (1) in both the pre – IFRS and post – IFRS periods and, secondly, whether the response coefficients (RC) of the income components new variables have changed as a result of the adoption of the IFRS. To test for significant differences in the explanatory power between the two models we estimate Vuong's (1989) test in each period.

$$P_{it} = a + bBV_{it} + c_1 OI_{it} + c_2 FI_{it} + c_3 EXT_{it} + c_4 T_{it} + e_{it} \qquad (2)$$

Similarly with equation (1) we estimate equation (2) with least squares, fixed year effects to allow for different constants across years. Again, we also correct for heteroscedasticity using White's (1980) heteroscedasticity-consistent covariance matrix. Finally, we perform robustness tests by excluding all loss firms in our sample and repeating the tests.

5. The Sample

Our data cover the period 2003 till 2006, i.e. two fiscal years before the adoption of IFRS and the two fiscal years after their adoption. Earnings and book value data were hand collected from firms' annual reports and the site of the Athens Stock Exchange (www.ase.gr) while stock price data were collected from the daily press. We excluded from the sample all financial firms (i.e. banks, insurance companies, holding companies, etc) as well as firms whose shares were under suspension. We also excluded all firms that either did not report an income tax expense in their separate or their consolidated accounts. To facilitate comparison of results we also excluded from the sample all firms for which we could not collect the required data for all four years covered by this study for both consolidated and unconsolidated sub-samples. This gave us a sample of 112 firms for which all relevant data were available for all four years in both consolidated and unconsolidated accounts. We then eliminate as outliers the top and low one percent (1%) of the observations and then orthogonise again the sample. Thus, we ended up with a sample of 85 firms for which all relevant data from the separate accounts and consolidated accounts were available for all four years. This gave us a balanced sample of 170 firm years in the pre – IFRS period and 170 firm years in the post – IFRS period. In table 2 we present our sample composition according to the industry that each firm belongs.

Table 2: Sample composition by industry

Industry Description	Firms included
Oil and Gas	2
Chemicals	6
Basic Resources	10
Construction and Materials	6
Industrial Goods and Services	16
Food and Beverage	10
Personal and Household Goods	12
Health Care	5
Retail	4
Media	2
Travel and Leisure	5
Utilities	1
Technology	6
Total	85

Notes: Industry classification is based on ASE primary codes

6. The results

6.1 Unconsolidated vs. consolidated statements

We first compare the ability of both unconsolidated and consolidated net income and book values to explain contemporaneous market prices in both periods. To accomplish this, we estimate the EBVC model separately for each period and compare the respective explanatory powers. On Panel A of Table 3, we present the descriptive statistics regarding net income and book value for both consolidated and unconsolidated data for the pre-IFRS period while on panel B of Table 3 we report the respective statistics for the post-IFRS period.

Table 3: Descriptive statistics on prices, earnings and book values in the pre-IFRS and the post-IFRS adoption period (unconsolidated and consolidated data)

Panel A: Pre-IFRS period						
	Mean		Median		Std. Deviation	
N=170	unconsolidated	consolidated	unconsolidated	consolidated	unconsolidated	consolidated
P	3.590		2.235		4.040	
BV	2.443	2.389	2.008	1.845	1.929	2.024
	(0.82)		(0.43)		(0.53)	
NI	0.193	0.229	0.114	0.148	0.254	0.303
	(0.25)		(0.23)		(0.02)	
Panel B: Post-IFRS period						
	Mean		Median		Std. Deviation	
N=170	unconsolidated	consolidated	unconsolidated	consolidated	unconsolidated	consolidated
P	5.696		3.120		6.294	
BV	2.505	2.722	2.039	2.224	2.166	2.318
	(0.39)		(0.39)		(0.38)	
NI	0.227	0.304	0.118	0.167	0.392	0.476
	(0.11)		(0.05)		(0.01)	

Notes: The difference in means is based on pairwise t-tests. The difference in medians is based on Wilcoxon signed rank tests. The difference in standard deviation is based on F-tests. Two-tailed p-values are in parentheses.
Variable definitions: P is market price per share six months after year end, BV is book value of equity per share at year end, NI is net income per share at year end

We notice that in both periods the differences in means and medians of net income and book values are insignificant. This result is contrary to our expectations of significant differences in the pre-IFRS period as a result of the cost method applied in unconsolidated accounts. While the relative p-value seems to be lower for net income in the post-IFRS period, the differences in means and medians are still insignificant. However, we find significant differences in standard deviation of net income in both periods and actually that consolidated net income is more volatile than unconsolidated net income.

