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Ioannis Tsalavoutas, Paul André, Lisa Evans

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## **Transition to IFRS and value relevance in a small but developed market: A look at Greek evidence**

\*Ioannis Tsalavoutas, Lecturer in Accounting, The University of Stirling

Department of Accounting and Finance, Stirling, FK9 4LA, Scotland,  
E-mail address: [Ioannis.Tsalavoutas@stir.ac.uk](mailto:Ioannis.Tsalavoutas@stir.ac.uk), Tel.: +44 (0) 1786 467 284.

Paul André, Professor of Accounting and Management Control,  
ESSEC Business School, Paris

Department of Accounting and Management Control Av. Bernard Hirsch, B.P. 50105,  
95105, Cergy Pontoise Cedex, France, E-mail address: [andre@essec.fr](mailto:andre@essec.fr)

Lisa Evans, Professor of Accounting, The University of Stirling

Department of Accounting and Finance, Stirling, FK9 4LA, Scotland,  
E-mail address: [Lisa.Evans@stir.ac.uk](mailto:Lisa.Evans@stir.ac.uk), Tel.: +44 (0) 1786 467 288.

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\*Correspondence or enquiries should be addressed to Ioannis Tsalavoutas, University of Stirling, Department of Accounting and Finance, Stirling, FK9 4LA, Scotland, E-mail address: [Ioannis.Tsalavoutas@stir.ac.uk](mailto:Ioannis.Tsalavoutas@stir.ac.uk), Tel.: +44 (0) 1786 467 284.

## **Transition to IFRS and value relevance in a small but developed market: A look at Greek evidence**

### **Abstract**

We examine the value relevance of accounting fundamentals after the mandatory transition to IFRS in Greece. We find no significant change in the value relevance of book value of equity and earnings between the 2004 pre IFRS and 2005 post IFRS periods and conclude that the accounting framework is not in itself sufficient for changing market participants' perception about value relevance of accounting information. However, market participants viewed the extra information provided by reconciliations between Greek GAAP and IFRS for 2004 figures as incrementally value relevant. Specifically, this applied to adjustments resulting from standards curtailing previous creative accounting practices and was mainly driven by firms with lower reporting quality (smaller firms and firms with non-‘Big 4’ auditors).

**Key words:** Value relevance, IFRS implementation, Greece, creative accounting, firm size, audit quality.

## 1. Introduction

Since January 1<sup>st</sup> 2005 EU publicly traded companies are required to prepare consolidated accounts on the basis of International Financial Reporting Standards (IFRS)<sup>1</sup>. However, the possibility of the uniform application of IFRS across different jurisdictions has been questioned because of differences in compliance and enforcement mechanisms as well as different cultural and institutional backgrounds (Ball, 2006; Nobes, 2006; Larson and Street, 2004; Soderstrom and Sun, 2007; Zeff, 2007).

The present paper explores the impact of transition to IFRS on accounting quality in an in-depth case study of Greece. Greece offers an interesting setting because of its distinctive financial reporting regime and socio-economic context (see below). Additionally, a single-country case study approach allows us to control for institutional and political factors which affect companies' reporting and stock market participants' investing behaviours in an international comparative study.

In accordance with the extant literature and the assumption that investors process reported information for making investment decisions, we consider the association between book and market values (value relevance) as one important dimension of accounting quality (Paananen *et al.*, 2005; Horton and Serafeim, 2008; Lang *et al.*, 2003; Barth *et al.*, 2007). As a result of IFRS implementation, 2004 financial statements were produced under national GAAP and 2005 financial statements under IFRS. This provides a unique opportunity for examining the

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<sup>1</sup> Regulation (EC) No 1606/2002 of the European Parliament and of the Council of 19 July 2002. International Accounting Standards (IAS) were issued by the International Accounting Standards Committee (IASC) and adopted in 2001 by the restructured International Accounting Standards Board (IASB), which has since been amending or replacing them with IFRS.

accounting quality, and any changes to this quality, before and after the adoption of IFRS.<sup>2</sup>

Additionally, IFRS 1 ('First-time adoption of International Financial Reporting Standards') requires reconciliation statements explaining how the transition from previous GAAP to IFRS affected companies' financial statements. It is expected that investors would evaluate the new information provided in the reconciliation statements. Accordingly, we test whether the information reported within those documents was incrementally value relevant.

We address three research objectives. In the first section, we examine the change in the relationship between market values and reported figures before and after the adoption of IFRS by Greek listed companies (relative value relevance of 2004 Greek GAAP<sup>3</sup> vs. 2005 IFRS figures). In the second section, we explore whether adjustments to shareholders' equity, resulting from the adoption of specific IFRS which curtail previous creative accounting practices, are incrementally value relevant to 2005 book values. At the same time we explore the potential influence of the particular characteristics of the Greek context as follows: we examine whether the relative and incremental value relevance differ across different sub-samples determined by proxies that may affect the perceived quality of the available information, namely firm size and audit quality ('Big 4' and non-'Big 4' auditor).

Our findings make the following contributions to the literature: *First*, examining whether accounting quality changes as a result of switching accounting

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<sup>2</sup> Other researchers have examined other economic consequences and aspects of accounting quality including market liquidity, cost of equity, Tobin's Q, and earnings management (see Daske *et al.*, 2007, Christensen *et al.*, 2008 and Capkun *et al.*, 2008).

<sup>3</sup> By Greek GAAP is meant codified accounting rules, in particular Law 2190/20 and Presidential Decree (PD) 186/92 (Tax Law-known also as Code of Books and Records) and pronouncements of the Committee of Accounting Standardisation and Auditing (ELTE).

requirements is particularly relevant to standard setters who should ‘be interested in the results of a study of the relative stock price associations of alternative accounting earnings or book value of equity measures’ (Holthausen and Watts, 2001: 11). *Second*, examining the incremental value relevance of the information provided in the reconciliation statements explores the usefulness of the required transitional reconciliations as an indication of the market’s ‘evaluation’ of this new information. *Third*, by testing these issues in the particular stakeholder and tax driven accounting environment of Greece, we contribute to the debate on whether shareholder-focused accounting principles are more value relevant than the traditional extensive and complex continental European accounting regulations. *Fourth*, we contribute to the identification of factors which may affect value relevance of accounting information (i.e. firm size and audit quality) in Greece.

Our results can be summarised as follows. We identify no significant change in the value relevance of book value of equity and earnings between the 2004 pre IFRS and 2005 post IFRS periods. This result holds across different sub-samples partitioned by audit quality and firm size which proxy for reporting quality. However, we find that the market continues to give more weight to earnings of large firms and of firms having ‘Big 4’ auditors after the change to IFRS. Our results suggest that the change in accounting standards is not a sufficient condition for changing the market participants’ perception about the value relevance of the accounting information.

Additionally, decomposition of the 2005 post IFRS numbers to capture the reconciling items from the 2004 pre IFRS numbers reveals that market participants viewed this information as incrementally value relevant. In particular, we examine the adjustments resulting from IAS 19 (Employee Benefits), IAS 38 (Intangible Assets) and the aggregate impact of IAS 32 and IAS 39 (Financial Instruments). All of these

adjustments are value relevant for small firms. In contrast, for large firms only the aggregate adjustment of IAS 32 and IAS 39 is value relevant. None of the adjustments are incrementally value relevant for companies with 'Big-4' auditors whereas the aggregate adjustment of IAS 32 and IAS 39 is value relevant for firms with non-'Big 4' auditors. It is also interesting that investors appear to be reversing the expensing of start-up and research costs imposed by IAS 38, i.e., recapitalising these costs for the smaller growth-type firms.

The remainder of the paper is organised as follows: Section 2 provides the background to the study by reviewing prior literature and the Greek accounting environment. In section 3 the research hypotheses are introduced. Section 4 describes the research design and the data employed. Section 5 provides the empirical findings and section 6 forms the concluding remarks.

## **2. Background**

### *2.1 IFRS and value relevance<sup>4</sup>*

Prior empirical studies that compare the quality of IFRS financial statements to national GAAP financial statements have reported inconsistent and mixed findings. These studies can be classified into three broad categories: pre 2005 IAS/IFRS adoption in national contexts; pre and post 2005 IAS/IFRS adoption in several countries and 2005 mandatory IFRS adoption studies on a single country level.

In the first category are studies exploring the value relevance of IAS/IFRS accounting measures relative to local GAAP (including US GAAP) numbers prior to

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<sup>4</sup> We acknowledge that there are several studies (for further references see Chan and Seow, 1996) which examine value relevance of accounting measures produced under national GAAP and US GAAP but they are outside the scope of this research and therefore are not discussed herein.

the 2005 mandatory adoption of the former in the EU. Harris & Muller (1999) use a sample of companies reporting under IFRS in their home country which, because they are also listed in the US, had to publish Form 20-F reconciliation statements. They find ‘limited evidence that reconciliations to US-GAAP, even under IAS, provide useful information to the market’ (Harris and Muller, 1999: 309) as both IAS earnings and book values of equity are value relevant.

