

Financial sector and outbreak of the economic crisis in 2008: IFRS versus US GAAP

Sotirios Rouvolis
Ministry of Finance, Athens, Greece

Abstract

Purpose – Testing a total of five hypotheses, the paper contributes to overall comparison of the two regimes, as it scrutinises whether these improvements have helped regulate this sector. Although it appears that, for the first time, International Financial Reporting Standards (IFRS) had a more timely effect than US Generally Accepted Accounting Principles (GAAP), multiple parameters must be taken into consideration. The banking system has additional rules that may affect financial statements, such as the Basel Accord which sets many policies closely related to the IFRS, such as deferred tax credits. In this way, this paper aims to enrich the results of these decisions, and illuminate aspects of amendments to IFRS and US GAAP in light of the crisis. Focussing on the financial sector, the author sought to critically evaluate their reactions, and to question some of their fundamental rules in practice. This is vital for accounting researchers and analysts, allowing for the first time to compare IFRS performance between Europe and the US, and make better investment evaluations.

Design/methodology/approach – The study sought to detect whether IFRS and US GAAP protected firms from abnormal sales arising from the outbreak of the crisis, whether the reclassification option under IFRS was an answer to the crisis, and whether IFRS and US GAAP succeeded in regulating shadow banking through their amendments. Therefore, it processes five hypotheses. In order to detect the effects of the crisis on accounting regimes, the analysis focused only on companies from the financial sector composed of the banking industry, insurance companies and shadow banking. The author included firms from Australia, Germany, Greece, the UK and the US, and collected information on 679 financial institutions for the period 2009–2013. The author settled on these time frames because the author aimed to capture IFRS performance surrounding the crisis effects in 2008 and the amendments that followed. In this way, the author applied quantitative methods using only numerical data over a given period.

Findings – The results suggest that the reclassification option was successful, helping firms to perform better amid the crisis, indicating that the manipulation of the crisis was appropriate. It seems therefore that US GAAP should have activated this option for US firms. However, the US may not have hurried to act because its banking sector seemed to recover more quickly than in Australia and Europe. Either way, both regimes need to consider speculative market cases that might have appeared during the crisis, as the author has detected cases of abnormal returns. Finally, concerning regulation of the shadow banking sector, the results seem to be encouraging only with regard to the latest improvements and only for all countries examined.

Originality/value – The project contributes to debate on the reactions of both IFRS and US GAAP during and after the economic crisis. For this, it addresses several questions to investigate the performance of the financial sector under both regimes, identifying possible additional effects and considerations. More specifically, it answers if the fair value orientation actually contributes to the financial crisis through contagion effects, while it addresses additional questions. Have these two global accounting regimes succeeded in overcoming the consequences of the crisis? Have amendments and the introduction of new standards to IFRS and US GAAP achieved regulation of shadow banking? Which of the two has performed better? As aforementioned, the analysis focused only on companies from the financial sector composed of the banking industry, insurance companies and shadow banking firms from Australia, Germany, Greece, the UK and the US, for the period 2009–2013.

Keywords IFRS, US GAAP, Earnings management, Financial crisis, Shadow banking

Paper type Research paper



1. Introduction

After the adoption of official International Financial Reporting Standards (IFRS), over time, they have been affected by many emerging events that have raised questions about their effectiveness, one of the most significant being the 2008 financial crisis. This last crisis appeared in the US banking sector but soon spread to Europe. Many market participants blamed the nature and structure of IFRS, so theoretical research again focused on the fair value orientation of IFRS, seeking to detect any disadvantages under turbulent economic conditions (Mallet, 2008). The crisis tested the cohesion of IFRS, and research assessed their responses to similar situations in different countries. Unfortunately, IFRS appear not to have reached the level of harmonisation and integration needed, as countries did not present any typical reaction to the crisis, while some have yet to recover from its effects. Perhaps for this reason, the International Accounting Standards Board (IASB) has sought to reconsider some traditional accounting tools, even starting a debate on the structure of firms' annual reports [1]. It seems, therefore, that these emerging and challenging situations have prepared the ground for new changes to accounting rules (Hatherly and Kretzschmar, 2011). However, in making such improvements, consideration must also be given to creative accounting.

Creative accounting is a problem for all accounting regimes. This phenomenon becomes more intense during economic downturns (Jones and Oldroyd, 2009), as in the last financial crisis in 2008, when the first victim was accounting regulations (Hughes, 2009). Both IFRS and US GAAP came under scrutiny, so a growing body of literature has examined references to complaints of accounting misconduct, which increased significantly during the credit crisis (Johnson, 2008). Indeed, many studies accuse both IFRS and US GAAP of failing to foresee the crisis, and have focused on their fair value orientation as a reason for them not responding appropriately to the crisis (Wallison, 2008a, b; Whalen, 2008). Other researchers suggest that an immediate relaxation of capital requirements may have been a solution (Laux and Leuz, 2009). To answer this, I need to determine the market and financial effects on reactions of IFRS to the crisis. Indeed, the reclassification option allowed in IFRS opens up a new debate as to whether this option increased the effects of the crisis and information asymmetry, rather than eliminating adverse consequences and protecting firms from abnormal stock market returns.

However, in addition to blaming accounting standards, many studies have examined the performance of the banking sector following the outbreak of the crisis. The literature has focused on the role played by banking and shadow banking in the financial crisis, owing to their elaborate financial measures and vagueness in accounting figures (Heilpern *et al.*, 2009; Lewis, 2009). The shadow banking system consists of institutions such as investment banks and hedge funds that are not subject to the same regulations as commercial banks. They provide services and activities that are fully or partially outside the regular banking system (Claessens *et al.*, 2012). These institutions tried to compete globally, but the results proved that the market participants were unprepared for this step (Claessens *et al.*, 2012; Jackson, 2013). Consequently, their fragility increased (Basu, 2003), and authorities therefore initiated new regulations. Most researchers claim that regulating the capital structure might preserve it from any future crisis (Gorton and Metrick, 2010), as it would reduce inaccuracies (Cole, 2012).

Following this opinion, all responsible authorities tried to enforce a legal framework on the shadow banking sector, and researchers sought to determine key elements in its development. Many blamed shadow banking for its inadequate control mechanisms [2]. For this reason, and to protect the financial system from future anomalies, authorities aimed to tighten accounting regulations relating to shadow banks and instituted regulations to control them. Indeed, both IFRS and US GAAP focused on the banking and shadow banking sectors. They amended and/or introduced new individual standards to regulate these sectors and eliminate similar fraudulent auditing cases based on accounting

misinterpretations in future (Nieschwietz *et al.*, 2000). This was their first attempt to regulate this system, and thus they focused on three crucial issues: revenue recognition, leasing and financial instruments. As a result, the IASB introduced additional improvements to IFRS 7 and IFRS 9, taking effect from 2011 to 2013, respectively [3]. It has already planned the introduction of IFRS 13, dealing with fair value measurement, and may further regulate this sector. Similarly, although it has not yet issued final standards in this area, the FASB introduced US GAAP amendments effective from 2011 that aimed to regulate the banking sector.

However, although many studies analysed the effectiveness of the reclassification option, however, they excluded the banking sector, while research that focused on the banking sector, did not consider the reclassification option. In this order, the paper, aims to investigate the performance of the financial sector under both regimes, identifying possible additional effects and considerations. In this order, it examines if these two global accounting regimes succeeded in overcoming the consequences of the crisis, and analyses if the amendments applied achieved regulation of shadow banking. More specifically, the paper focusses on the stock performance during the outbreak of the last financial crisis, helping, this way, investors to estimate stock reaction on similar emerging events in the future.

Additionally, I sought to critically evaluate if the reclassification option helped firms to recover, and if any recovery has been resulted by the implementation of earnings management and/or market speculations. Finally, the paper scrutinises the effects of IFRS 9 in its pre-2014 format, as it remained available for application to the period on which I was focussing. However, this might provide useful early indications for its performance, helping responsible authorities to evaluate its effectiveness and proceed to any necessary improvement. To my knowledge there are no similar research works that address to all these issues that are vital for accounting researchers and analysts, allowing them for the first time to compare IFRS performance between Europe and the US, and make better investment evaluations. Considering all these, I managed to examine a total of five hypotheses, focused only on companies from the financial sector composed of the banking industry, insurance companies and shadow banking firms from Australia, Germany, Greece, the UK and the US for the period 2007–2013.

The paper proceeds as follows. [Section 2](#) discusses the theoretical background and the literature review. [Section 3](#) describes methods followed, by analysing the hypotheses of the research and the tests performed to examine each one. [Section 4](#) explains the rationale for the chosen data sets and the descriptive statistics of my sample, [Section 5](#) displays the empirical findings and [Section 6](#) summarises the conclusions of this paper.

2. Theoretical background and literature review

The 2008 financial crisis proved to be a critical point for market participants, as it increased suspicion of companies' financials and raised criticisms of accounting regimes. Indeed, many studies blame accounting standards for not foreseeing the crisis, raising concerns about the global sustainability of the financial reporting system. Once again, they focus on and accuse fair value orientation for the crisis, but not for the market reaction or for the straight comparison between US GAAP and IFRS. It seems, therefore, that a new debate has arisen about the causes and effects of fair value, which increase under turbulent conditions (Mallet, 2008). Although fair value rules are not ideal, many insist nonetheless that they are by far the most appropriate method compared with any alternatives, providing much greater transparency and comparability (Brown, 2008). They claim that there is still more timely loss provisioning under IFRS (O'Hanlon, 2013), thus they may provide early warning signals of an impending crisis (Allen and Carletti, 2010).