On table 4 (panel A to panel D) we report the univariate correlations of the three variables used in EBVC model. Pearson (Spearman's) correlations are depicted above (below) the diagonal of each panel.

Table 4: Pearson (Spearman's) correlations, above (below) the diagonal

Panel A: Pre-IFRS Adoption (Unconsolidated Data)				**Panel B:** Post-IFRS Adoption (Unconsolidated Data)			
	P	BV	NI		P	BV	NI
P	1	0,217**	0,611**	P	1	0,340**	0,684**
BV	0,332**	1	0,457**	BV	0,573**	1	0,590**
NI	0,625**	0,375**	1	NI	0,658**	0,497**	1
Panel C: Pre-IFRS period (Consolidated Data)				**Panel D:** Post-IFRS Adoption (Consolidated Data)			
	P	BV	NI		P	BV	NI
P	1	0,174*	0,750**	P	1	0,389**	0,804**
BV	0,311**	1	0,426**	BV	0,640**	1	0,564**
NI	0,638**	0,458**	1	NI	0,721**	0,591**	1

Notes: **. Correlation is significant at the 0.01 level, *. Correlation is significant at the 0.05 level
Variable definitions: P is market price per share six months after year end, BV is book value of equity per share at year end, NI is net income per share at year end

The results reported on Table 4 indicate that, from the four pairs of net income and book value (i.e. consolidated vs. unconsolidated and pre – IFRS vs. post – IFRS figures), it is consolidated net income and consolidated book value in the post – IFRS period that exhibit the higher degree of association with share prices. Another interesting point is that in the pre – IFRS period unconsolidated book value is more correlated with share prices than consolidated book value. Moderate correlation coefficients are also observed between net income and book value in both sets of data. This result indicates the existence of collinearity. For this reason, the condition index suggested by Belsley et al. (1980) was calculated for each equation in order to examine the presence of multicollinearity. The values obtained are generally low suggesting the absence of multicollinearity. Therefore, we proceed further in multivariate regressions. Table 5 reports the results of the regressions of prices on net income and book value for unconsolidated and consolidated accounts in each period.

Table 5: LS results

$$P_{it} = a_1 + b_1 BV_{it} + c_1 NI_{it} + e_{it}$$

	Pre-IFRS Adoption		Post-IFRS Adoption	
N=170	unconsolidated	consolidated	unconsolidated	consolidated
Intercept	1.937*** (4.359)	1.838*** (6.450)	3.433*** (5.099)	2.918*** (5.247)
BV	-0.249 (-1.273)	-0.344** (-2.227)	-0.112 (-0.387)	-0.223 (-0.895)

NI	12.218*** (8.410)	11.137*** (9.927)	10.700*** (7.244)	11.122*** (8.501)
R^2adj	46.0%	60.5%	45.3%	66,0%
R^2adj difference		14.5% (p<0.01)		20.7% (p<0.01)
F-stat	49.09	87.43	47.65	110.713

Notes: ***Significant at 1% level, **Significant at 5% level, *Significant at 10% level. The tests in adjusted R^2 are based on Vuong tests (Vuong, 1989)
Variable definitions: P is market price per share six months after year end, BV is book value of equity per share at year end, NI is net income per share at year end

The results reported on table 5 suggest that, firstly, consolidated net income and consolidated book value are more value relevant than their unconsolidated counterparts, secondly, that the adoption of IFRS increased the value relevance of consolidated earnings and book value by almost six (6) percentage units and, thirdly, that the adoption of IFRS reduced the value relevance of unconsolidated earnings and book value by almost one (1) percentage unit. Thus, we can conclude that IFRS are perceived by investors in the Athens Stock Exchange as being of higher quality. Looking, however, to the values of the individual estimated response coefficients we notice that while the estimated ERC for the post – IFRS period is the same with that estimated for the pre – IFRS period, consolidated book value is statistically insignificant in the post – IFRS period. To summarize our results, we find strong evidence that consolidated figures are more value relevant than unconsolidated ones in both periods which we examine and this is mainly attributed to net income. The superiority of consolidated accounts versus unconsolidated accounts to explain contemporaneous prices is also more pronounced after IFRS adoption. Therefore the rest of the section is concerned only with consolidated data.