With reference to China, Eccher & Healy (2001: 27) find that ‘IAS financial reports do not provide material benefits to either international or domestic investors over local Chinese standards’. The finding is also confirmed by Lin & Chen (2005) with reference to IAS earnings reconciliations. However, Sami & Zhou (2004: 424) find that ‘the accounting information in the capital market where IFRS statements are produced is more value relevant’.

A number of authors have examined the case of Germany, including Leuz (2003), Bartov *et al.* (2005), Daske (2006), Beckman *et al.* (2007), and Hung & Subramanyam (2007). The latter conclude, *inter alia*, that:

‘(2) book value (net income) plays a more (less) important valuation role under IAS than under HGB<sup>5</sup>, although there is no evidence suggesting that IAS has improved the relative value relevance of book value and net income; (3) the IAS adjustments to book value are value relevant, while the adjustments to net income are value irrelevant’ (Hung and Subramanyam, 2007: 652).

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<sup>5</sup> *Handelsgesetzbuch* – the German commercial code.



No improvement in the relative value relevance of book value of shareholders' equity under IFRS has also been reported by Schiebel (2006) who found that equity book values under German GAAP revealed higher value relevance. As far as earnings are concerned, Bartov *et al.* (2005) find higher value relevance of IAS earnings over those prepared under German GAAP<sup>6</sup>. One could argue that the contradictory and mixed findings may derive from the fact that, at that time, IFRS were adopted on a voluntary basis by companies. Voluntary adoption was associated with a high incidence of non-compliance or incomplete compliance (Cairns, 2001 and Street and Gray, 2001) which may have negatively affected investors' perceptions of the accounting measures produced under IFRS. (This argument does not hold for the above Chinese studies because IFRS accounts were mandatory for the companies in question).

Niskanen *et al.* (2000) examine the reconciliations, between 1984 and 1992, of 18 Finnish companies which disclosed both local GAAP and IFRS earnings. They find that the bottom line reconciliation to IFRS is not significant whilst individual components of the aggregate reconciliation relating to untaxed reserves and consolidation differences are value relevant.

The second category of studies includes those of Horton & Serafeim (2007), Daske *et al.* (2007), Platikanova & Nobes (2007), Capkun *et al.* (2008) and Clarkson *et al.* (2008). These studies look at the impact of mandatory IFRS across a large subset of EU countries. Daske *et al.* (2007) and Platikanova & Nobes (2007) find that capital market benefits from IFRS depend on countries' institutional environments. More specifically, Horton & Serafeim (2007) find that UK, French and Italian

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<sup>6</sup> The authors compare also the difference in the value relevance between IFRS and US GAAP earnings and conclude there is no significant difference.

companies' earnings reconciliations are incrementally value relevant, but not those of Spanish companies. Capkun *et al.* (2008) find that the bottom line adjustments of IFRS earnings are value relevant, but not those on book value of equity. Clarkson *et al.* (2008) find minor changes to value relevance for code law countries and a decrease in common law countries.

The third stream of studies comparing the accounting quality of IFRS versus national GAAPs examines this issue on a single country level after mandatory IFRS adoption. Callao *et al.* (2007) report no improvement in Spanish reporting quality after IFRS adoption (in line with Horton and Serafeim (2007), see above). Paananen *et al.* (2005) conclude that the accounting quality increases in Sweden after the adoption of IFRS as the association of book values and share prices increases significantly after the switch. Additionally, they find an increase in the incremental value relevance of both measures. Horton & Serafeim (2008) explore the value relevance of IFRS relative to UK GAAP using the IFRS reconciliation statements provided within companies' interim reports. *Inter alia*, they report that 'earnings reconciliation adjustment is value relevant and has incremental price relevance over and above the UK GAAP numbers' (Horton and Serafeim, 2008: 36), but this is not confirmed for the shareholders' equity reconciliation adjustment. (A corresponding finding is reported by Capkun *et al.* (2008) with regard to the UK.) Furthermore, the authors examine the value relevance of individual adjustments reported within the reconciliation statements. Their findings illustrate that, with reference to the price per share model tested, adjustments to earnings related to leases, tax and goodwill are incrementally value relevant. Schadewitz & Markku (2007) find that IFRS earnings and net assets' reconciliation adjustments are value relevant in Finland.

With reference to Greece there is only one paper which examines the issue of value relevance of accounting information after the adoption of IFRS. However, the research design followed is different from the one applied in the present study and explores the issue from a different angle. More specifically, Bellas *et al.* (2007) follow the same method as Hung & Subramanyam (2007) and Clarkson *et al.* (2008). They examine a) the value relevance of the 2004 book values on 2004 market values and b) the hindsight value relevance of the 2004 restated figures again on the 2004 market values. They find book value of equity to be more value relevant under IFRS, but this is not the case for profit after tax. Additionally, they find that the reconciliation bottom line adjustments to net profit appear to be incrementally value relevant, but not those with reference to shareholders' equity.

## *2.2 The Greek Accounting Environment*

Greek culture, politics and economics have been influenced by many international forces (Caramanis, 2005; Ballas, 1998). During the last decades the traditional state corporatism has been modernised and modified by neo-liberal, free market influences (Caramanis, 2005). Nevertheless Greece is considered to be a low trust society (Ballas *et al.*, 1998), suggesting a preference for state regulation and formalism (Ballas *et al.*, 1998), or detailed rules over principles and economic substance.

French influences on accounting and commercial law (including a French style General Accounting Plan) and EC membership in 1981 have played a part in achieving harmonisation with Western institutions and norms (Ballas, 1994; Ballas *et al.*, 1998). More recently, Law 3229/04, amending the main corporate Law (2190/20), introduced the mandatory implementation of IFRS by all Greek listed companies from 1 January 2005.

Finance is provided by banks and a debt-oriented capital markets (Baralexis, 2004; Tsovas, 2006). The Athens Stock Exchange (ASE) has been considered a developed market since 2000 (Mandikidis, 2000), but since 2006 has been classified in the ‘watch list’ by FTSE suggesting that its status may change to ‘Advanced Emerging Market’ (FTSE, 2008). In late 2006, 317 companies with a total market capitalisation of €158 billion<sup>7</sup> were listed. Foreign Investors held 52.31% of the market capitalisation of ASE’s FTSE 20 companies, 39.80% of FTSE 40, and 15.63% of Small Cap 80 companies (Central Security Depository, 2006). ASE is classified in accordance with the International Classification Benchmark (ICB<sup>8</sup>) and companies are grouped into 17 ‘super-sectors’, allowing comparison with corresponding sectors in international stock markets (ASE, 2005). The Hellenic Capital Market Commission (HCMC - ‘Επιτροπή Κεφαλαιαγοράς’) regulates and supervises the Greek market. Additionally, it is also the country’s representative body within the Committee of European Securities Regulators.

Corporate governance regulation has been introduced and updated to be in line with international rules, and although there is a tendency for companies to comply with form rather than substance of regulations (see e.g. Ballas *et al.*, 1998) this appears to be improving (Grant Thornton & AUEB, 2005, 2006).

As is also the case in other continental European countries, the debt financing which is typical in Greece encourages conservatism (Ballas, 1994). A further feature of the corporate context is high ownership concentration. Owners are usually involved in companies’ management and have therefore less need for financial statements as

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<sup>7</sup> €1=US\$1.3187 and €1=£0.6738 (31/12/06-FT).

<sup>8</sup> ICB distinguishes between four levels of classification consisting of 10 industries, 18 super-sectors, 39 sectors and 104 sub-sectors. The Greek sectors are comparable to 17 of the ICB sectors (ASE, 2005).

information source; they can also directly monitor and motivate staff without incentive schemes (Tzovas, 2006). Financial reporting in Greece is traditionally also closely linked to taxation (Ballas *et al.*, 1998).<sup>9</sup> Since financial statements are not required as information source for owners, companies can adopt aggressive tax-reducing strategies (Tzovas, 2006), including creative accounting (in particular relating to the balance sheet) (Baralexis, 2004). A further cause of creative accounting in code-law countries, including Greece, relates to stakeholders' payout preferences: companies may engage in income smoothing because stakeholders tend to prefer less volatile earnings (Ball *et al.*, 2000; Guenther and Young, 2000).

Poor enforcement and poor creditor and investor protection are common in French-style civil law countries (including Greece); poor legal protection of investors also appears to correlate with high ownership concentration (La Porta *et al.*, 1998). Thus in spite of recent reforms and a competitive audit market (see e.g. Leventis and Caramanis, 2005) audit and enforcement in Greece are weak: qualified audit reports are common, even after IFRS implementation (Grant Thornton, 2007) but do not appear to be an effective sanction (Kontoyannis, 2005).