However, markets operating in an unstable investing environment lack reliable measures (Brown, 2008), which may lead to alterations of income (Ball, 2006). Some studies even suggest that firms would have performed better under old national GAAP. For this reason, the IASB eased fair value accounting standards relating to financial instruments (IAS39 and IFRS7), offering companies a choice of retroactively reclassifying financial assets previously measured at fair value into amortised cost, expanding this reclassification concession to assets that were voluntarily classified. Studies reflect positively on IFRS authorities (Neal *et al.*, 2015), as earnings management decreased for many European firms during the crisis (Kousenidis *et al.*, 2013; Filip and Raffournier, 2014). However, most studies consider the periods 2006–2007 and 2008–2009 to examine the effects of the crisis. It would be interesting also to examine the years 2007–2008, because in many cases firms were engaging in earnings management prior to the crisis.

In contrast, the Financial Accounting Standards Board (FASB) decided not to deviate from its policy. The results vindicate the FASB, as companies that used the reclassification option produced only short-term benefits, leading to greater information asymmetry and reduced transparency, and potentially allowing companies to manipulate some of their figures through creative accounting practices (Ramanna and Watts, 2007). It seems, therefore, that standard setters did not initially succeed in managing these difficult circumstances effectively. Responding to these accusations, in January 2013, the IASB issued IFRS 13, which provides a framework for measuring and disclosing fair value. This is less complex and improves transparency and objectivity. Apart from these obvious advantages that might help to overcome the effects of the crisis, IFRS 13 was the result of joint efforts with the FASB, the US GAAP standard setter. It successfully created a common set of high-quality global accounting standards and, unlike the first attempt, these further improvements may result in greater convergence with US GAAP. Overall, this fair value debate seems to have been a starting point for fundamental and necessary improvements to establish a stable mechanism that will prevail in similar future cases.

Amid these concerns, questions were also raised about whether authorities were prepared for such large and broad changes (Heilpern *et al.*, 2009). The results prove that none of the parties involved was adequately prepared. Even credit-rating companies were unable to estimate the risk of default precisely, leading to many false ratings (Coval *et al.*, 2008). As these complex operations seemed to threaten regulators and authorities, it was essential to update the accounting frameworks, focussing on these symptoms (Hatherly and Kretzschmar, 2011). Under both IFRS and US GAAP, the banking industry took advantage of securitisation transactions and de-recognition of financial asset regulations. Securitisation transactions count as sales, offering banks an opportunity to increase their capital ratios and reduce their needs under the Basel Regulation [4].

During the financial crisis, this accounting window increased (Laux and Leuz, 2010), while the lack of information available to investors and authorities led to irreversible outcomes (Barth and Landsman, 2010). Similarly, de-recognition of financial assets enabled assets to be eliminated from balance sheets, allowing banks to increase their earnings and capital ratios (Ryan, 2008). This enhanced the belief that the banking sector's financials were imprecise (Bushman, 2014), so increased regulations were needed (Chiaromonte and Casu, 2017). Following this, the IASB focused on these two issues and in 2011 initiated several new standards (IFRS 10, IFRS 11 and IFRS 12) improving on IFRS 7, aiming to enhance the banking sector's financial statement disclosures and improve accounting mechanisms. This enforcement also affected the shadow banking sub-sector.

In Europe, in contrast, most financing is still undertaken by traditional credit institutions. For this reason, and since shadow banking poses greater systemic risk than traditional banking, official concerns have increased, focussing on several issues, including the scale of shadow banking, regulatory gaps, regulatory arbitrage and the complexity of the shadow

banking system. This may also have resulted from reducing the size of shadow banking, increasing its concentration (Beck *et al.*, 2006), or lessening interconnections between commercial and shadow banking entities (De Jonghe, 2010). On the other hand, some consider that regulating shadow banking may make matters worse if it prevents banks from taking any risks at all (Ordonez, 2013). Restrictions on capital requirements will result in limited interest from investors, leading to decreased funding opportunities (Harris *et al.*, 2014) and greater risk (Plantin, 2015). Overall, capital structure costs, financial regulation and audit innovation must be considered together in order to prevent similar future risks (Adrian and Shin, 2009; Schoenmaker, 2016).

For these reasons, authorities in both Europe and America have sought to enforce a legal framework on the shadow banking sector. IFRS must be sufficiently strict; otherwise, it is pointless discussing any shadow banking regulation. Therefore, apart from the improvements to IFRS mentioned in the previous sub-section, and owing to continued criticism of IAS 39, the IASB introduced IFRS 9. IFRS 9 introduced changes to the classification, measurement and impairment assessment requirements for the financial industry, including new requirements on hedge accounting. This implemented simpler and more accurate recognition and measurement rules, aimed at reducing volatility and controlling inadvertent risk. Since it was published only recently, few studies have focused on its effectiveness. Onali and Ginesti (2014) indicate a positive market reaction to its announcement. However, it is too early to conclude whether it has succeeded in regulating both traditional and shadow banking systems. Indeed, there exist very few papers in respect to IFRS 9 in the past few years, indicating that IFRS 9 performance estimation is still in its infancy. In this order that are early indication that the banking sector in Lebanon is not expected to display a material decrease in their equity as a result of the first-time adoption of IFRS 9 (Dib and Khalil, 2021).

Overall, until recently, most studies have tended to focus on listed firms other than banks, owing to differing reporting regulations, and only a few recent papers have sought to explore this issue further. These studies mainly indicate that the financial sector, i.e. banking and insurance companies, may use earnings management techniques to hide their economic problems (Bushman, 2014), so increased regulation is needed (Chiaramonte and Casu, 2017). Additionally, there are studies that exhibit that under IFRS banks produce more accurate figures for profitability (Ballas *et al.*, 2019), while other researchers suggest that local GAAP allows a more refined assessment of financial performance for banking sector, suggesting that local GAAP is a better tool for investors willing to acquire banking institutes (Akgün, 2022).

After the crisis, both IFRS and US GAAP authorities introduced several improvements to their enforcement relating to financial institutions, so it might be expected that these amendments would have helped with market regulation. However, it is unclear how financial companies have responded to these measures, since studies have not focused on specific improvements, such as IFRS9, but have examined authorities' strategies as a whole. Thus, the results for these institutions seem to be less pronounced because although these measures sound beneficial in theory, little is known about their potential effects in practice. It seems, therefore, that recent literature has failed to consider whether specific amendments to accounting regimes have been effective in responding to the effects of the crisis, or whether accountants and investors should pay greater attention to the new regulations. The literature does not fully explain whether the reclassification option has been appropriate, how weaker economies have responded to the crisis, and whether stock markets have recovered from their losses. Similarly, there has been little in-depth empirical exploration of shadow banking in recent years.

3. Hypotheses development and models

The study sought to detect whether IFRS and US GAAP protected firms from abnormal sales arising from the outbreak of the crisis, whether the reclassification option under IFRS was an

answer to the crisis, and whether IFRS and US GAAP succeeded in regulating shadow banking through their amendments, by processing the next five hypotheses. To ascertain these hypotheses, I involved quantitative research design. Based on secondary numerical data and performing accurate statistical models, I managed to examine the five hypotheses, concerning the performance of IFRS and US GAAP. This design tends to generate data that could be collected and expressed in the numeric form, ready to be analysed and presented statistically (Backman, 1998). As it follows, a formalised structure, along with all its assumptions, it seems perfect for the scope of the study to answer the research questions and to examine its hypotheses, assessing this way the effectiveness of IFRS. Within this context and based on a high level of reliable numeric data and statistic processing, I intended to focus on verifiable facts, leading to conclusions which are generally replicated in a data-driven process (Hambrick, 2007). The following paragraphs describe the hypotheses examined as well as the selected methods for their analysis.

H1. The outbreak of the crisis negatively affected stock performance in the financial sectors in Europe, Australia and the US.

In 2008, an international economic crisis started to appear, affecting mainly the financial sector. In every crisis, many events may affect the performance of securities and may be unexpected, as in the bankruptcy of Lehman Brothers (PwC, 2009), which proved a pivotal incident in the crisis that nobody had predicted. Indeed, most banking and insurance companies seemed to have serious balance sheet problems that triggered investors' interest. On the other hand, many insist that, even in these cases, investors had access to internal information and may have engaged in speculation on the stock markets. Therefore, I aimed to examine the market reactions of bank stocks from Europe and the US to this major international event. In other words, I sought to determine whether the crisis resulted in significant abnormal returns in stock markets, and whether this might be attributable to a normal overreaction, or was due to well-planned speculative intentions.

Examining firms' performance under such conditions might also help us to determine the necessary timeframe for companies to recover their stock prices, and any common assumptions that might help us to react better to similar future cases, as the effects of the crisis seem to be on-going. I considered, therefore, that it would be particularly interesting to estimate any abnormal returns of financial companies from Australia, Germany, Greece, the UK and the US during the Lehman Brothers incident, in order to detect the short-term reactions of these markets.

In this order, the author calculates the *Abnormal market returns (AR)*. AR is the difference between the actual performance of a firm and its expected returns. For this reason and to calculate these measurements, I chose to apply the event study methodology based on the market model method (Strong, 1992), as represented by the following equation:

$$AR_{i,t} = R_{i,t} - (a_i + b_i R_{m,t}) + e_{i,t} \quad (1)$$

where $AR_{i,t}$ is the abnormal returns of security i in period t ; $R_{i,t}$ is the return on security i in period t , calculated as $\text{Log} [(P_{i,t} + D_{i,t})/P_{i,t-1}]$, where $P_{i,t}$ is the price of the security at the end of period t ; $D_{i,t}$ is the dividend paid during period t ; $P_{i,t-1}$ is the price of the security at the end of period $t-1$, adjusted for any capitalisations to make it comparable with $P_{i,t}$; a_i is the intercept for security i ; b_i is the beta coefficient, which measures the sensitivity of security i to the market and is a measure of risk; $R_{m,t}$ is the return of the stock market m in period t ; and $e_{i,t}$ is the statistical error term.