In order to explore further these findings, we decompose the total explanatory power of the EBVC model as[10]:

$$R^2total = incrR^2NI + incrR^2BV + R^2common \quad (3).$$

Where
R^2total = the total explanatory power of the EBVC model
$incrR^2NI$ = the incremental explanatory power of net income on book value
$incrR^2BV$ = the incremental explanatory power of book value on earnings
$R^2common$ = the explanatory power common to earnings and book values

[10] The above decomposition was suggested by Theil (1971) and was already used by previous researchers in this area (Joos, 1997; King and Langli, 1998; Arce and Mora, 2002).

Incremental explanatory power of net income is the total explanatory power of equation (1) less the explanatory power of book value alone which is obtained by the following equation:

$$P_{it} = \alpha_0 + \gamma_1 BV + e_{it} \quad (4)$$

Similarly, incremental explanatory power of book value is the total explanatory power of equation (1) less the explanatory power of earnings alone which is obtained by the following equation:

$$P_{it} = \alpha_0 + \beta_1 NI + e_{it} \quad (5)$$

Table 6 depicts the respective results.

Table 6: Incremental explanatory power of earnings and book value

$P_{it} = a_1 + + b_1 BV_{it} + c_1 NI_{it}$	Pre-IFRS	Post-IFRS
Incremental R^2 (NI)	58.2%	48.2%
Incremental R^2 (BV)	2.3%	0.2%
R^2 (common)	0%	17.6%
R^2 total	60.5%	66%

Variable definitions: P is market price per share six months after year end, BV is book value of equity per share at year end, NI is net income per share at year end

According to the reported results, despite the increase in the overall explanatory power of the model, the incremental explanatory power of both earnings and book value decreased significantly after the adoption of IFRS. The overall explanatory power of the EBVC model increased due to a significant increase of the common explanatory power of the two accounting items, suggesting that net income and book value function as complements each other after IFRS adoption. Stated it differently, the incremental information of net income over and above book value has been reduced while the interaction between them plays now a significant role.

6.2 The Benefits from Disaggregating Reported Net Income

In the previous paragraph we reported that although accounting quality (measured by the explanatory power of the EBVC model) was improved as a result of the mandatory adoption of IFRS, this improvement is due to the interaction of net income and book value and not to an increase in the incremental information content of either consolidated net income or consolidated book value. To investigate this issue more thoroughly we decomposed net income into operating, financial and extraordinary income and tax expense and estimated the regressions again. With respect to extraordinary income, since it is not reported

under IFRS, we went through the notes to the annual accounts of the firms in our sample and we noticed that since 2005 all extraordinary income items are included in the "Other Income" item of the income statement. Thus, we approximated extraordinary income (in the pre – IFRS period) with other income (in the post – IFRS period). On Table 7 we report descriptive statistics for all variables used and compare means, medians and standard deviations between the two periods.

Table 7: Descriptive statistics (consolidated data)

	Mean		Median		Std. Deviation	
N=170	Pre-IFRS	Post-IFRS	Pre-IFRS	Post-IFRS	Pre-IFRS	Post-IFRS
P	3.5701	5.696	2.235	3.200	3.986	6.282
	(0.00)		(0.00)		(0.00)	
BV	2.389	2.722	1.845	2.224	2.024	2.318
	(0.05)		(0.11)		(0.08)	
NI	0.229	0.304	0.148	0.167	0.303	0.476
	(0.02)		(0.32)		(0.00)	
OI	0.4862	0.4873	0.335	0.319	0.463	0.578
	(0.97)		(0.35)		(0.00)	
FI	-0.071	-0.054	-0.063	-0.069	0.105	0.197
	(0.32)		(0.89)		(0.00)	
EXT	-0.002	0.052	0.002	0.032	0.094	0.176
	(0.00)		(0.00)		(0.00)	
T	-0.130	-0.150	-0.070	-0.085	0.151	0.182
	(0.00)		(0.19)		(0.01)	

Notes: The difference in means is based on pairwise t-tests. The difference in medians is based on Wilcoxon signed rank tests. The difference in standard deviation is based on F-tests. Two-tailed p-values are in parentheses.
Variable definitions: P is market price per share six months after year end, BV is book value of equity per share at year end, NI is net income per share at year end, FI is financial income per share at year end, EXT is extraordinary (or other income) per share at year end, T is tax expense per share at year end

From the figures listed on Table 7 we notice that although the mean net income and book value increased as a result of the adoption of IFRS, this change is attributed to extraordinary income and tax expenses.[11] The mean operating income and the mean financial income does not present any statistically significant change between the two periods. Furthermore, all standard deviations are statistically higher in the post – IFRS period which is an indication that the respective accounting figures have become more volatile.