### *2.3 Transition to IFRS and publication requirements in Greece*

In common with other EU member states, Greece became subject to EU Regulation 1606/2002 which requires, from 1 January 2005, all publicly traded companies to prepare consolidated financial statements in accordance with IAS/IFRS.<sup>10</sup> Because of the perceived higher quality of IFRS in comparison with local GAAP this requirement

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<sup>9</sup> See Ballas *et al.* (1998) for a critical examination of the Greek state's use of accounting books for tax collection purposes.

<sup>10</sup> An earlier (2002) law intended to implement IAS/IFRS for Greek listed companies never came into force.

was also extended to listed companies providing individual accounts in Greece. Greek companies expected IFRS transition to have a positive effect on their financial position (Grant Thornton and AUEB, 2003), but the process of transition was expected to be complex and problematic, *inter alia* because accountants and companies were insufficiently prepared (cf. Spathis and Georgakopoulou, 2007; Grant Thornton and AUEB, 2003), but also because of inefficiencies in auditing and enforcement (see above). These issues raise questions regarding the likely level of compliance with IFRS, including disclosure requirements.

Most companies' financial/fiscal year ends on 31 December (PD 186/92, art. 26 – an alternative permitted date adopted by few companies is 30 June). The HCMC, following auditors' and companies' requests in relation to the problems of transition, abolished the early publication date for summarised financial statements (two months after the year end) but effectively brought forward the required publication date for full annual financial statements (to three months after the year end) (Decision 6/372/15.2.06, Law 3461/06). Subsequently, at the end of March 2006 the first set of annual financial statements of Greek listed companies prepared in accordance with IFRS became available.

### **3. Research Hypotheses**

#### *3.1 Value relevance of accounting information pre and post IFRS*

Lower value relevance has been reported for debt-oriented and tax influenced accounting systems (Ali and Hwang, 2000). As these are typical features of

continental European countries, lower value relevance for Continental countries than for Anglo-Saxon countries has been also found (Ali and Hwang, 2000).

The Greek accounting framework has many features in common with the other Continental European countries. It differs substantially from IFRS and has been characterised as stakeholder-oriented, tax-driven (Spathis and Georgakopoulou, 2007) and conservative (e.g. Ballas, 1994). According to Ding *et al.* (2007), Greece is the country (of 30 examined) with the highest number of issues absent from local GAAP but covered by IAS (highest ‘absence score’). Additionally, Greece has the 10<sup>th</sup> highest level of ‘divergence’ (of 28 countries) with regard to differences between national rules and IAS (Ding *et al.*, 2007; see also Spathis & Georgakopoulou, 2007).<sup>11</sup> These issues can be explained in the Greek context since Ding *et al.* (2005) report that ‘divergence’ is closely related to culture and, as discussed above, Greece has a distinct culture. Additionally, Ding *et al.* (2007) find a positive association between ‘absence’ and ownership concentration, which is a particular feature of the Greek capital market. They also find a negative association between ‘divergence’ and the importance of equity market, the importance of which cannot be considered as very high in Greece considering that companies rely mainly on banking finance.

Polychroniadis (2002) argues that reporting quality would improve under IFRS since nine areas of creative accounting, with respect to overstating shareholders’ equity, would be eliminated under the new regime. Tsalavoutas & Evans (2008) did indeed find seven standards (see below) the adoption of which caused significantly negative impact on shareholders’ equity, and which relate to the creative accounting

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<sup>11</sup> Tsalavoutas & Evans (2008) discuss at length the differences between IFRS and Greek GAAP measurement and recognition rules as at the end of 2005.

practices previously identified by other researchers (Spathis, 2002; Spathis *et al.*, 2002; Baralexis, 2004; Caramanis and Spathis, 2006).

Taking into consideration a) the fact that IFRS consider investors as the main users of financial statements (IASB Framework, para. 10) and are not debt and tax oriented as is Greek GAAP; and b) the anticipation of improved financial reporting under IFRS as well as the evidence reported by Tsalavoutas & Evans (2008), it is expected that the change from Greek GAAP to IFRS should increase the accounting quality in Greece, defined as the relationship between accounting measures and market values (Lang *et al.*, 2003; Barth *et al.*, 2007; Barth *et al.*, 2001; Holthausen and Watts, 2001).

Accordingly, our first research hypothesis is stated as follows:

*(H1) –Hypothesis 1:* The value relevance of accounting measures increases after the switch from Greek GAAP to IFRS.

However, a counter-argument could be that accounting standards are only one element of the ‘financial reporting chain’ (Damant, 2006: 30) within a country; there are also several other social, political and institutional factors of relevance which may affect potential changes in value relevance more than accounting standards do. Consequently our hypothesis may not hold.

### *3.2 Value relevance and impact disclosed in the reconciliation statements*

The first IFRS financial statements published in 2005 incorporated a set of reconciliation statements detailing the changes between the reported financial position (shareholders’ equity) and performance (net profit) in the 2004 financial statements



under Greek GAAP and under IFRS. Additionally, the restated comparative figures thus derived show what the 2004 financial statements would have been if they had been prepared in accordance with IFRS rather than Greek GAAP.

Because of the substantial differences between IFRS and Greek GAAP the impact revealed within these statements was expected to be significant. Indeed, Tsalavoutas & Evans (2008: 2) identified a ‘statistically significant impact on equity and net income, whilst a surprisingly large number of individual companies were affected materially’.

Considering this significant impact and the more extensive disclosures required by IFRS, it is expected that these bottom line reconciliation adjustments should be incrementally value relevant. However, as stated by Nobes,<sup>12</sup> ‘different results and financial positions are logically to be expected when a different set of GAAP is applied for the same accounting period’. Additionally, net reconciliation changes may be small whilst significant individual adjustments may offset each other. Therefore, the individual adjustments (rather than the bottom line net adjustments) are likely to provide better information. That explanations of how and why accounting values change provide additional information benefits is also noted in a different context by Alciatore (1993).<sup>13</sup>

We therefore focus on the individual adjustments reported within shareholders’ equity reconciliation statements.<sup>14</sup> This promises to be interesting also because specific areas of creative accounting identified by prior research (Spathis,

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<sup>12</sup> A comment made during the workshop ‘Accounting in Europe’ (Paris, September 2007).

<sup>13</sup> With regard to the change in the ‘standardised measure’ required by SFAS No. 69 to be disclosed by oil and gas producers for reserves.

<sup>14</sup> Like Tsalavoutas & Evans (2008) and HCMC 2006, we do not capture individual adjustments with regard to the income statement because of the low quality of transitional disclosures relating to this (c.f. Grant Thornton, 2006).

2002; Spathis *et al.*, 2002; Baralexis, 2004; Caramanis and Spathis, 2006) are expected to be curtailed under IFRS (Polychroniadis, 2002). Indeed, Tsalavoutas & Evans (2008: 27) state that the implementation of most of the standards relating to previous creative accounting practices ‘has a negative effect on all (IAS 2 & IAS 36), virtually all (IAS 37 & IAS 38) or the large majority (IAS 18, IAS 19, IAS 32/39) of companies to which they are relevant’. We focus on three of the above, namely IAS 19, IAS 38, and the aggregate adjustment of IAS 32 and IAS 39,<sup>15</sup> because they affect most companies in our sample simultaneously. For impact caused from these standards, we test whether the information provided within the reconciliation statements in 2004 shareholders’ equity provides additional value relevance over just the 2005 book values. Similar studies in other countries have also indicated that some individual adjustments are also value relevant (e.g. Horton and Serafeim, 2008).

The adoption of the above standards caused a negative impact on shareholders’ equity for the following reasons. Under Greek Law a company has an obligation to pay a lump-sum to retiring employees. These payments fall within the defined benefit schemes under IAS 19. Under Greek Law they are treated as provisions. However, in practice most companies (following tax law) recognised these liabilities only in relation to employees due to retire during the next financial year, i.e., they overstated net assets by not recognising the total obligation. The adoption of IFRS therefore led to a significant negative impact. Additionally, disclosures provided under Greek GAAP, with regard to this issue, were significantly less than those provided under IFRS. Accordingly, more qualitative information was also provided in the 2005 financial statements with regard to the pension obligations. In line with the

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<sup>15</sup> In many cases, companies did not disclose the explicit impact of the adoption of each standard. Instead, they referred to ‘impact on financial instruments’. This limitation did not allow us to capture the impact of IAS 32 and IAS 39 separately.

main assumption of value relevance, i.e., that market participants process the reported information, we expect that the market process this information as an improvement of financial reporting in Greece. This leads us to expect that the increase in pension liabilities, recognised on transition, to be incrementally value relevant.