To estimate the return of the stock market ($R_{m,t}$), I used ASX for Australia, DAX for Germany, ASE for Greece, FTSE for the UK and DJIA and NASDAQ for the US. A positive AR means that a stock performed better than the market, while a negative one indicates that

the stock underperformed the market. The author focused on an estimation window five days before and after the effective date of the event, 15 September 2008 (the date on which Lehman Brothers filed for bankruptcy) [5]. Finally, $CAR_{i,t}$ is the cumulative abnormal market return for firm i in year t .

H2. Use of the reclassification option has resulted in financial statement effects.

To alleviate the effects of the crisis, authorities in Europe allowed deviations in IFRS values. More specifically, the IASB amended individual standards IFRS 7 and IAS 39, permitting banking firms to reclassify some of their assets that had previously been measured at fair value, under restrictive rules and disclosures. These amendments were effective from July 2008; however, as revealed in the literature review, there were cases of prudential ratio violations, and references to complaints of accounting misconduct increased significantly following the outbreak of the credit crisis (Johnson, 2008). In addition, some have even criticised the extremely short notice procedure which was followed, rather than the regular standard-setting process. In contrast, the FASB decided not to suspend fair value accounting for US firms, also affecting the accounting measures of US banks. Exploring this hypothesis provided a good opportunity to compare the different reactions of IFRS and US GAAP to the outbreak of the crisis, and to investigate firms' performance as a result of these modifications.

This hypothesis, as well as the next two hypotheses aimed to analyse the extent to which these two boards' different decisions affected the banking sector. The analysis focused on the years 2007–2009, in order to detect the long-term effects of the reclassification option. Furthermore, the author focused on companies operating in the financial sector from Australia, Germany, Greece, the UK and the US; however, since the US had many more financial listed firms than the other countries examined, I decided to merge the sample of these countries and compare this new data set with the US. In this way, I was able to achieve better statistical significance. Finally, to estimate whether a firm used the reclassification option, I focused only on the choice of a company to adopt this amendment, rather than on details of the disclosure [6].

3.1 Test: financial statement effects of reclassification option

In this first test, I proposed to detect any financial effects following the introduction of the reclassification option. For this, I used the following logistic regression model:

$$RR_{i,t} = a_0 + a_1 Size_{i,t} + a_2 Profitability_{i,t} + a_3 Leverage_{i,t} + e_{i,t} \quad (2)$$

where $RR_{i,t}$ is a dummy variable indicating the country and the reclassification option, equalling 0 for firms that did not reclassify, 1 for reclassified and 2 for US companies; for other variables, see Appendix, Table A1; $e_{i,t}$ is the error term.

H3. Use of the reclassification option has resulted in increasing accruals.

The reclassification option will have been more useful if it succeeded in preserving lower discretionary accruals for firms that chose to follow this option. Thus, correlation between accruals and this option is highly important. For this purpose, I used two tests for this hypothesis:

3.2 Test 1

Starting from the need to detect any decrease in accruals for reclassified companies, the following logistic regression was performed for year sets 2007–2008 and 2007–2009. A negative $DAC_{i,t}$ value could be a reference.

$$RR_{i,t} = a_0 + a_1 DAC_{i,t} + a_2 Size_{i,t} + a_3 Profitability_{i,t} + a_4 Leverage_{i,t} + e_{i,t} \quad (3)$$

where $RR_{i,t}$ equals 0 for the first examination year and 1 for the second; $DAC_{i,t}$ is discretionary accruals estimated using the cross-sectional Jones (1991) model [7]; other variables are as described in Appendix, Table A1; and $e_{i,t}$ is the error term.

3.3 Test 2

Moving a step further, I also sought to observe the performance of firms that did not adopt the reclassification option, as well as US firms. For this reason, the author focused on the years 2008 and 2009, and followed the linear regression below:

$$DAC_{i,t} = a_0 + a_1 DV_{i,t} + a_2 DV_{i,t} Size_{i,t} + a_3 DV_{i,t} Profitability_{i,t} + a_4 DV_{i,t} Leverage_{i,t} + e_{i,t} \quad (4)$$

where $DAC_{i,t}$ is discretionary accruals estimated using the cross-sectional Jones (1991) model. $DV_{i,t}$ is a binary dummy variable, equalling 0 or 1 according to a number of cases: in the first case, $DV_{i,t}$ equals 1 for reclassified companies and 0 for non-reclassified companies; in the second case, $DV_{i,t}$ equals 1 for US companies and 0 for reclassified; and in the last case, $DV_{i,t}$ equals 1 for US firms and 0 for non-reclassified companies. Other variables are described in Appendix, Table A1; and $e_{i,t}$ is the error term.

H4. Use of the reclassification option added market value for listed companies.

3.4 Test: reclassification and abnormal returns

In this hypothesis, the project proposed to detect the market reaction to the announcement of the reclassification option. For this reason, the author performed exactly the same methods as adopted in the 2nd test of H3 (Equation (4)), for the same examination years, with identical $DV_{i,t}$ value categorisation. The only difference was that, instead of accruals ($DAC_{i,t}$), I considered firms' annual cumulative abnormal returns ($CAR_{i,t}$) as the dependent value.

H5. Amendments to both IFRS and US GAAP have improved the accuracy of the shadow banking sector

Through this hypothesis, I aimed to analyse the performance of the amendments to IFRS 7 and IFRS 9 that took effect from 2011 to 2013, respectively, and to compare these improvements with corresponding US GAAP improvements. For this purpose, I estimated the following tests, concentrating on information asymmetry, value performance and earnings management. The tested years were 2010 versus 2011, and 2012 versus 2013. If accounting regimes performed better in the years 2011 and 2013, then the amendments could be considered successful. Finally, the data set consisted of shadow banking companies listed in Australia, Germany, the UK and the US, excluding Greece since its stock market has no shadow banking companies.

3.5 Test 1: information asymmetry

Information asymmetry models assume that at least one party in a transaction has relevant information, whereas the other does not. For this reason, the introduction of amendments to both regimes aimed to provide better quality financial reporting in order to decrease information asymmetry (Leuz and Verrecchia, 2000) for all interested parties in the investment environment. However, as this notion reflects many measures, income volatility and value relevance were used as proxies for information asymmetry.

(1) Income volatility

In this test, the author aimed to detect any volatility in accounting figures. For this reason, I performed an *F*-test for the standard deviation of ratios (Appendix, Table A1). A high standard deviation would indicate high volatility, and high volatility would indicate low information asymmetry. Thus, the higher the standard deviation, the better will be the information for investors.

(2) Value relevance

Value relevance is the ability of the information disclosed in financial statements to capture and summarise the firm's value. Increased value relevance leads to higher accuracy, higher-quality accounting amounts and consequently lowers information asymmetry. For this reason, the following ordinary least squares (OLS) regression was performed (Burgstahler and Divchev, 1997; Ohlson, 1995).

$$P_{i,t} = a_0 + a_1 BVPS_{i,t} + a_2 NPPS_{i,t} + e_{i,t} \quad (5)$$

where $P_{i,t}$ is the firm's price at the end of the year; $BVPS_{i,t}$ is the firm's book value scaled by the total number of shares; $NPPS_{i,t}$ is the firm's net profit deflated also by the number of shares; and $e_{i,t}$ is the error term.

For this regression, the author examined the explanatory power of the regression (R^2), which was expected to be higher after the improvements. Furthermore, as book value and net profit are the main measures of value relevance, meaning that higher book value indicates better accounting quality, it was also expected that after the amendments, these measures would exhibit higher significant positive coefficients (Burgstahler and Divchev, 1997; Ohlson, 1995).

3.6 Test 2: impact of firm value

It is believed that markets impact on accounting events (Barth and McNichols, 1994), and investors react positively to amendments to accounting regimes. This study evaluated investors' reactions to the above improvements in the shadow banking industry, taking into account changes in the actual value of the firm. This value perception was based on Tobin's *q* assessment, as measured by Daske *et al.* (2007). The higher the Tobin's *q* score for a firm, the higher the value of the firm, as it reflects greater investor confidence in the firm's growth potential (Daske *et al.*, 2007). For this reason, based on Elbannan's (2010) model but with slight differences [8], the following logistic regression model was used:

$$RR_{i,t} = a_0 + a_1 \Delta Tq_{i,t} + a_2 \Delta TA_{i,t} + a_3 LEV_{i,t} + a_4 MV_{i,t} + e_{i,t} \quad (6)$$

where $RR_{i,t}$ is a dummy variable of the year, with 0 representing the most recent year prior to the amendments (2010 and 2012) and 1 representing the year after (2011 and 2013); $\Delta Tq_{i,t}$ represents the change in Tobin's *q* scaled by total assets; Tobin's *q* is calculated as total assets – book value of equity + market value of equity (Daske *et al.*, 2007); $\Delta TA_{i,t}$ is measured as the change in total assets; $LEV_{i,t}$ is measured as total liabilities divided by total stockholders' equity; $MV_{i,t}$ is the natural logarithm of the market value of equity; and $e_{i,t}$ is the error term.

A positive $\Delta Tq_{i,t}$ figure would suggest an increase in the market value of the sample firms after the improvements, and a negative change in *q* would suggest a decrease in firm valuation, meaning that any amendments had been insufficient to earn investors' trust and increase firms' value.

3.7 Test 3: earnings management

To test earnings management, the author focused again on discretionary accruals based on Jones's (1991) model, as described, proceeding to the following three sub-tests.