On Table 8 we report univariate correlations among all variables.

[11] In the post – IFRS period, extraordinary income is shown under the heading "Other Income".

Table 8: Pearson (Spearman's) correlations, above (below) the diagonal

Panel A: Pre-IFRS adoption period (consolidated data)							
	P	NI	BV	T	FI	EXT	OI
P	1	0,750**	0,174*	-0,604**	0,325**	0,020	0,668**
NI	0,638**	1	0,426**	-0,605**	0,317**	-0,050	0,859**
BV	0,311**	0,458**	1	-0,403**	-0,082	-0,286**	0,592**
T	-0,553**	-0,500**	-0,206**	1	-0,210**	0,138	-0,822**
FI	0,105	0,035	-0,337**	-0,114**	1	-0,150	0,120
EXT	-0,109	-0,061	-0,002	0,029**	-0,131	1	- 0,283**
OI	0,660**	0,886**	0,510**	-0,613**	-0,129	-0,192*	1
Panel B: Post-IFRS adoption period (consolidated data)							
	P	NI	BV	T	FI	EXI	OI
P	1	0,804**	0,389**	-0,732**	0,095	0,242**	0,776**
NI	0,721**	1	0,564**	-0,769**	0,341**	0,227**	0,867**
BV	0,640**	0,591**	1	-0,586**	0,106	0,161*	0,554**
T	-0,656**	-0,683**	-0,514**	1	-0,080	-0,234**	-0,845**
FI	-0,142	-0,070	-0,257**	0,116	1	0,000	0,019
EXT	0,188*	0,252**	0,214**	-0,151*	-0,145	1	-0,049
OI	0,705**	0,811**	0,576**	-0,810**	-0,309**	-0,015	1

Notes: **. Correlation is significant at the 0.01 level, *. Correlation is significant at the 0.05 level
Variable definitions: P is market price per share six months after year end, BV is book value of equity per share at year end, NI is net income per share at year end, FI is financial income per share at year end, EXT is extraordinary (or other income) per share at year end, T is tax expense per share at year end

As expected, we find the estimated correlations among most of the independent variables and share price are statistically significant and with the expected sign. However, market price is most highly correlated with net income in each period we examine. Moderate correlation coefficients are also observed between the additional independent variables of our study. Again, we estimated the condition index suggested by Belsley et al. (1980) and again we obtained low values suggesting the absence of multicollinearity. On Table 9 we report the results obtained for the disaggregated model and we repeat the results of the aggregate model to facilitate comparisons.

Table 9: LS results

	$P_{it} = a_1 + + b_1 BV_{it} + c_1 NI_{it}$		$P_{it} = a_1 + b_1 BV_{it} + c_1 OI_{it} + c_2 FI + c_3 EXT_{it} + c_4 T + e_{it}$	
N=170	Pre-IFRS	Post-IFRS	Pre-IFRS	Post-IFRS
Intercept	1.838*** (6.450)	2.918*** (5.247)	1.808*** (4.345)	1.778*** (3.632)
BV	-0.344** (-2.227)	-0.233 (-0.895)	-0.475** (-2.185)	-0.395* (-1.656)
NI	11.137*** (9.927)	11.122*** (8.501)		

OI			7.824*** (5.769)	9.016*** (8.292)
FI			9.509*** (2.483)	2.709 (1.521)
EXT			10.188*** (2.436)	10.456*** (5.846)
T			1.652 (0.491)	-1.326 (-0.331)
$R^2_{adj.}$	60.6%	66.0%	60.7%	70.3%
$R^2_{adj.}$ preIFRS-postIFRS		5.4% (p<0.10)		9.7% (p<0.05)
R^2_{adj} Dis-Aggr			0.1% (p>0.1)	4.3% (p<0.05)
F-stat	87.43	110.71	44.37	67.75
Wald test (c_1=c_2)			0.64	0.00
Wald test (c_1=c_3)			0.58	0.29
Wald test (c_2=c_3)			0.86	0.00