Under Greek GAAP treasury shares are carried at cost as financial assets but this is not permitted under IAS 32. Accordingly, on transition to IFRS, Greek companies had to derecognise such assets and reduce shareholders' equity. With regard to loans and receivables, IAS 39 requires companies to use the effective interest method for their subsequent measurement. The introduction of this requirement also had a significant negative effect on transition since companies had to recognise reductions of the value of receivables which were not recognised under the previous regime. Additionally, following adoption of IAS 39 they had to recognise more financial liabilities. Subsequently, we also expect the aggregate adjustments with regard to financial instruments to be incrementally value relevant. (Additionally, IAS 32 introduced more mandatory disclosures with regard to financial instruments. These resulted in the provision of more information regarding companies' financial liabilities in general. This may affect the incremental value relevance of the adjustments related to financial instruments.)

Under Greek GAAP, start-up costs and capital expenditure should either be expensed in the period incurred or capitalised as intangibles under the heading '*expenses of perennial depreciation*' and amortised using the straight line method over a maximum period of 5 years. Development expenses are also classified under this category. The majority of companies follow the capitalisation method. Additionally, many companies capitalise expenditure which does not strictly meet the criteria for capitalisation (e.g. research expenditure) (Polychroniadis, 2002). These

approaches resulted in overstating assets while avoiding profit reduction under Greek GAAP. Under IAS 38, companies were required to derecognise these assets (both capitalised start-up costs and research expenditure) and reduce shareholders' equity. Since these adjustments caused a significant impact on companies' shareholders equity, we expect these adjustments also to be incrementally value relevant.

Therefore, our second research hypothesis is stated as follows:

*(H2) –Hypothesis 2:* The adjustments reported within the 2004 shareholders' equity reconciliation statements, produced by the adoption of IAS 19, IAS 38, and IAS 32/39, are incrementally value relevant.

With regard to IAS 19 and IAS 32/39 adjustments we predict positive relationship with companies' market values since the investors may perceive them as reflecting companies' real financial position, i.e., improvements of the financial reporting quality. However, the sign of the relationship with regard to IAS 38 is difficult to be predicted. On the one hand, the market may indeed perceive these adjustments as curtailment of prior overstatements i.e. as improvements, leading to a positive relationship with market values. On the other hand, investors may perceive these adjustments as unnecessary write-offs of intangible assets which would produce future economic benefits to the companies, leading to a negative relationship with market values. The latter may be particularly relevant to small companies for which high growth is expected (see below). (Since the adjustments are expected to be negative, an inverse relationship between the adjustments and market values is described above).

Additionally, since this research hypothesis tests the significance of the adjustments reported within the reconciliation statements, it indirectly tests the usefulness of the reconciliation statements. If the balance sheet adjustments are indeed value relevant, the reconciliation statements provide useful information.

### *3.3 Further analysis – sub-hypotheses*

Apart from the accounting regime (IFRS or Greek GAAP), the respective value relevance of accounting information can be influenced by several firm specific factors which may affect the perceived quality of this information. We therefore explore the influence of firm size and audit quality, as proxies for information quality, by providing separate analyses with reference to these sub-samples.

#### *3.3.1 Firm size*

According to Brown & Kim (1993: 668) the ‘incentives for information production and dissemination by outsiders are an increasing function of firm size’. Small firms are not followed by investment analysts and the media to the same extent as large firms. This may result in small firms not being followed by large institutional and/or foreign investors (due to lack of available information). Instead, small firms may be followed by small individual investors who ‘are less likely than investment professionals to be able to anticipate financial statement information from other sources’ (Ball, 2006: 11). Accordingly, the value of a small firm may not incorporate all the information available. This may affect differently the value relevance of accounting information across small and large firms.

Additionally, previous research has shown that the importance of book value of equity is not consistent in valuation (Collins *et al.*, 1997). Its weight depends on the explanatory power of current earnings as a good proxy for future earnings and/or on

the potential abandonment or liquidation of a firm. These two aspects can be particularly relevant to small firms (Collins *et al.*, 1997), who tend to report losses more often than large firms (Hayn, 1995). Additionally, smaller firms can be characterised as less mature, having high growth potential since they are less diversified. Consistent with Ohlson (1995), this leads to increased importance of the book value of equity for small firms and/or increased importance of earnings for large and more mature firms (Xu *et al.*, 2007).

These issues are particularly relevant to our study since our sample includes a variety of firm sizes (see below) and it was expected that, ‘the financial statements of many small and medium size listed companies will reveal large and unfavourable surprises on transition to IFRSs’ (Kontoyannis, 2005: 26 - translation). Additionally, foreign investors hold substantially lower percentages of shares in small firms than in large firms in Greece (see 2.2).

Accordingly, we expect different perceptions of the value relevance of accounting information for small firms and for large firms after IFRS adoption (H1). We expect that the investor focus of IFRS should enhance the value relevance of small firms more than that of large firms. Drawing on finance literature (e.g. Fama and French, 1993), we use the median value of the 2006 market capitalisation as a benchmark for distinguishing small vs. large firms.

*(H1a) – Sub-Hypothesis 1a:* For small firms, the value relevance of accounting measures increases more than the value relevance of large firms, after the switch from Greek GAAP to IFRS.

Similarly, since the impact on the reconciliation statements of large firms is likely to be anticipated (because of greater coverage by investment professionals) and as the impact on these firms is expected to be significant (Kontoyannis, 2005), we expect that the individual adjustments with regard to book value of equity in the reconciliation statements will be more significant for small firms, where investors place greater weight on book values (Collins *et al.*, 1997). On that basis:

*(H2a) – Sub-Hypothesis 2a:* The adjustments reported within the 2004 shareholders' equity reconciliation statements, resulting from the adoption of IAS 19, IAS 38 and IAS 32/39, are more incrementally value relevant for small firms.

### 3.3.2 Audit quality

Leuz *et al.* (2003: 525) state that 'outsider economies with relatively dispersed ownership, strong investor protection, and large stock markets exhibit lower levels of earnings management than insider countries with relatively concentrated ownership, weak investor protection, and less developed stock markets'. They classify Greece (along with Austria) as the country with the highest earnings management. Ding *et al.* (2007) find that 'absence' creates opportunities for earnings management. Considering that Greece has a very high 'absence' score (see above), the finding of Leuz *et al.* (2003) is not surprising.

DeAngelo (1981) and Watts & Zimmerman (1986) suggest that big audit firms are assumed to provide audits of higher quality than small audit firms since the former are more independent. Several empirical studies use a dichotomous variable (i.e. 'Big 4' vs. non-'Big 4' or formerly 'Big 5' vs. non-'Big 5') to proxy for differences in

audit quality. The literature suggests that this proxy indeed captures differences in audit quality (e.g. Becker *et al.*, 1998).

This proxy has been used by Caramanis & Lennox (2008) to examine earnings management and audit quality in Greece.<sup>16</sup> They demonstrate that the ‘Big 5’ audit firms work more hours than the non-‘Big 5’ firms. They therefore use audit hours as a proxy for audit effort and find that ‘abnormal accruals are more likely to be positive when audit hours are lower’ and that ‘the magnitude of income-increasing abnormal accruals is greater when audit hours are lower’ (ibid.: 117). These results suggest that ‘low audit effort [i.e. having a non-‘Big 5’ auditor] is associated with earnings management.’ (Caramanis and Lennox, 2008: 117). (Leventis and Caramanis (2005) also provide evidence that audit effort is correlated with type of auditor in Greece.)

Based on these prior findings, we assume that the presence of a ‘Big 4’ auditor reflects higher accounting quality (i.e. more value relevant) under any set of accounting standards.<sup>17</sup> Accordingly, reporting quality (i.e. relative value relevance) may not change when companies (with a ‘Big 4’ auditor) move from national GAAP to IFRS, or any increase should not be as significant as for companies with a non-‘Big 4’ auditor. On the other hand, in the case of companies without ‘Big 4’ auditors, we expect value relevance of accounting information to increase, as the implementation of the new accounting standards should produce more relevant accounting information (i.e. of higher quality). On that basis:

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<sup>16</sup> This proxy has also been used by Owusu-Ansah & Leventis (2006) and Leventis *et al.* (2005) in research on timeliness of reporting and audit report lag by Greek companies.

<sup>17</sup> Greek managers may also intentionally employ a ‘Big 4’ audit firm as a signal of high accounting quality. We thank Martin Walker and Mark Clatworthy for pointing this out.



*(H1b) – Sub-Hypothesis 1b:* For companies with non-‘Big 4’ auditors, the value relevance of accounting measures increases more than the value relevance of firms with ‘Big 4’ auditors, after the switch from Greek GAAP to IFRS.