- (1) A Pearson correlation was performed between discretionary accruals (DAC) and operating cash flow (OCF) for the years before and after the improvements to detect any indications of decreasing usage of accruals. A positive correlation might be a reference, as this would mean that managers no longer responded to low cash flows by increasing firms' accruals (Myers and Skinner, 2002; Land and Lang, 2002).
- (2) Moreover, based on Tendeloo and Vanstraelen's (2005) model, the study aimed to examine accruals performance before and after the amendments, linked with size, profitability and leverage ratio. For this, the following logistic regression was performed:

$$RR_{i,t} = \alpha_0 + \alpha_1 DAC_{i,t} + \alpha_2 Size_{i,t} + \alpha_3 Profitability_{i,t} + \alpha_4 Leverage_{i,t} + e_{i,t} \quad (7)$$

where $RR_{i,t}$ equals 0 for the first examination year (2010, 2012) and 1 for the second (2011, 2013); $DAC_{i,t}$ is the discretionary Jones (1991) model accruals; other variables are as described in Appendix, Table A1; and $e_{i,t}$ is the error term.

- (3) Finally, concerning the quality of accruals after the accounting improvements, the following model was used:

$$\Delta WC_{i,t} = \alpha_0 + \alpha_1 OCF_{i,t} + e_{i,t} \quad (8)$$

where $\Delta WC_{i,t}$ is the change in working capital scaled by total sales; $OCF_{i,t}$ is the operating cash flow for firm i in fiscal year t , scaled by total sales; and $e_{i,t}$ is the error term. A higher R -squared would reflect high earnings quality and lower potential for income smoothing.

4. Data set and descriptive statistics

4.1 Data sample and statistics

In order to detect the effects of the crisis on accounting regimes, the analysis focused only on companies from the financial sector composed of the banking industry, insurance companies and shadow banking. The author included firms from Australia, Germany, Greece, the UK and the US, and collected information on 679 financial institutions for the period 2007–2013. I settled on these time frames because I aimed to capture IFRS performance surrounding specific events, as described in the models of each hypothesis in the precious chapter. In this way, I applied quantitative methods using only numerical data over a given period. More specifically, the inputs into the research models consisted of continuous numerical independent variables used to compare the performance of dependent variables in parametric tests. For this reason, I gathered the data from databases such as Amadeus and Screener to gather financial measure, and databases such as Factiva and LexisNexis to access companies' announcements. Furthermore, the author searched separately for each firm's financials, been recourse to economic websites such as Bloomberg, MarketWatch, Morningstar and The Financial Times, or similar official websites that offer firms' annual reports and statements.

For the main data analysis, the author performed several parametric statistics, such as Pearson's correlation coefficient, binary logistic regression analysis and OLS regression analysis. In addition, independent sample F -tests and t -tests were performed to test the accuracy of the standard deviation and significance of the mean respectively, to contribute to the comparability of the index across values (Pallant, 2005). Each test described in the previous chapter, used for analysing specific value categories according to the needs of each hypothesis. All these tests were assessed according to the relative significance of the estimated coefficients (p -value < 0.01, two-tailed), and additional parameters were also

measured. The parameters for logistic regressions were determined based on the maximum likelihood method, while for the OLS regression, the White test was performed, focussing on the correlation coefficients amongst the test variables and the *R*-squared measure. The predictive accuracy of the models and the consistency of the estimates were assessed in this way, while the project considered the assumptions of linearity, normality, homogeneity and independence. Finally in most cases, the dependent variables were categorical variables classified as dichotomous, while I also used discrete independent variables, which were used in some cases as moderator variables (Baron and Kenny, 1986). Details of the variables selected are given in [Appendix, Table A2](#).

4.2 Descriptive statistics

[Table A3 \(Appendix\)](#) reports the descriptive statistics of the sample. These provide a better understanding of the particularity of the data set, and will assist in explaining the main analysis and results. In particular, the author represent the descriptive statistics for the financial sector under IFRS (Panel A1) and under US GAAP (Panel A2). Statistics reflect early signs that, during the crisis, neither of the accounting regimes managed to prevent a decrease in the ratios. It appears, therefore, that under crisis conditions, size, profitability and leverage ratios reduced in Australia, Germany, Greece, the UK and the US. The results in the next year for both regimes were similar, but with indications of slight improvements. After the first shock, companies' size measures (SALESHA for IFRS, RESTAS for US GAAP) increased, with cases of better leverage (DEBT for both), but their profitability did not increase. Based on these first indications, IFRS and US GAAP showed common reactions on key measures during the crisis.

Furthermore, as most commentators considered that in order to prevent such situations in the future, it was essential to regulate the shadow banking sector, both regimes implemented drastic amendments for this purpose. The results (Panel B) indicate that the first set of improvements (2010–2011) caused contradictory outcomes for IFRS firms, as there is no clear picture on ratio effects, apart from profitability and leverage which were lower. On the other hand, under US GAAP for the same period, all firms' accounting measurements decreased, while firms' value (Tobin's variable) decreased under both standards. Nevertheless, statistics concerning the second set of improvements (2012–2013) are more encouraging, as companies displayed improved ratios. Once again, the two standards seemed to perform similarly, as both IFRS and US GAAP firms increased their size, investment, growth and leverage ratios. However, US GAAP adopters overperformed on profitability and liquidity measures, compared with IFRS firms which did not manage to follow suit. Overall, the results indicate that the two regimes performed similarly.

5. Empirical findings

In this chapter, the author interprets, discuss and analyse in detail the empirical results obtained. Since the volume of statistical results for each hypothesis is huge, I have chosen to present all the detailed findings in tables in [Appendix](#). All critical measures are highlighted and explained in detail during the presentation of the results.

5.1 Results for HI

As many people blame the IFRS and US GAAP for the development and transmission of the crisis, it is vitally important to determine financial sector performance at the peak of the crisis. For this reason, I focussed on abnormal returns in order to examine any extreme stock reactions in this sector. The analytical results ([Appendix, Table A4](#); aggregated in [Table 1](#)) indicate that the outbreak of the crisis had negative effects on the Australian and European banking sector. On the other hand, the US did not seem to report great losses on the day that Lehman's became bankrupt.

Event day	Australia	Germany	Greece	UK	NYSE	NASDAQ
Positive AR	33.33%	14.29%	0.00%	50.00%	72.41%	58.97%
Negative AR	66.67%	85.71%	100.00%	50.00%	27.59%	41.03%
<i>5-Days CAR</i>						
Positive	50.00%	25.00%	0.00%	84.62%	97.30%	94.55%
Negative	50.00%	75.00%	100.00%	15.38%	2.70%	5.45%
<i>10-Days CAR</i>						
Positive	71.43%	20.00%	25.00%	69.23%	94.12%	91.94%
Negative	28.57%	80.00%	75.00%	30.77%	5.88%	8.06%

Table 1.
Aggregated results for
AR and CAR

Note(s): * These statistics were calculated based only on significant results

Furthermore, the results show that cumulative abnormal returns (CARs) for most companies in all the countries examined returned to positive values as early as 10 days after the incident, indicating that investors trusted both regimes and authorities, since they seem to have taken all the necessary measures. The only exceptions were Germany and Greece, but even in these countries the results improved. It seems, therefore, that there was a normal recovery process, comparable to markets' performance after sudden events such as terrorist attacks (Raby, 2003). However, such occasions are extremely unexpected, but there are cases of turbulent conditions long before the Lehman Brothers' issues, providing investors with time to plan possible speculation procedures.

An additional factor must be taken into consideration. As mentioned earlier, abnormal returns express the difference between a company's expected and realised performance. The calculation of expected performance is based on the general stock market index; hence, when there are positive abnormal returns, as in the case of the US, this does not mean that stocks did not go down, but that they may not have decreased as much as expected. Furthermore, AR and CAR calculations depict the reaction at a specific time point, rather than the trend in the measure examined.

For this reason, Figure 1 seeks to illustrate the continuum of AR 10 days before and after the event and detect any suspicious cases.

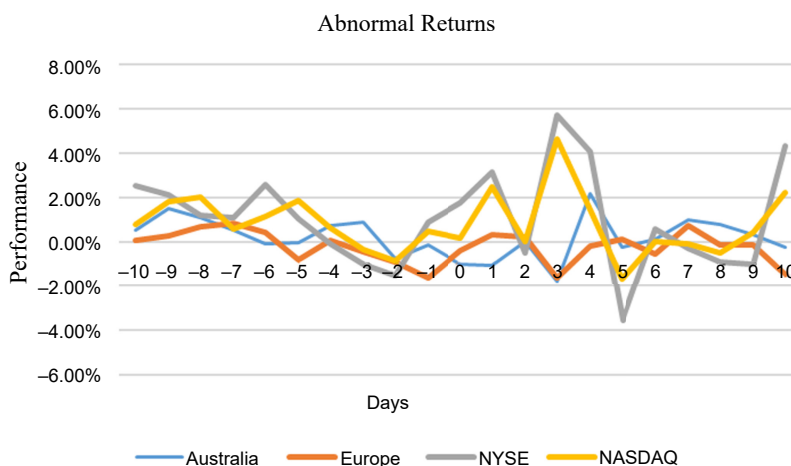


Figure 1.
Abnormal returns
before and after
Lehman's Brothers'
bankruptcy

The results shown in [Figure 1](#) reveal some interesting points. Australia and Europe seem to have a smooth curve. Europe has the most stable line, as it appears that any losses in Germany and Greece were counterbalanced by better performance by the UK. Furthermore, all examined countries one or two days before the event exhibited an increase in abnormal sales, which may be the evidence of information leakage because without inside information, abnormal returns should not have been significantly different from zero until the event day. However, the most impressive factor is the extreme volatility displayed by the US markets, both NYSE and NASDAQ, after Lehman's collapse.