Notes: ***Significant at 1% level, **Significant at 5% level, *Significant at 10% level. The tests in adjusted R^2 between the pre-IFRS and the post-IFRS period are based on Cramer tests (Cramer, 1987). The tests in adjusted R^2 between the disaggregated and the aggregated model are based on Vuong tests (Vuong, 1989). P-values are reported for Wald-tests.
Variable definitions: P is market price per share six months after year end, BV is book value of equity per share at year end, NI is net income per share at year end, OI is operating income per share at year end, FI is financial income per share at year end, EXT is extraordinary income per share at year end, T is tax expense per share at year end

In contrast with previous literature we observe that the explanatory power of the disaggregated model is higher than the aggregated one only in the post-IFRS period[12]. In the first period there is not actually any benefit of disaggregating net income. Wald tests performed confirm that the response coefficients of the various income components are all equal among each other, with the exception the tax response coefficient which is different but insignificant. Moreover, we noticed that the explanatory power of the disaggregated model increased after IFRS adoption (a result similar to that obtained for the basic model) but the book value coefficient remained significant albeit negative. A striking result is that although the response coefficients of OP and EXT are not statistically different after IFRS adoption, the response coefficient of the FI decreased and turned insignificant. Additionally, the response coefficient of the T variable remained statistically insignificant in the post-IFRS period. To further explore these results, we estimate the incremental explanatory power of each component for both periods to observe possible changes. The estimation procedure is similar to the previous analysis regarding the aggregated model.

[12] Vuong test confirms that this difference is statistically significant

Table 10: Incremental explanatory power of book value and earnings components

$P_{it} = a_1 + b_1BV_{it} + d_1 OI_{it} + f_1FI + g_1 EXT_{it} + h_1T + e_{it}$	Pre-IFRS	Post-IFRS
Incremental R^2 (BV)	3.3%	1.2%
Incremental R^2 (OI)	19.4%	14.5%
Incremental R^2 (FI)	5.5%	0.6%
Incremental R^2 (EXT)	4.8%	6.1%
Incremental R^2 (T)	0%	0%
R^2 (common)	27.7%	47.9%
R^2 total	60.7%	70.3%

Variable definitions: P is market price per share six months after year end, BV is book value of equity per share at year end, NI is net income per share at year end, OI is operating income per share at year end, FI is financial income per share at year end, EXT is extraordinary income per share at year end, T is tax expense per share at year end

The results that are presented on Table 10 confirm a significant decrease in the incremental explanatory power of financial income in the post-IFRS period while the incremental explanatory power of tax expense remained zero. These finding cast doubt whether specific IFRS concerning the measurement of these components (such as IFRS 12 and 39) were actually beneficial. Consistent with the preceding analysis, we also find that the common explanatory power of book value and net income components increased with IFRS adoption as also did the total explanatory power of the model.

6.3 Robustness test

A potential problem with our sample is that we have pooled profit and loss firms together. There is strong evidence in past research suggesting that ERCs for loss firms is generally not significantly different from zero and in many cases they are negative (Jan and Ou, 1995; Kothari and Zimmmerman, 1995; Burgstahler and Dichev, 1997). Thus, when profitable and loss firms are pooled together the estimated ERCs are biased downwards. Furthermore, the incorporation of book value as an additional explanatory variable mitigates this problem only partially (Collins et al., 1999). Therefore, we exclude loss firms from our sample and repeat our analysis. This let us with 64 firms or 128 firm-year observations in each period. Results are depicted on table 11.