Additionally, under the same rationale and following Tsalavoutas & Evans (2008), who show a more significant impact of specific standards for companies with non-‘Big 4’ auditors, we expect that the reconciliation adjustments (H2) should be more value relevant in the case of companies with non-‘Big 4’ auditors. This implies that investors in these companies consider the reconciliation adjustments to be genuine improvements in accounting quality rather than just differences between the two accounting regimes (which could be the case for companies with ‘Big 4’ auditors).

*(H2b) – Sub-Hypothesis 2b:* The adjustments reported within the 2004 shareholders’ equity reconciliation statements, resulting from the adoption of IAS 19, IAS 38 and IAS 32/39, are more incrementally value relevant for firms with non-‘Big 4’ auditors.

## **4. Research Design and Data**

### *4.1 Research design*

The study is based on the fundamental Ohlson (1995) model which has also been used in prior research (e.g. Collins *et al.*, 1997; Lang *et al.*, 2003; Barth *et al.*, 2007; Hung and Subramanyam, 2007; Paananen *et al.*, 2005):

$$MV_{it} = a_0 + b_1 BVE_{it} + b_2 NI_{it} + \varepsilon_{it} \quad (1)$$

where:  $MV_{it}$  is the market value of a company  $i$   $x$  days or months after the end of the financial period under examination ( $t$ );  $BVE_{it}$  is the book value of net assets of company  $i$  at the end of the financial period under examination ( $t$ );  $NI_{it}$  is the net profit after tax of company  $i$  for the end of the financial period under examination ( $t$ ); and  $\varepsilon_{it}$  is any other value relevant information of company  $i$  at the end of the financial period under examination ( $t$ ).

We do not attempt to determine what is reflected in the changes of companies' values over a specific period of time. Instead, we are interested in what is reflected in the companies' values at a particular point of time. This is why we use the above 'price levels model' and not a 'returns' specification (Barth *et al.*, 2001). This approach is also in line with Gu (2005: 71) who argues that 'the two models likely represent two different economic relations and that the model choice depends on the researcher's belief and the research question at hand'.

Barth & Clinch (2005) and Barth & Kallapur (1996) show that number of shares outstanding is an effective proxy for scale. Following this evidence, we have scaled all variables by the number of shares outstanding. Easton & Sommers (2003) suggest that market value can be used as a deflator instead. Accordingly, we have also tested all our hypotheses by using market value as a deflator. We have also performed the same models with non-deflated variables. Our results with regard to non-deflated variables as well as with market value as a deflator (not tabulated here) do not change significantly.

We define outliers by using Cook's Distance as a measure. We have also checked for multicollinearity with a variance inflation factor (VIF)>10 as a threshold

(Pallant, 2005) and the variables in our regressions are always under that threshold. We also control for heteroskedasticity by using ‘Heteroskedasticity-consistent covariance matrix estimator 3 (HC3)’. This alternative method tends to produce better results than White’s (1980) basic method because it produces confidence intervals tending to be even more conservative (MacKinnon and White, 1985).<sup>18</sup>

#### 4.2 Pre and post IFRS value relevance of accounting information (H1, H1a and H1b)

With regard to H1, this study uses panel data analysis based on 2004 and 2005 for each company. As we want to test if there is any difference (structural change) in the above model between the two periods, a dummy variable is introduced indicating the two different periods under examination (Gujarati, 2003). Taking into consideration the basic assumption of value relevance studies, i.e. that the investors process the reported values, the present study allows for 30 days after the publication of the annual results (i.e. approximately four months after the year end date) for investors to ‘absorb’ and process the book values reported.<sup>19</sup> On that basis, the model employed is:

$$MV_{it} = a_0 + b_1 DV + b_2 BVE_{it}^{GR\&IFRS} + b_3 BVE_{it}^{GR\&IFRS} * DV + b_4 NI_{it}^{GR\&IFRS} + b_5 NI_{it}^{GR\&IFRS} * DV + \varepsilon_{it} \quad (2)$$

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<sup>18</sup> With regard to outliers, we also tried using cases for which the standardised residuals lie outside the range of +/- 3 standard deviations. Although this method would exclude fewer observations than the one we finally apply it produced results with high multicollinearity. The same applied to our findings when we used dfbeta for identifying outliers.

<sup>19</sup> Choosing one month after the announcement of the annual results also avoids any ‘noise’ that might be caused by the publication of the quarterly reports.

Where:

$MV_{it}$  = market value of shareholders' equity deflated by the shares in issue for firm  $i$  as at 30 days after the publication of the annual results;

$DV$  = dummy variable where 1 refers to the 2005 IFRS financials and 0 refers to the 2004 Greek financials.

$BVE_{it}^{GR\&IFRS}$  = year end book value of shareholders' equity deflated by the number of shares in issue for firm  $i$  as at 30 days after the publication of the annual results;

$BVE_{it}^{GR\&IFRS} * DV$  = year end book value of shareholders' equity deflated by the number of shares in issue for firm  $i$  as at 30 days after the publication of the annual results multiplied by the dummy variable, accounting for the change in the period;

$NI_{it}^{GR\&IFRS}$  = year end net profit deflated by the number of shares in issue for firm  $i$  as at 30 days after the publication of the annual results;

$NI_{it}^{GR\&IFRS} * DV$  = year end net profit deflated by the number of shares in issue for firm  $i$  as at 30 days after the publication of the annual results multiplied by the dummy variable, accounting for the change in the period;

This method allows for comprehensive analysis of whether in 2005 (i.e. under IFRS) more value relevant accounting measures are produced. It permits us to assess how much the coefficients of BVE and NI (i.e.  $b_3$  and  $b_5$ ), referring to the 2005

financials, differ from those referring to 2004 (see further in Gujarati, 2003: 308) and whether this difference is significant. This allows for identifying not only a potential shift to the value assigned to the individual bottom line figures produced under the new accounting regime but also the direction of the shift. The dummy variable coefficient and its sign will indicate the average shift in the market price per share between the two periods.

An alternative method could be to run model 1 separately for each period and then compare the R squares with Cramer's (1987) method. Alsalman (2003), Ball *et al.* (2000) and Harris *et al.* (1994) use this method to compare the adjusted R squares across countries. However, Gu (2007: 1074) illustrates that, due to 'inherent sampling variations' it is not appropriate to compare R squares across samples, 'even in the absence of scale and heteroscedasticity'. Following Gu (2007) and Gujarati (2003), we therefore employ the panel data method rather than Cramer's (1987) method.

#### *4.3 Incremental Value relevance of the impact disclosed in the reconciliation statements (H2, H2a and H2b)*

Reconciling items are assumed to be first known to market participants with the published 2005 results.<sup>20</sup> In order to examine the impact of these items we proceed by introducing into model 1 the bottom line changes revealed in the reconciliation

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<sup>20</sup> While companies could provide guidance regarding the anticipated IFRS impact in the year leading up to the publication of the closing 2005 numbers, our examination of transition period disclosure indicates that little guidance was given to the Greek market. Some companies provided such information within interim reports. However, the reconciliation statements provided within the full year financial statements differ substantially from those previously reported in the interims. Discussion with preparers indicates that firms were struggling to complete the implementation and this is the reason why the government extended the deadline for the publication of the annual results (see above).

statements with regard to the 2004 book values of equity and net income (model 3). More specifically, the 2005 book value of shareholders equity is decomposed back to the 2004 Greek numbers and is broken down across three components: the 2004 closing values under Greek GAAP; the difference revealed in the reconciliation statements between the 2004 Greek GAAP and IFRS figures; and the difference between opening and closing 2005 IFRS figures. Additionally, the net change in net profit is introduced. This decomposition assists in examining the incremental value relevance of specific reconciling items (H2).

We next focus on the standards previously identified as causing significant negative impact to a large proportion of Greek listed companies by curtailing previous creative accounting practices relating to the balance sheet. Model 3 is further decomposed (model 4) by breaking down the bottom line change in equity into four components: impact from IAS 19; IAS 32/39; IAS 38; and the aggregate impact from all other standards (Other). We focus on these three standards because they are simultaneously relevant to the majority of the companies in our sample.