In previous indications ([Table 1](#)), US markets seemed to act normally, and nothing predicted this irregular US behaviour, not even the slight decrease in their positive 10-day CARs. Nevertheless, this raises concerns about the reasons for this performance. Is it attributable to the crisis or to speculation? In fact, investors may have considered various listed companies to be more vulnerable than others; thus, it seems that some companies extremely underperformed, while others extremely over-performed during the crisis. On the other hand, this move has the typical characteristics of speculation, as firms increased their prices at first, and two days later suddenly decreased their values. These cases are highly important and require further examination. Overall, the results in [Figure 1](#) provide clear evidence that [H1](#) holds, as the crisis influenced firms' performance in all countries examined.

5.2 Results for [H2](#)

The reclassification option was the most determinant action of IFRS for alleviating the crisis. The results of the first tests ([Table 2](#)) indicate that this action was successful. The test of this hypothesis aimed to outline the differences between three categories of companies: those that chose to re-classify, those that did not adopt this option, and US firms that did not have this possibility. Although the first category of firms (Panel A) exhibited lower size ratios prior to implementing this option (RESTAS), it appears that after adoption they increased their size measures, kept their higher profitability (ROSC, NPM) and managed to lower their leverage (CGEAR) (Panel B and C). In a period of crisis, this performance is highly important.

5.3 Results for [H3](#)

Moreover, US firms, without any help, also managed to lower their debt measures (ETL). Thus, firms seem to have preferred not to reclassify their assets, and displayed lower size and earnings ratios, with increased leverage during the two years examined. Since reclassified firms managed to lower their accruals for this period ([Table A5/Panel A](#)), it appears that the IFRS Board's action was appropriate, contrary to many researchers' predictions that this option would be a window to earnings management procedures. However, these results must be refined, focussing on the characteristics of these firms in conjunction with their accruals performance and abnormal returns. Furthermore, the outcome of this test addresses only reclassified firms, without comparing them with other categories, as in the following results.

[Appendix, Table A5/Panel B](#) presents the OLS regression results for accruals. Although reclassified firms lowered their accruals, in their first reclassifying year they displayed a positive correlation with accruals (DV) compared with non-reclassified firms. The tumultuous conditions and the implementation of a new unknown procedure seem to have resulted in this temporary outcome, as in 2009 the DV value returned to negative. Furthermore, compared with the others, US firms, whether reclassified or not, exhibited a positive correlation with accruals for all years. This performance may indicate either that the effects of the crisis were more severe for US companies or that US GAAP should have adopted the reclassification option. The results also demonstrate that the profitability ratios (OPM) of

Panel A: 2007

<i>Reference Category</i>	Non Reclassified Firms
<i>Cases Included in Analysis</i>	356
<i>Missing Cases</i>	33
<i>Total</i>	389
<i>Accuracy Rate</i>	91.60%
<i>Likelihood Ratio Test</i>	173.488

Reclassified firms			US firms		
Variables	Coefficients	Sig	Variables	Coefficients	Sig
RESTAS	−5.499 (3.307)	*	NAVSH	0.109 (0.062)	*
ROSC	9.493 (5.652)	*	PLOWB	0.184 (0.068)	***
CGEAR	−0.176 (0.106)	*	ETL	0.456 (0.232)	**
Intercept	−0.221 (1.729)		Intercept	10.044 (2.542)	***

Panel B:2008

<i>Reference Category</i>	Non reclassified firms
<i>Cases Included in Analysis</i>	365
<i>Missing Cases</i>	24
<i>Total</i>	389
<i>Accuracy Rate</i>	88.80%
<i>Likelihood Ratio Test</i>	215.425

Reclassified firms			US firms		
Variables	Coefficients	Sig	Variables	Coefficients	Sig
NAVSH	0.076 (0.045)	*	NAVSH	0.092 (0.045)	**
ROSC	5.739 (2.780)	**	PLOWB	0.022 (0.009)	**
DEBT	0.037 (0.020)	**	ETL	−8.786 (2.929)	***
Intercept	−2.538 (1.205)	**	Intercept	9.085 (1.586)	***

Panel C: 2009

<i>Reference Category</i>	Non Reclassified Firms
<i>Cases Included in Analysis</i>	366
<i>Missing Cases</i>	23
<i>Total</i>	389
<i>Accuracy Rate</i>	91.50%
<i>Likelihood Ratio Test</i>	181.913

Reclassified firms			US firms		
Variables	Coefficients	Sig	Variables	Coefficients	Sig
NAVSH	0.078 (0.039)	**	NAVSH	0.082 (0.036)	**
NPM	9.367 (6.782)	*	PLOWB	0.023 (0.015)	*
CGEAR	−0.579 (0.204)	***	ETL	−10.215 (4.567)	**
Intercept	−2.215 (1.342)	*	Intercept	10.862 (2.132)	***

Note(s): *, ** and *** indicate statistically significant factors at 10, 5 and 1% (two-tailed) level respectively

Table 2.
H2 Multinomial logistic regression

reclassified firms were significantly negative in relation to discretionary accruals. This is critical, as firms in this category exhibited higher earnings than firms that did not choose to reclassify (Test 1) and, as proved by this outcome, this higher earnings performance was accompanied by lower accruals during the crisis.

5.4 Results for *H4*

An unexpected outcome was the negative association between accruals and leverage (ETL) for reclassified firms, as this may indicate that disclosers with low leverage ratios tended to increase their accruals and, as previously analysed, reclassified firms decreased their leverage. Furthermore, the results indicate that US firms underperformed compared with both reclassified and non-reclassified companies, as they showed signs of a positive relation between accruals, profitability (OPM, ROCE) and leverage (INTCOV). Similarly, the results of this hypothesis ([Appendix, Table A6](#)) depict that reclassified firms performed well. They demonstrated lower abnormal returns during the crisis compared with non-reclassified firms (DV value), and exhibited a positive association between abnormal returns and leverage ratios (CGEAR, DEBTE), proving that low leveraged firms provide low abnormal returns. Finally, US firms appear to have achieved less successful results, given the positive correlation with abnormal returns (DV). Overall, the outcomes indicate that all three previously mentioned hypotheses are accepted: IFRS reacted successfully to the crisis with its reclassification option, absorbing any possible statement effects and accruals increase.

5.5 Results for *H5*

The first test of this hypothesis aimed to detect any improvements in ratios following the disclosure amendments for the shadow banking sector under both regimes. The results are based on the fact that the higher the volatility, the better the improvement. In Australia ([Appendix, Table A7/Panel A](#)), for the first year of improvements, firms exhibited more volatile size (SALESHA) and profitability measures (PLOWB), while no safe conclusion can be drawn on the other measures. The outcomes for the compared years 2012–2013 are more obvious, as companies tended to exhibit more volatility in all ratios. Investment (DIVCOV, PE) and profitability (PLOWB, OPM, NPM) ratios were considerably more volatile in 2013, and the same picture is presented for liquidity (CUR, QUI) and leverage (ETL, INTCOV). These facts may be early indications that the second set of IFRS improvements positively affected the shadow banking sector in Australia.

Similarly, Germany performed equally well under both sets of years examined, with more volatile investment (DIVYI, PE), profitability (PLOWB, OPM), liquidity (CUR, QUI) and leverage (ETL, INTCOV) measures. The outcomes for the UK were similar, as it also displayed more volatile variables. On the other hand, the results for US companies were less promising. US GAAP implemented only slight improvements to the banking sector, as their final developments would be presented a few years later; nonetheless, firms exhibited lower volatility in investment (DIVCOV, PE), profitability (PLOWB, OPM), liquidity (CUR, QUI) and leverage (DEBT, INTCOV) ratios for the years 2010–2011. They reacted better in the second year of comparison, as apart from leverage (DEBT, INTCOV), which still reported lower volatility, the other measures performed better.

Furthermore, the next test ([Appendix, Table A7/Panel B](#)) is in most cases consistent with the previous results. Thus, although Australia exhibited the highest *R*-squared in 2011, it also presented the lowest BVPS, indicating that the first set of amendments was confusing for the Australian shadow banking sector. On the other hand, BVPS and NPPS had their highest values in 2013, and given that their *R*-squared was similar, the results confirm that the second set of improvements was effective. Germany and the UK also showed signs of on-going improvements in performance, as they exhibited significantly positive coefficients of BVPS and NPPS, and both displayed their highest *R*-squared in 2013. The results in the US were similar to Australia. Although neither performed well in the first year of the first test, they exhibited their highest *R*-squared in 2011. Furthermore, also like Australia, the US exhibited its highest BVPS value in 2013, indicating that the second set of US GAAP improvements was more effective.

This performance seems also to have affected firms' value, at least for Australian and US companies (Appendix, Table A7/Panel C). Indeed, as these two countries reacted better to the accounting improvements that took effect in 2013, this behaviour was reflected in firms' higher value (ΔTq) for both countries for 2013 compared with 2012, while it was lower for 2011 compared with 2010 (first set of improvements). Germany's performance was also similar. Although the first tests revealed that Germany achieved better results for all examined years, its firms' values increased only in 2013. Finally, UK shadow firms did not succeed in increasing their value, even though the previous results indicated that UK companies were positively affected by the IFRS improvements. Investors may have been too critical in this case, or IFRS may not have disseminated appropriate information.

Finally, the last set of tests for this hypothesis concentrated on earnings management after the IFRS and US GAAP improvements. In the first sub-test, the results reveal that accruals and operating cash flows exhibited a positive correlation for all countries from 2011 to 2013 (Panel D, Test 3a). Although they exhibited a negative correlation in 2010, the regulations introduced seem to have eliminated cases where shadow banking firms used accruals in order to increase their low cash flows (Land and Lang, 2002). This is an impressive outcome. The only exception to this performance was the results for Germany in 2011, where the correlation was still negative. This may be one reason why firms' value did not increase in Germany in 2011, or why accruals did not decrease. Indeed, the results of the next sub-test (Panel D, Test 3b) depict an increase in accruals for German companies, despite the improvements. In Australia, on the other hand, accruals decreased for both year sets, while in the US and the UK only for 2013.