Table 11: LS results when loss firms are excluded from the sample

	$P_{it} = a_1 + + b_1BV_{it} + c_1 NI_{it}$		$P_{it} = a_1 + b_1BV_{it} + c_1 OI_{it} + c_2FI + c_3EXT_{it} + c_4T + e_{it}$	
N=128	Pre-IFRS	Post-IFRS	Pre-IFRS	Post-IFRS
Intercept	1.532***	3.309***	1.694***	2.019***
	(4.397)	(5.340)	(3.865)	(4.006)
BV	-0.420**	-0.460**	-0.656**	-0.602*
	(-2.500)	(-1.930)	(-2.875)	(-2.683)
NI	12.280***	12.105***		
	(11.600)	(8.501)		

OI			10.018*** (6.997)	11.298*** (8.401)
FI			9.838** (2.429)	3.638*** (2.819)
EXT			12.243** (2.253)	13.293*** (6.777)
T			6.009 (1.408)	-4.718 (-0.927)
$R^2_{adj.}$	62.4%	67.4%	63.8%	72.2%
$R^2_{adj.}$ preIFRS-postIFRS		5.4% ($p<0.1$)		8.4% ($p<0.05$)
$R^2_{adj.}$ Dis-Aggr			1.4% ($p>0.10$)	4.8% ($p<0.05$)
F-stat	71.39	88.35	38.43	55.86
Wald test ($c_1=c_2$)			0.96	0.00
Wald test ($c_1=c_3$)			0.67	0.13
Wald test ($c_2=c_3$)			0.57	0.00

Notes: ***Significant at 1% level, **Significant at 5% level, *Significant at 10% level. The tests in adjusted R^2 between the pre-IFRS and the post-IFRS period are based on Cramer tests (Cramer, 1987). The tests in adjusted R^2 between the disaggregated and the aggregated model are based on Vuong tests (Vuong, 1989). P-values are reported for Wald-tests.
Variable definitions: P is market price per share six months after year end, BV is book value of equity per share at year end, NI is net income per share at year end, OI is operating income per share at year end, FI is financial income per share at year end, EXT is extraordinary income per share at year end, T is tax expense per share at year end

Consisted with prior literature, we find that the estimated response coefficients have increased in all cases. More specifically, the response coefficient of the FI variable although it still exhibits a decrease in the post IFRS period, albeit it turns now marginally significant. The overall explanatory power of the models is slightly higher compared to the pooled sample but still exhibits the same pattern between the two periods. Thus, these results do not actually alter our impression of the preceding analysis.

Finally, we estimated our models using OLS without imposing fixed year effects (untabulated results). While, R^2 was slightly lower in all cases we did not observe any important differences.

7. Summary and conclusions

In this study we tested the effect of the mandatory adoption of IFRS upon the value relevance of earnings and book values. In order to carry out our empirical tests we used data from the Athens Stock Exchange that covered a period of two years before and two years after the mandatory adoption of IFRS. Greece is generally considered as a code-law country with strong tax conformity,

bank orientation (La Porta et al., 1997) and conservative accounting rules which have a negative effect on the value relevance of financial statements. As IFRS adoption promotes fair value accounting and weakens the link between taxation and accounting rules we expect earnings and book value to become more value relevant ceteris paribus. On the other hand, the well documented weak investor protection in Greece (La Porta et al., 1998; Djankov et al., 2006; Kaufman et al., 2007) and the great propensity of managers to manipulate earnings (Leuz et al., 2003) cast doubt on the expected benefits of IFRS implementation. Therefore, we avoid making any ex-ante prediction whether the IFRS adoption had a profound impact on the value relevance of financial statements and proceed with empirical analysis. We find that IFRS adoption positively affected the value relevance of consolidated net income and book value but it had no effect on their unconsolidated counterparts. We report that consolidated accounting numbers are by far more value relevant than unconsolidated ones in both periods and, unexpectedly, this superiority is more pronounced after IFRS adoption. Therefore, we proceed our analysis with consolidated data and examine the value relevance of earnings and book value in the pre-IFRS and the post-IFRS period. While, we actually find an increase in the overall explanatory power of the EBVC model, we also detect a dramatic decrease in the incremental explanatory power of earnings. Thus, we proceed further and decompose net income into its components to observe any possible changes. In contrast to prior research, our results reveal that the disaggregated model outperforms the aggregated one only in the post-IFRS period. More importantly, we notice a significant decrease in the response coefficient and the incremental explanatory power of financial income after mandating IFRS. Additionally, tax expense was insignificant in both periods.

The last findings question the expected benefits of specific IFRS rules concerning the measurement of these earnings components. Nevertheless, supposing that the total impact of IFRS adoption is captured by the overall explanatory power of the models, which actually increased, we conclude that mandating IFRS may prove beneficial even in an unfavorable context.

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