Based on Alciatore (1993) and Horton & Serafeim (2008) (see above) these adjustments are expected to be significant since they introduce new information to the market. Model 3 and the description of the decompositions examined within model 4 are as follows:

$$MV_{it} = a_0 + b_1 BVE_{it}^{GR} + b_2 \Delta BVE_{it}^{IFRS-GR} + b_3 \Delta BVE_{it}^{IFRS} + b_4 \Delta NI_{it}^{IFRS-GR} + b_5 NI_{it}^{IFRS} + \varepsilon_{it} \quad (3)$$

$$MV_{it} = a_0 + b_1 BVE_{it}^{GR} + b_2 IAS\_19_{it} + b_3 IAS32\_39_{it} + b_4 IAS\_38_{it} + b_5 Other_{it} + b_6 \Delta BVE_{it}^{IFRS} + b_7 \Delta NI_{it}^{IFRS-GR} + b_8 NI_{it}^{IFRS} + \varepsilon_{it} \quad (4)$$

Where:

- $MV_{it}$  = market value of shareholders' equity deflated by the shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;
- $BVE_{it}^{GR}$  = 2004 book value of shareholders' equity, under Greek GAAP, deflated by the number of shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;
- $\Delta BVE_{it}^{IFRS-GR}$  = change in the 2004 shareholders' equity, revealed in the reconciliation statements, deflated by the shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;
- $\Delta BVE_{it}^{IFRS}$  = difference between opening and closing 2005 book value of shareholders' equity deflated by the number of shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;
- $\Delta NI_{it}^{IFRS-GR}$  = change in the 2004 net profit after tax, revealed in the reconciliation statements, deflated by the shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;
- $NI_{it}^{IFRS}$  = 2005 net profit after tax, under IFRS, deflated by the number of shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;
- $IAS\_19_{it}$  = impact on 2004 book value of shareholders' equity caused by the adoption of IAS 19 deflated by the shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;
- $IAS32\_39_{it}$  = impact on 2004 book value of shareholders' equity caused by the adoption of IAS 32 and IAS 39, as captured in aggregate, deflated by the shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;

$IAS_{38}_{it}$  = impact on 2004 book value of shareholders' equity caused by the adoption of IAS 38, deflated by the shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;

$Other_{it}$  = aggregate impact on 2004 book value of shareholders' equity caused by the adoption of all other standards, deflated by the shares in issue for firm  $i$  as at 30 days after the publication of the 2005 annual results;

The transformation of model 1 will maintain or increase its explanatory power ( $R^2$ ) because more variables are introduced. Accordingly, any change in the explanatory power ( $R^2$ ) of model 4 compared to that of model 1 is tested by using an  $F$  test (see e.g. Gujarati, 2003, pp 267-9).

#### *4.4 Data*

There were 317 companies listed on the ASE at the end of March 2006. Our initial sample excludes 5 early IFRS adopters. Additionally, we exclude 11 companies with 30 June as their year end date. 42 companies provided inadequate reconciliation disclosures and thus were excluded (they either did not provide the reconciliation statements required or provided insufficient disclosures to allow for an evaluation of the impact caused by the implementation of individual standards). 44 financial companies were also excluded. 56 further companies had to be excluded because of data unavailability (they either had not disclosed profit after tax under Greek GAAP or were not traded on ASE both one month after the publication of the 2004 and of the 2005 annual results). This leaves a sample of 159 firms (Appendix I shows the number of companies across different sectors). 40 of them had a 'Big 4' and 119 a



non-‘Big 4’ auditor. (The Pearson product-moment coefficient reveals no significant correlation between companies’ size (market value) and auditing firm in our sample.)

The market values for both financial periods as well as the line items of the 2004 financial statements were acquired from ASE in electronic format. We hand collected the line items from the 2005 financial statements, as well as the adjustments reported in the reconciliation statements.

## **5. Empirical Findings and Discussion**

### *5.1 Descriptive statistics*

Table 1 reports the bottom line figures relating to relative value relevance of accounting information before and after the adoption of IFRS in Greece (H1, H1a & H1b). It also provides information on the market values in both periods. These descriptive statistics indicate that that the sizes of the companies in our sample vary substantially.

TABLE 1 ABOUT HERE

Table 2 reports information in relation to the variables used for testing H2, H2a and H2b. More specifically, it provides descriptive statistics with regard to the net changes revealed in companies’ reconciliation statements as well as the individual adjustments relating to IAS 19, IAS 32/39 and IAS 38.

Although a smaller sample is used here and a different method is employed, the majority of our findings are in line with Tsalavoutas & Evans (2008). The impact on both bottom line measures is significant, as is the impact of the individual changes introduced in shareholders’ equity by specific standards.

## TABLE 2 ABOUT HERE

Table 2 also illustrates that the implementation of the above standards caused a negative impact on shareholders' equity in the majority of cases. This is relevant to our study since the incremental value relevance of the adjustments and the sign of their coefficient indicate the perception of investors regarding the adjustments' effect on the quality of the financial statements. These negative changes have been offset, to a large extent, by the aggregate impact of all other standards which cause a combined net negative change to 25.2% of the companies in our sample.

### *5.2 Pre and post IFRS value relevance of accounting information (H1, H1a and H1b)*

Table 3 shows the results of the OLS regression of book value of net assets (BVE) and net profit after tax (NI) on market values per share (MV) for both periods with regard to the structured model using panel data (model 2). The main results are also disaggregated across the two categories controlling for the perceived quality of the reported data: small and large firms (H1a) and 'Big 4' and non-'Big 4' firms (H1b).

## TABLE 3 ABOUT HERE

With regard to the full sample, the results refer to 299 observations as 19 outliers were removed. The adjusted  $R^2$  of 48% shows that book values are strongly associated with the market price. In addition, both coefficients of book values of equity and net profit are statistically significant. However, in line with the prior literature, they indicate that the market gives substantially more weight to earnings (4.509) than to book value of equity (0.505).

Nevertheless, both regression coefficients of the book values multiplied by the dummy variable are not significant. This is interpreted as no change in the attitude towards any of the two specific measures; i.e. after the adoption of the new standards neither net assets nor net profit after tax are viewed differently by the investors. The anticipated higher value relevance of shareholders' equity or net profit (i.e. the perception for them to be of higher quality) is not confirmed.

Similar findings appear in both panels in relation to all four sub-samples for which we test our hypothesis. We do not find any change in the way the market weights book value of equity or reported earnings after the adoption of IFRS. We do not identify any change in the value relevance of accounting measures from Greek GAAP to IFRS for large vs. small firms (H1a) or firms with or without a 'Big 4' auditor (H1b).

The results presented in Table 3 may well suggest that investment decisions in the Greek market are influenced by the characteristics of the preparer (or provider) of the financial statements, irrespective of the accounting standards applied. We see that under both periods, the coefficient of book value of equity is not significant for the companies with a 'Big 4' auditing firm and for large companies (the latter finding is in line with previous research, e.g. Collins *et al.* (1997), Hayan (1995) and Xu *et al.* (2007) and the underlying rationale of Ohlson's (1995) model, see above). Additionally, across all sub-categories, we find substantially higher coefficients for earnings when the company is large or has a 'Big 4' auditor. This finding is not surprising, since there is evidence of less earnings management (Caramanis and Lennox, 2008) and higher audit effort (Leventis and Caramanis, 2005; Caramanis and Lennox, 2008) (i.e. more reliable earnings) in companies with large auditors.

These findings suggest that the switch to different accounting standards was not sufficient in itself to lead to greater relative value relevance. Instead the country's and market's specific context may continue to affect the perception of accounting quality. Given the prevalence for creative accounting, Greek investors may not know whether, how or to what extent the new IFRS figures have been creatively adjusted. Therefore they may not assume IFRS financial statements to be of higher quality but continue to rely on characteristics of the preparers, as they did before. In other words, they continue to place a greater value on earnings produced by companies with a 'Big 4' auditor since their earnings are considered to be less creatively adjusted (Caramanis and Lennox, 2008), as well as those of large firms since their earnings are considered to be more consistent (Hayn, 1995). In all cases the weight is not significantly different from what it was under Greek GAAP.

### *5.3 Incremental Value relevance of the impact disclosed in the reconciliation statements (H2, H2a and H2b)*

Table 4 provides information with regard to H2 in relation to the total sample first, and second in relation to the four sub-samples. This disaggregation (model 4) facilitates the examination of the incremental value relevance of material individual adjustments on shareholders' equity resulting from three standards which curtail previous creative accounting practices, and the transitional impact on earnings.

TABLE 4 ABOUT HERE

For the full sample, the  $F$  test comparing the  $R^2$  of the basic and the decomposed model shows significantly higher explanation of the variance between book and market values from the decomposed model (4). The adjustment with regard to the

aggregate impact caused by the adoption of IAS 32 and IAS 39 is positive and significant. This finding indicates that the market perceives the write down of treasury shares previously presented as financial assets (IAS 32) and the increase in financial liabilities (IAS 39) as negatively affecting the market value of equity. By contrast, the adjustments relating to IAS 38 are also significant but with a negative coefficient. We interpret this finding as follows: IAS 38 removes from the balance sheet certain intangibles, but the market perceives these capitalised expenses to be providing future economic benefits and contributing to the growth of companies and subsequently it 'reverses' these adjustments (recapitalising the intangibles). This is consistent with a large body of research in the US which shows that market participants view Research and Development expenses as intangible assets when valuing a firm (see for example Xu *et al.*, 2007 for a presentation of the literature and supporting evidence). The findings also indicate that the adjustment required by IAS 19 as well as the aggregate adjustments of all the remaining standards (Other) are not value relevant for the overall sample.