The results of the third sub-test (Panel D, Test 3c) also reveal interesting details concerning accruals quality. Australia and the US not only managed to decrease their accruals, but also succeeded in improving their quality. Australia had by far the best reaction in accruals quality in 2013, exhibiting the highest R-squared, while Germany and the UK saw little improvement in quality. After each set of improvements, their accruals quality was lower. Therefore, H5 is rejected, as there are no strong indications that all amendments of both regimes impacted positively on accuracy in the shadow banking sector. In particular, IFRS authorities should pay more attention to this point, as the combination of all these results indicates that IFRS improvements were unsuccessful for Germany and the UK.

6. Conclusions and limitations

The results of the paper reveal interesting and contemporary insights into the performance of IFRS and US GAAP following the crisis, aiming to discover how these regimes responded to the last economic crisis. The analysis presented in the previous section revealed interesting findings relating to IFRS performance. Table 3 displays my key findings.

Literature review refers to many papers that have been concerned with the fair value orientation introduced by IFRS. It turned that fair value defenders had not considered emerging effects such as the economic crisis in 2008, while on the other hand fair value opponents had also underestimated the IFRS tools' effectiveness in dealing with such financial phenomena. The results suggest that the reclassification option was successful, helping firms to perform better amid the crisis, indicating that the manipulation of the crisis was appropriate. It seems therefore that US GAAP should have activated this option for US firms. However, the US may not have hurried to act because its banking sector seemed to recover more quickly than in Australia and Europe. Either way, both regimes need to consider speculative market cases that might have appeared during the crisis, as I have detected cases of abnormal returns. Finally, concerning regulation of the shadow banking sector, the results seem to be encouraging only with regard to the latest improvements and only for all countries examined.

Table 3.
Key findings

Hypothesis	Country	Results
H1	Australia	Negative market effects
	Europe	Negative market effects
	US	Not great loses
H2-H3-H4	Reclassified firms	Increased their size, kept their profitability and lower leverage
	Non reclassified	Lower size and earnings, increased leverage
H5	Australia	IFRS improvements have positively affected earnings management
		Decreased accruals – improved Quality
	Germany–UK	IFRS improvements have positively affected earnings management
		Not improved quality
	US	Lower ratios after improvements
		Decreased accruals – improved reality

In all cases, I need to await the official changes to US GAAP, while further actions should be considered for IFRS, as Germany and the UK have failed to regulate their shadow banking sector. Overall, IFRS seem to have accomplished their vision of greater transparency and integrity, but further steps must be taken in order to entirely realise their objectives. Indeed, results prove that every case, firm and year had unique characteristics, which had different effects on their performance. For example, Australia exhibited major differences from European countries, and more interestingly, Australian shadow companies acted more similarly to US than European firms. Therefore, IFRS seem not to be appropriate for Australia or may differ from A-IFRS. More information on each individual firm and country, as well as high configuration tools that would offer appropriate and targeted amendments may be a solution.

As previously stated, this research has both practical and theoretical implications, since I intend to familiarise market participants with the concept of earnings management and market speculation, to suggest how these phenomena might be eliminated and to establish a database that might help investors make appropriate decisions. In this order, as revealed in this research, they need to consider the differences in the IFRS performance of the countries examined. Thus, it is important for analysts and investors to realise that, although many countries follow IFRS, in practice there may be considerable divergence in their effectiveness. Hence, it is highly important for them to better estimate country risk and determine whether IFRS perform better in weaker economies like Greece, in countries like the UK that used to follow regimes similar to IFRS, in economies like Germany with different accounting philosophies and in countries like Australia that follow IFRS values but have their own accounting boards. By enhancing their tools of analysis with our results, they might detect more effectively not only how each country responds to IFRS improvements, but also cases of earning management, thus improving their investment strategies.

However, in order to reach our results, I established a distinct set of data, and in formulating hypotheses, I overcame the limited potential for generalisation, as it was impossible to avoid the natural limitations of this research approach. Hence, although similar studies that follow this paradigm and methodology offer many advantages for financial disciplines, they tend to produce less detailed information. Therefore, my research was too focussed on hypothesis testing and structured data processes that might ignore creative thinking. Relationships between variables were simply observed and identified, not manipulated. Moreover, I did not establish the causation of variables, but simply managed to reveal the truth of numbers. Finally, individual realities and motives concerning accounting regulations and firms' performance are not depicted in this research.

In this order, the study identifies several issues arising from IFRS adoption and reveals interesting results that may prompt further study. Although IFRS seems to have been

analysed to saturation point, recent history has proved not only that many issues have not been solved, but also that new problems have emerged. Therefore, future research works should determine whether IFRS have improved typical characteristics and efficiency in a number of actionable events in recent audit cases, such as the GLOBO Company as well as the banking system which is still affected by the 2008 crisis. Thus, standard setters should order the development of a system that will provide more accurate depictions of companies. For this reason, there is a need to identify interactions between accounting and banking regulations, which usually lead to off-balance-sheet financing effects, prettifying banks' performance. Thus, optional tools for IFRS should be enhanced. Furthermore, future studies should focus on the implementation of IFRS in other countries, like Japan, while it would be interesting for future research works to analyse the profile of market participants, taking into consideration their feelings and attitudes, to discover the real motives for their behaviour, for example in relation to earnings management. Overall, IFRS seems likely to remain in the limelight for a long time, introducing an imperative need for further practical studies.

Notes

1. The Federation of European Accountants (FEE) asked accountants to share their thoughts on the possible implications, potential changes and future perspectives and challenges of IFRS. The results were published in its report, *The Future of Corporate Reporting* (Allison, 2015).
2. Shadow banking consists of institutions such as investment banks and hedge funds which are not subject to the same regulations as depository institutions such as commercial banks.
3. In November 2009, the IASB issued IFRS 9 'Financial Instruments', replacing IAS 39 and taking effect from 2013. However, the Board released further amendments to IFRS 9 in 2010 and 2013, and its final form was established in 2014 and will take effect from 2018 (<https://www.iasplus.com/en/standards/ias/ias39>; <https://www.iasplus.com/en-gb/standards/ifrs-en-gb/ifrs9>).
4. The Basel Regulation or Basel Accord (Basel I) introduced in 1988 was developed by the Basel Committee on Banking Supervision (BCBS) as a set of minimum prudential regulations for banks (<http://www.bis.org/bcbs/basel3.htm>). Since then, it has been amended and updated to strengthen regulation of the banking sector. This resulted in the last Basel III Accord, which was adopted by the European Union in 2013 as a legislative package. This package applied as of 1 January 2014 to EU member countries. It includes a regulatory framework for the banking industry, such as capital requirements and supervisory tools, including stress tests and asset quality reviews (<http://www.eba.europa.eu/regulation-and-policy/implementing-basel-iii-europe>).
5. <http://www.rediff.com/money/2008/sep/16lehman.pdf>.
6. The reclassification option involved, apart from a firm's option to use it, a decision on how to disclose it, as well as the items it chose to reclassify. As a result, many studies introduce subcategories into this reclassification option.
7. $AC_{i,t} = a_0 (1/A_{i,t-1}) + a_1 REV_{i,t} + a_2 PPE_{i,t} + e_{i,t}$
where $AC_{i,t}$ is accruals in year t scaled by lagged total assets (total assets in year $t-1$); accruals equal the annual change in current assets (excluding cash) minus current liabilities (excluding short-term debt and income tax payable) minus depreciation; $A_{i,t-1}$ is the total assets in year $t-1$; $REV_{i,t}$ is the annual change in revenues in year t scaled by lagged total assets; $PPE_{i,t}$ is property, plant and equipment in year t scaled by lagged total assets; and $e_{i,t}$ is the error term.
8. First, the author excluded the 'median Tobin's q for an industry' independent variable of the model used by Elbannan (2010), as in this model I focussed only on the shadow banking sector. Secondly, I chose to follow a logistic regression approach rather than a linear regression with a year categorical independent value. For analysis of binary data, logistic regression seems to predominate over all other methods in the social sciences (Allison, 2012). In addition, as I wished to preserve a consistent statistic processing methodology, I chose to follow logistic regression, as in similar previous hypotheses, with two years of comparisons.