Additionally, we see that the bottom line adjustment to earnings is not significant. This finding is in line with the findings of Horton & Serafeim (2007) with reference to Spain and Horton & Serafeim (2008) with reference to the UK. It is also in line with the argument that individual adjustments, rather than the bottom line net adjustments, are likely to provide better information.

In line with our sub-hypotheses, incremental value relevance is determined by the perceived quality of the available accounting information as proxied by firm size (H2a) and audit quality (H2b).

With regard to H2a, we find that for smaller companies the results are consistent with those for the full sample. In addition, the (negative) adjustment for

retirement benefits is also significant. In contrast, only the aggregate adjustment with regard to financial instruments is significant (at 10% level) for large companies. This may suggest that investors in small firms are more concerned with the increased provisions recognised under IFRS. This also may confirm the suggestion that information for small firms is not always available and that the increased disclosures introduced by IFRS (with regard to financial instruments and pension obligations) provided more relevant information to the market. Additionally, we interpret this adjustment as being viewed as curtailment of a creative accounting practice previously followed, rather than just arising from a difference between the two accounting regimes.

With regard to H2b, we do not find any of the individual reconciliation adjustments to be significant for companies with a 'Big-4' auditor. In contrast, the aggregate adjustment with regard to financial instruments is significant at 5% level for companies with a non-'Big 4' auditor. We interpret these findings as consistent with our sub-hypothesis. For firms with 'Big 4' auditors these adjustments are viewed as arising from a difference between the two accounting regimes. In contrast, with regard to companies known for having higher earnings management (i.e., companies with non-'Big 4' auditors), the decrease in book value of equity as a result of IAS 32 and IAS 39 is significant. This means that investors viewed this negative adjustment as curtailment of a creative accounting practice previously followed.

The disaggregation of our findings across these sub-samples reveals that the negative co-efficient of the IAS 38 adjustments in the full sample results is driven by the results for the small firms. This supports, even further, our argument that investors consider capitalised expenses as assets which will produce future economic benefits

and should be recognised on small firms' balance sheet, for which high growth is expected.

These findings not only allow us to accept H2 but also support the argument for preparing reconciliation statements. Our results indicate that the market is interested and responds to the individual changes reported in these statements, using the new information to assess what last year's financial statements would have been if they had been produced under IFRS. Additionally, these findings challenge the potential argument that, as there is high ownership concentration in Greece (Tzovas, 2006) and the business environment is relatively small, the impact of the adoption of IFRS could have already been known through internal information channels and may therefore have had little importance in market valuations.

## **6. Conclusions**

Prior literature suggests that Anglo-Saxon, shareholder oriented accounting regimes (such as IFRS) provide more value relevant accounting information than the stakeholder regimes in Continental Europe (Ali and Hwang, 2000).

Greece is selected as a single case study for the present paper because it represents a small market, with a distinct accounting environment, often criticised for the inadequate quality of its reporting. Additionally, the impact of the change from Greek GAAP to IFRS is significant. Selection of a single country study avoids the problems which arise from making comparisons across countries with dissimilar institutional and political environments.

Our findings suggest that there is no statistically significant change in the value relevance of book values of shareholders' equity and net profit after tax, after the adoption of IFRS (H1). This finding does not support the assumption that

accounting quality improves after the adoption of IFRS, at least not if accounting quality is defined as the association between book and market values (Paananen *et al.*, 2005; Horton and Serafeim, 2008; Lang *et al.*, 2003; Barth *et al.*, 2007). These results hold independent of factors which might be perceived to affect the quality of accounting information (firm size (H1a) and audit quality (H2a)). However, we find that after the switch to IFRS investors continue to give substantially higher weight to earnings produced by large firms and by firms having a 'Big 4' auditor. This suggests that changing accounting standards does not necessarily change the market participants' perception about the quality of the accounting information.

These findings are particularly relevant to standard setters (Holthausen and Watts, 2001: 11). They also contribute to the debate on whether shareholder-focused accounting principles are more value relevant than traditional continental European accounting regulations: at least in the case of Greece, this is not so.

With regard to the adoption of particular IFRS which curtail previous creative accounting practices (H2), we find that the adjustments resulting from IAS 38 and the aggregate adjustments of IAS 32 and IAS 39 are incrementally value relevant. However, the former are negatively significant while the latter are positively significant. Our findings indicate that the incremental value relevance of these adjustments is related to perceived accounting quality. More specifically, no adjustment is found to be incrementally value relevant for companies with 'Big 4' auditors whereas the aggregate adjustment regarding financial instruments is incrementally value relevant for the remaining firms. With regard to large firms we find that only the aggregate adjustment regarding financial instruments is incrementally value relevant whereas adjustments with regard to IAS 19, IAS 38 and IAS 32/39 are significant for small firms.



Although our findings suggest that the participants in the Greek market do not change their attitude towards book values because these are now produced under IFRS (H1), they do suggest that investors process the information reported within the transitional reconciliation statements (H2). This is in line with Alciatore (1993) who concludes that the market assigns value to information explaining how and why a net change reported has arisen. Consequently, the identification of incremental value relevance of the individual adjustments supports the usefulness of the reconciliation statements, at least as far as Greece is concerned.

Our findings are subject to two limitations. First, in common with similar market relevance studies we assume that investors understand and evaluate the implications and effects of IFRS and react accordingly. This may not be (completely) the case where IFRS are introduced for the first time in a country with a substantially different accounting tradition (cf. Grant Thornton and AUEB, 2003).

Secondly, inadequate reconciliation disclosures in companies' first IFRS statements were reported by HCMC (2006) and Grant-Thornton (2006). Selective or incomplete reporting/disclosure may mislead investors unfamiliar with the new regime. This may distort the value relevance of the accounting information provided.

Considering the unique Greek cultural, socio-economic and financial environment, further in-depth research will contribute to a better understanding of the overall implications of IFRS. For example, discussion with market participants could shed light on the different signs on the coefficient of IAS 38. Furthermore, examination of the level of compliance with IFRS disclosure requirements would allow for the identification of companies' approach towards the increased disclosures required under the new regime. This could be enhanced by an examination of financial statement preparers' and users' views regarding the level of compliance and

of reactions by the market. Finally, reporting quality could be examined in terms of creative accounting practices under IFRS and the level of improvement in comparison to the old accounting regimes.

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## Tables

Table 1: Descriptive statistics.

<i>Panel A: Non-deflated Variables</i>							
Variables	N	Mean		St. Deviation		Median	
		2005	2004	2005	2004	2005	2004
MV	159	275.6	183.2	918.2	654.2	50	36.3
<i>Test of differences</i>		(0.000)				(0.000)	
BVE	159	108.4	89	198.6	147	32.4	35
<i>Test of differences</i>		(0.008)				(0.043)	
NI	159	13.8	11	49.3	43.4	1.85	2.1
<i>Test of differences</i>		(0.143)				(0.315)	
<i>Panel B: Variables deflated by the number of outstanding shares</i>							
Variables	N	Mean		St. Deviation		Median	
		2005	2004	2005	2004	2005	2004
MV	159	5.37	3.87	9.31	6.43	2.77	1.94
<i>Test of differences</i>		(0.000)				(0.000)	
BVE	159	3.28	3.04	5.06	3.85	2.26	2.2
<i>Test of differences</i>		(0.161)				(0.443)	
NI	159	0.31	0.26	1.17	0.84	0.12	0.12
<i>Test of differences</i>		(0.301)				(0.146)	

Financial data in €millions. €1=US\$1.2597 and €1=£0.6930 (28/4/06-FT). Two-tailed *p*-values are in parentheses. The means tested with the ‘paired-samples t-test’ and the medians tested with the ‘Wilcoxon signed rank test’. *Variable definitions*: *MV*- Market Capitalisation as at 1 month after the publication of the annual results (i.e., approximately 4 months after the year end date); *BVE*- Book value of shareholders’ equity; *NI*- Net profit after tax.

Table 2: Changes according to reconciliation statements – descriptive statistics (N=159).

<i>Panel A: Non-deflated Variables</i>						
	Impact on 2004 book values		De-composed impact on BVE			
	$\Delta BVE^{IFRS-GR}$	$\Delta NI^{IFRS-GR}$	<i>IAS_19</i>	<i>IAS32_39</i>	<i>IAS_38</i>	<i>Other</i>
Mean	11.0**	2.21**	-1.63***	-3.12***	-3.15***	18.90***
St. Deviation	70.3	12.2	4,48	8.80	9.47	73.2
Lower Quartile	-4.39	-0.64	-1.10	-2.12	-1.64	-0.07
Median	0.64	0.12**	-0.30***	-0.39***	-0.50***	2.5***
Upper Quartile	5.37	1.36	-0.01	0.00	-0.14	9.10
% Positive	54.7	56.6	11.9	9.40	4.40	74.8
% Negative	45.3	43.4	75.5	73.0	88.1	25.2
% Non-zero	100	100	87.4	82.4	92.5	100
<i>Panel B: Variables deflated by the number of outstanding shares</i>						
	Impact on 2004 book values		De-composed impact on BVE			
	$\Delta BVE^{IFRS-GR}$	$\Delta NI^{IFRS-GR}$	<i>IAS_19</i>	<i>IAS32_39</i>	<i>IAS_38</i>	<i>Other</i>
Mean	0.15*	0.05*	-0.05***	-0.10***	-0.09***	0.39***
St. Deviation	1.10	0.33	0.10	0.23	0.16	1.12
Lower Quartile	-0.20	-0.04	-0.05	-0.12	-0.10	-0.00
Median	0.03	0.01**	-0.02***	-0.03***	-0.03***	0.15***
Upper Quartile	0.29	0.09	0.00	0.00	-0.01	0.44

Financial data in €millions. €1=US\$1.2597 and €1=£0.6930 (28/4/06-FT). Two-tailed tests. One sample *t*-test for mean ( $m \neq 0$ ).

One sample Wilcoxon signed rank test for median ( $m \neq 0$ ). \*Significant at 10%, \*\*Significant at 5%, \*\*\*Significant at 1%.

*Variable definitions:*  $\Delta BVE^{IFRS-GR}$  - Change in the 2004 book value of shareholders' equity;  $\Delta NI^{IFRS-GR}$  - Change in the 2004 net profit after tax; *IAS\_19*- Change in the 2004 book value of shareholders' equity caused by the adoption of IAS 19; *IAS32\_39*- Change in the 2004 book value of shareholders' equity caused by the adoption of IAS 32&39; *IAS\_38*- Change in the 2004 book value of shareholders' equity caused by the adoption of IAS 38; and *Other*- aggregate change in the 2004 book value of shareholders' equity caused by the adoption of all other standards.

Table 3: Pre and post IFRS relative value relevance of accounting information: H1, H1a & H1b (N=159).

Panel data model (2):					
$MV_{it} = a_0 + b_1 DV + b_2 BVE_{it}^{GR\&IFRS} + b_3 BVE_{it}^{GR\&IFRS} * DV + b_4 NI_{it}^{GR\&IFRS} + b_5 NI_{it}^{GR\&IFRS} * DV + \varepsilon_{it}$					
Variables	Full sample	Firm Size		Auditing Firm	
		Above MV Median	Below or Equal MV Median	'Big 4'	non-'Big 4'
<i>Intercept</i>	0.733***	1.997***	0.711***	0.929*	0.713**
<i>DV</i>	0.730	0.716	0.172	1.117	0.404
$BVE^{GR\&IFRS}$	0.505***	0.115	0.229***	0.322	0.488***
$BVE^{GR\&IFRS} * DV$	0.064	0.394	0.134	0.207	0.075
$NI^{GR\&IFRS}$	4.509***	7.732***	2.239***	8.015***	3.364***
$NI^{GR\&IFRS} * DV$	0.008	-1.994	0.321	-2.619	1.663
<i>F</i>	24.77***	12.80***	22.32***	15.62***	12.39***
<i>Adjusted R<sup>2</sup></i>	0.48	0.49	0.47	0.55	0.46
<i>Observations</i>	299	133	162	71	224

\*Significant at 10%, \*\*Significant at 5%, \*\*\*Significant at 1%. Outliers have been defined and excluded by using Cook's Distance as a measure. *Variable definitions*: *DV* - dummy variable where 0 indicates 2004 Greek financials and 1 indicates 2005 IFRS financials;  $BVE^{GR\&IFRS}$  - panel data values of book value of shareholders' equity;  $BVE^{GR\&IFRS} * DV$  - panel data values of book value of shareholders' equity multiplied by the dummy variable;  $NI^{GR\&IFRS}$  - panel data values of net profit after tax; and  $NI^{GR\&IFRS} * DV$  - panel data values of net profit after tax multiplied by the dummy variable. All variables have been deflated by the number of shares outstanding.

Table 4: Incremental value relevance of the impact disclosed in the reconciliation statements: H2, H2a & H2b (N=159).

Model (1): $MV_{it} = a_0 + b_1 BVE_{it}^{IFRS} + b_2 NI_{it}^{IFRS} + \varepsilon_{it}$										
Model (4): $MV_{it} = a_0 + b_1 BVE_{it}^{GR} + b_2 IAS\_19_{it} + b_3 IAS32\_39_{it} + b_4 IAS\_38_{it} + b_5 Other_{it} + b_6 \Delta BVE_{it}^{IFRS} + b_7 \Delta NI_{it}^{IFRS-GR} + b_8 NI_{it}^{IFRS} + \varepsilon_{it}$										
Variables	Full sample		Firm Size				Auditing Firms			
			Above MV Median		Below or Equal MV Median		'Big 4'		Non-'Big 4'	
	(1)	(4)	(1)	(4)	(1)	(4)	(1)	(4)	(1)	(4)
<i>Intercept</i>	1.563***	1.325***	2.700***	2.238**	0.781***	0.613***	1.575**	1.262	1.355***	1.178***
<i>BVE<sup>IFRS</sup></i>	0.528***		0.443*		0.366***		0.636**		0.495**	
<i>BVE<sup>GR</sup></i>		0.583***		0.511*		0.555***		0.528		0.571***
<i>IAS_19</i>		-0.167		-0.343		4.013***		-2.238		0.810
<i>IAS_32_39</i>		3.254***		6.905*		1.087*		5.619		2.567**
<i>IAS_38</i>		-2.841**		-6.105		-1.659***		-10.092		-1.705
<i>Other</i>		-0.124		-0.547		0.113		0.013		0.027
<i>ΔBVE<sup>IFRS</sup></i>		-1.218		-1.015		-0.056		-3.451		-1.217
<i>ΔNI<sup>IFRS-GR</sup></i>		-1.406		-1.741		-1.736		-1.627		-2.897
<i>NI<sup>IFRS</sup></i>	5.049***	6.974***	6.822***	9.090***	2.845***	2.941***	7.239***	10.015***	5.186***	7.200***
<i>F</i>	25.68***	22.56***	8.54***	4.04***	30.08***	17.61***	12.07***	2.87**	9.13***	12.09***
<i>Adjusted R<sup>2</sup></i>	0.48	0.54	0.50	0.52	0.57	0.55	0.60	0.69	0.42	0.49
<i>R<sup>2</sup></i>	0.49	0.57	0.51	0.58	0.59	0.60	0.62	0.76	0.43	0.53
<i>F test: ΔR<sup>2</sup> Compared to (1)</i>		3.21***		1.29		0.21		0.56		2.71**
<i>Observations</i>	149	146	73	70	72	74	36	35	111	110

\*Significant at 10%, \*\*Significant at 5%, \*\*\*Significant at 1%. Outliers have been defined and excluded by using Cook's Distance as a measure.

*Variable definitions:*  $BVE^{IFRS}$  - 2005 book value of shareholders' equity under IFRS;  $BVE^{GR}$  - 2004 book value of shareholders' equity under Greek GAAP;  $IAS\_19$  - Change in the 2004 book value of shareholders' equity caused by the adoption of IAS 19;  $IAS32\_39$  - Change in the 2004 book value of shareholders' equity caused by the adoption of IAS 32&39;  $IAS\_38$  - Change in the 2004 book value of shareholders' equity caused by the adoption of IAS 38; and *Other* - aggregate change in the 2004 book value of shareholders' equity caused by the adoption of all other standards;  $\Delta BVE^{IFRS}$  - Change between opening and closing 2005 book value of shareholders' equity;  $\Delta NI^{IFRS-GR}$  - Change in the 2004 net profit after tax as captured from the reconciliation statements;  $NI^{IFRS}$  - 2005 net profit after tax under IFRS. All variables have been deflated by the number of shares outstanding.



## Appendices

Appendix I: Number of companies per sector.

Media	9
Travel and leisure	12
Health care	6
Retail	10
Personal & household goods	24
Technology	15
Constructions & materials	16
Food and beverage	21
Basic resources	14
Oil and gas	2
Industrial goods & services	21
Chemicals	7
Utilities	2
<i>Total</i>	<i>159</i>