References

- Adrian, T. and Shin, H.S. (2009), "The shadow banking system: implications for financial regulation", *Banque de France Financial Stability Review*, Vol. 13, pp. 1-10.
- Akgün, A.İ. (2022), "Investigating the relationship between bank performance and accounting standards: evidence from M&As in European banking", *Journal of Capital Markets Studies*, Vol. 6 No. 1, pp. 106-124.
- Allen, F. and Carletti, E. (2010), "An overview of the crisis: causes, consequences and solutions", *International Review of Financial Analysis*, Vol. 10 No. 1, pp. 1-26.
- Allison, P., D. (2012), *Logistic Regression Using SAS: Theory and Application*, 2nd ed., SAS Institute, Cary, NC.
- Backman, J. (1998), *Rapporter Och Upssatser*, Studentlittertur Lund, Lund.
- Ball, R. (2006), "International financial reporting standards (IFRS): pros and cons for investors", *Accounting and Business Research International Accounting Policy Forum*, Vol. 36, suppl, pp. 5-27.
- Ballas, P., Garefalakis, A., Lemonakis, C. and Balla, V. (2019), "Quality of financial reporting under IFRS and corporate governance influence: evidence from the Greek banking sector during crisis", *Journal of Governance and Regulation*, Vol. 8 No. 4, pp. 8-20.
- Baron, R.M. and Kenny, D.A. (1986), "The moderator–mediator variable distinction in social psychological research: conceptual, strategic, and statistical considerations", *Journal of Personality and Social Psychology*, Vol. 51 No. 6, pp. 1173-1182.
- Barth, M., E. and Landsman, W.R. (2010), "How did financial reporting contribute to the financial crisis?", *European Accounting Review*, Vol. 19 No. 3, pp. 399-423.
- Barth, M. and Mc Nichols, M. (1994), "Estimation and market valuation of environmental liabilities relating to superfund sites", *Journal of Accounting Research*, Vol. 32 Supplement, p. 177209.
- Basu, S. (2003), "Why do banks fail?", *International Review of Applied Economics*, Vol. 17 No. 3, pp. 231-248.
- Beck, T., Demircuc-Kunt, A. and Levine, R. (2006), "Bank concentration, competition, and crises: first results", *Journal of Banking and Finance*, Vol. 30 No. 5, pp. 1581-1603.
- Brown, S. (2008), "US watchdog hears fair value is much needed", Accountancy Age, available at: <https://www.accountancyage.com/2008/10/30/us-watchdog-hears-fair-value-is-much-needed/>.
- Burgstahler, D.C. and Dichev, I.D. (1997), "Earnings, adaption and equity value", *The Accounting Review*, Vol. 72 No. 2 (April), pp. 187-215.
- Bushman, R.M. (2014), "Thoughts on financial accounting and the banking industry", *Journal of Accounting and Economics*, Vol. 58 No. 2, pp. 384-395.
- Chiaramonte, L. and Casu, B. (2017), "Capital and liquidity ratios and financial distress. Evidence from the European banking industry", *The British Accounting Review*, Vol. 49, pp. 138-161.
- Claessens, S., Pozsar, Z., Ratnovski, L. and Singh, M. (2012), "Shadow banking: economics and policy", IMF Staff Discussion Note No. 12/12.
- Cole, R. (2012), "How did the financial crisis affect small business lending in the United States?", Technical Report 399, US Small Business Administration.
- Coval, J., Jurek, J. and Stafford, E. (2008), "The economics of structured finance", Harvard Business School Working Paper 09-060.
- Daske, H., Hail, L., Leuz, C. and Verdi, R.S. (2007), "Adopting a label: heterogeneity in the economic consequences of IFRS adoptions", Working Paper, University of Pennsylvania and University of Chicago.
- De Jonghe, O. (2010), "Back to the basics in banking? A micro-analysis of banking system stability", *Journal of Financial Intermediation*, Vol. 19 No. 3, pp. 387-417.

- Dib, D. and Khalil, F. (2021), "Preliminary impact of IFRS 9 implementation on the Lebanese banking sector", *Journal of Accounting and Management Information Systems*, Vol. 20, pp. 369-401.
- Elbannan, M.A. (2010), "Accounting and stock market effects of international accounting standards adoption in an emerging economy", *Review of Quantitative Finance and Accounting*, Vol. 36 No. 2, pp. 207-245.
- Federation of European Accountants (FEE) (2015), *The Future of Corporate Reporting*, available at: https://www.accountancyeurope.eu/wp-content/uploads/FEECogitoPaper_-_TheFutureofCorporateReporting.pdf.
- Filip, A. and Raffournier, B. (2014), "Financial crisis and earnings management: the European evidence", *The International Journal of Accounting*, Vol. 49, pp. 455-478.
- Gorton, G. and Metrick, A. (2010), "Regulating the shadow banking system", *Brookings Papers on Economic Activity*, Vol. 41 No. 2 (Fall), pp. 261-297.
- Hambrick, D. (2007), "Upper echelon theory: revisited", *Academy of Management Review*, Vol. 32 No. 2, p. 343.
- Harris, M., Opp, C., C. and Opp, M.M. (2014), *Higher Capital Requirements, Safer Banks? Macro Prudential Regulation in a Competitive Financial System*, University of California, Berkeley (Haas).
- Hatherly, D. and Kretschmar, G. (2011), "Capital and income financialization: accounting for the 2008 financial crisis", *Accounting Forum*, Vol. 35 No. 4, pp. 209-216.
- Heilpern, E., Haslam, C. and Andersson, T. (2009), "When it comes to the crunch: what are the drivers of the US banking crisis?", *Accounting Forum*, Vol. 33 No. 2, pp. 99-113.
- Hughes, J. (2009), "Banks face threat to debt valuations", *Financial Times*, available at: <https://www.ft.com/content/ca0ab276-5c1b-11de-aea3-00144feabdc0>.
- Jackson, P. (2013), "Shadow banking and new lending channels, past and future", *50 Years of Money and Finance: Lessons and Challenges*, Chapter 11, The European Money and Finance Forum, Vienna, pp. 377-414.
- Johnson, S. (2008), "Is the fair-value fix stalled?", *CFO Magazine*, available at: <https://www.cfo.com/accounting-tax/2008/11/is-the-fair-value-fix-stalled-5216/>.
- Jones, J. (1991), "Earnings management during import relief investigations", *Journal of Accounting Research*, Vol. 29, pp. 193-228.
- Jones, M.J. and Oldroyd, D. (2009), "Editorial, financial accounting: past, present and future", *Accounting Forum*, Vol. 33 No. 1, pp. 1-10.
- Kousenidis, D.V., Ladas, A.C. and Negakis, C.I. (2013), "The effects of the European debt crisis on earnings quality", *International Review of Financial Analysis*, Vol. 30, pp. 351-362.
- Land, J. and Lang, M. (2002), "Empirical evidence on the evolution of international earnings", *The Accounting Review*, Vol. 77, pp. 115-134.
- Laux, C. and Leuz, C. (2009), "The crisis of fair value accounting: making sense of the recent de-bate", *Accounting, Organizations and Society*, Vol. 34 Nos 6-7, pp. 826-834.
- Laux, C. and Leuz, C. (2010), "Did fair-value accounting contribute to the financial crisis? Journal of Economic Perspectives", *Journal of Accounting Research*, Vol. 24 No. 1, pp. 93-118.
- Leuz, C. and Verrecchia, R.E. (2000), "The economic consequences of increased disclosure", *Journal of Accounting Research*, Vol. 38, pp. 91-124.
- Lewis, M.K. (2009), "The origins of the sub-prime crisis: inappropriate policies, regulations, or both?", *Accounting Forum*, Vol. 33 No. 2, pp. 114-126.
- Mallet, R. (2008), "Making sense of the credit crunch fair value debate", *Chartered Institute of Management Accountants (CIMA)*, Available at: http://www.cimaglobal.com/cps/rde/xchg/live/root.xsl/insight054600_4665.htm.
- Myers, L.A. and Skinner, D.J. (2002), "Earnings momentum and earnings management", Working Paper, University of Michigan.

- Neal, A., Tang, Q. and Lin, Z. (2015), "Corporate accruals quality during the 2008-2010 global financial crisis", *Journal of International Accounting, Auditing and Taxation*, Vol. 25, pp. 1-15.
- Nieschwietz, R.J., Schultz, J.J., Jr and Zimbelman, M.F. (2000), "Empirical research on external auditors' detection of financial statement fraud", *Journal of Accounting Literature*, Vol. 19, pp. 190-246.
- O'Hanlon, J. (2013), "Did loan-loss provisioning by UK banks become more timely or less timely after adoption of IAS 39?", *Accounting and Business Research*, Vol. 43 No. 3, pp. 225-258.
- Ohlson, J.A. (1995), "Earnings, book values and dividends in equity valuation", *Contemporary Accounting Research*, Spring, Vol. 11 No. 2, pp. 661-687.
- Onali, E. and Ginesti, G. (2014), "Pre-adoption market reaction to IFRS 9: a cross-country event-study", *Journal of Accounting and Public Policy*, Vol. 33 No. 6, pp. 628-637.
- Ordonez, G. (2013), "Sustainable shadow banking", NBER Working Paper No. 19022.
- Pallant, J. (2005), *SPSS Survival Manual: A Step by Step Guide to Data Analysis Using SPSS Version 12*, Open University Press, Berkshire.
- Plantin, G. (2015), "Shadow banking and bank capital regulation", *Review of Financial Studies*, Vol. 28 No. 1, pp. 146-175.
- PricewaterhouseCoopers (2009), "Lehman brothers' bankruptcy Lessons learned for the survivors Informational presentation for our clients", A publication of the PricewaterhouseCoopers' Financial Services Institute (FSI), available at: <https://www.pwc.com/jg/en/events/lessons-learned-for-the-survivors.pdf>.
- Raby, G. (2003), "The costs of terrorism and the benefits of cooperating to combat terrorism", Department of Foreign Affairs and Trade, Economic Analytical Unit, Paper submitted to the Secure Trade in the APEC Region (STAR) Conference.
- Ramanna, K. and Watts, R.L. (2007), "Evidence on the effects of unverifiable fair-value accounting", Harvard Business School Working Paper No. 08-014.
- Ryan, S.G. (2008), "Accounting in and for the subprime crisis", *The Accounting Review*, Vol. 83 No. 6, pp. 1605-1638.
- Schoenmaker, D. (2016), "The Banking Union: an overview and open issues", in Beck, T. and Casu, B. (Eds), *Handbook of European Banking*, Palgrave MacMillan, Basingstoke.
- Strong, N. (1992), "Modelling abnormal returns: a review article", *Journal of Business Finance and Accounting*, Vol. 19 No. 4, pp. 533-553.
- Tendeloo, B.V. and Vanstraelen, A. (2005), "Earnings management under German GAAP versus IFRS", *European Accounting Review*, Vol. 14 No. 1, pp. 155-180.
- Wallison, P. (2008a), "Fair value accounting: a critique", American Enterprise Institute for Public Policy Research Outlook Series.
- Wallison, P. (2008b), "Judgment too important to be left to the accountants", *Financial Times*, available at: <https://www.ft.com/content/770e5176-16d6-11dd-bbfc-0000779fd2ac>.
- Whalen, R.C. (2008), "The subprime crisis: cause, effect and consequences", *Networks Financial Institute Policy Brief No. 2008-PB-04*, available at: <https://ssrn.com/abstract=1113888>

Further reading

- Hussey, J. and Hussey, R. (1997), *Business Research: A Practical Guide for Undergraduate and Postgraduate Students*, Macmillan, Basingstoke.

Corresponding author

Sotirios Rouvolis can be contacted at: roybsto@otenet.gr

The research capture the aspects of firms using the following ratios

1. Market value-Size

2. Investment

SALESHA	Sales per share	DIVSH	Dividend per share
NAVSH	Net Asset Value per share	DIVYI	Dividend yield (div per share/share price)
SALETAS	Turnover/Total Assets	DIVCOV	Dividend cover (Net profit/dividend)
RESTAS	Reserves/Total Assets	PE	P/E
RESSFU	Res/Shareholders Funds	HOLTA	Holdings/Total assets
LNMV	Natural Algorithm of MV		

3. Growth

4. Profitability

MVBV	Market to Book Value	LOWB	Plowback Ratio (retained profit/operating profit)
EPSG	Earnings per Share Growth	OPM	Operating Profit Margin (operating profit/sales)
PEG	PE Ratio/Annual EPS growth	NPM	Net Profit Margin (net profit/sales)
DIVSHG	Dividend per Share Growth	ROSC	(Profit after tax/Equity + Reserves)
		EPS	EPS
		ROCE	(PBIT/Equity + Reserves + Lt loans)

5. Liquidity

6. Leverage

CUR	Current Ratio	DEBT	Debtor Turnover (sales/debtors)
2CASH	Cash Ratio	ETL	Equity/Total Liabilities
QUI	Quick Ratio	TLSFU	Total Liabilities/Shareholders Funds
CFSH	Operating Cash Flow per share [(Operating profit + depreciation) /No of shares]	CGEAR	TL/Capital Employed-Intangibles + short-term Liabilities
CFM	Cash Flow Margin [(Earnings+Depreciation)/Sales]	CLSFU	Current Liabilities/Shareholders Funds
WCR	Working Capital Ratio (Sales/Working Capital)	INTCOV	Operating Profit/Interest Charge
STOCKT	Stock turnover (cost of sales/stock)	IGEAR	Interest Charge/Operating Profit
		DEBTE	Debt/Equity
		DSFU	Debt/Shareholders Funds

Table A1.
Applied ratios

Table A2.
Identification of
variables

Variable	Operational definition	Group	Category
BVPS _{i,t}	Independent	Numerical	Continuous
DAC _{i,t}	Independent	Numerical	Continuous
	Variables of interest	Numerical	Continuous
ΔWC _{i,t}	Dependent	Numerical	Continuous
ΔTq _{i,t}	Independent	Numerical	Continuous
ΔTA _{i,t}	Independent	Numerical	Continuous
LEV _{i,t}	Independent	Numerical	Continuous
MV _{i,t}	Independent	Numerical	Continuous
NPPS _{i,t}	Independent	Numerical	Continuous
OCF _{i,t}	Independent	Numerical	Continuous
	Variables of interest	Numerical	Continuous
P _{i,t}	Dependent	Numerical	Continuous
RR _{i,t}	Dependent	Categorical	Dichotomous
Size	Independent	Numerical	Continuous
	Variables of interest	Numerical	Continuous
Investment	Variables of interest	Numerical	Continuous
Growth	Variables of interest	Numerical	Continuous
Profitability	Independent	Numerical	Continuous
	Variables of interest	Numerical	Continuous
Liquidity	Independent	Numerical	Continuous
	Variables of interest	Numerical	Continuous
Leverage	Independent	Numerical	Continuous
	Variables of interest	Numerical	Continuous

Panel A		2007		2008		2009		Pair-wise <i>t</i> -tests for equality of means	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	2007 vs. 2008	2007 vs. 2009	2008 vs. 2009
1. European and Australian banking sector (IFRS)									
<i>Test variables</i>									
Accruals	0.0626	0.9070	-0.0065	0.0566	-0.0445	0.1472			
CAR	0.0087	0.0484	-0.0318	0.1376	-0.0103	0.0281	**	***	*
<i>Control variables</i>									
Size									
SALESHA	9.4460	12.8377	8.6042	14.8736	10.1828	15.8281		*	*
LNMV	8.8493	3.3781	8.2710	3.3995	8.5300	3.4497	*		*
Profitability									
PLOWB	1.1404	2.9759	1.9705	7.1520	20.736	3.7609		*	
OPM	0.3594	1.6289	0.0143	2.0810	-0.0053	0.5873	*	**	
NPM	0.3110	1.6245	0.0150	1.9452	-0.0047	0.5327	*		
ROSC	0.1877	0.1751	0.0683	0.2294	0.0800	0.2421	***		
EPS	1.6286	4.1021	0.4753	1.9504	0.7385	4.4497	**	*	*
ROCE	0.1476	0.2497	0.1114	0.2176	0.0836	0.2030			
Leverage									
DEBT	3.7011	5.4081	2.3358	7.9177	3.7385	6.9544	*		*
TLSFU	12.4919	11.4362	13.6810	13.1320	11.5572	10.3651			*
DSFU	2.9608	5.7496	2.8284	5.1374	2.5110	4.4178		*	
2. Banking sector US (US GAAP)									
<i>Test variables</i>									
Accruals	0.0290	0.0160	-0.0333	0.0255	0.0548	0.0242			
CAR	0.0110	0.0111	-0.0094	0.0322	0.0092	0.0239	***		***

(continued)

Table A3.
Descriptive statistics

Table A3.

Panel A		2007			2008			2009			Pair-wise <i>t</i> -tests for equality of means		
		Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	2007 vs. 2008	2007 vs. 2009	2008 vs. 2009
<i>Control variables</i>													
<i>Size</i>													
SALETAS	0.0770	0.0403	0.0434	0.0690	0.0434	0.0666	0.0444	0.0666	0.0444	0.0666	**	***	***
RESTAS	0.0628	0.0755	0.0518	0.0464	0.0518	0.0625	0.0645	0.0625	0.0645	0.0625	***	*	***
RESSFU	0.3162	0.1460	0.3562	0.2788	0.3562	0.3396	0.1579	0.3396	0.1579	0.3396	***	*	***
LNMV	5.6346	1.9954	2.1793	5.2289	2.1793	5.1102	2.2424	5.1102	2.2424	5.1102	**	***	***
<i>Profitability</i>													
PLOWB	5.0176	8.5125	16.3546	4.9501	16.3546	3.3625	16.3536	3.3625	16.3536	3.3625	***	*	*
OPM	0.1586	0.1206	0.2925	0.0357	0.2925	0.0339	1.1710	0.0339	1.1710	0.0339	***	*	*
NPM	0.1175	0.1519	0.2496	0.0161	0.2496	0.0061	0.7693	0.0061	0.7693	0.0061	***	**	*
ROSC	0.0866	0.0693	0.7339	-0.0129	0.7339	-0.0080	0.1401	-0.0080	0.1401	-0.0080	**	***	*
EPS	2.0720	9.5006	10.5334	-1.2138	10.5334	-2.0086	10.0603	-2.0086	10.0603	-2.0086	***	***	*
ROCE	0.0785	0.0579	1.2829	0.1290	1.2829	0.0632	0.0745	0.0632	0.0745	0.0632	***	***	*
<i>Leverage</i>													
DEBT	4.3062	10.1947	8.6429	3.8830	8.6429	5.5565	16.4834	5.5565	16.4834	5.5565	*	*	*
TLSFU	6.6356	3.0753	4.4357	7.0992	4.4357	6.4547	2.6911	6.4547	2.6911	6.4547	*	*	*
CGEAR	4.5214	3.1173	4.6387	5.0769	4.6387	4.5149	2.8354	4.5149	2.8354	4.5149	*	*	*
INTCOV	0.9942	5.5750	4.1263	0.4632	4.1263	0.2244	2.6517	0.2244	2.6517	0.2244	*	**	*
IGEAR	2.8734	10.3516	11.5962	2.6766	11.5962	1.0250	10.5676	1.0250	10.5676	1.0250	*	**	*

(continued)

(continued)

Table A3.

Table A3.

Panel B										Pair-wise <i>t</i> -tests for equality of means		
Variables	2010		2011		2012		2013		2010 vs. 2011		2012 vs. 2013	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation				
Liquidity												
CUR	3.6911	5.7514	5.3105	13.4922	5.7880	9.2804	8.6917	19.5506	*		*	
CFSH	0.4127	1.3762	0.2059	1.0990	0.3034	1.0906	0.4614	1.7480	*			
CFM	0.5978	6.3433	0.2795	3.0208	-0.0665	5.9241	-2.4482	13.1110			**	
Leverage												
ETL	3.5995	10.8018	3.7849	7.3954	4.8511	6.7386	7.1994	13.4620			**	
IGEAR	0.4061	2.7655	0.0478	2.0834	0.1917	0.8442	0.0967	1.1067	*			
DEBTE	0.8661	3.2858	0.8829	3.0187	0.7605	2.4032	1.3020	4.7912			*	
2. US												
Test variables												
Tobin's <i>q</i>	0.3806	0.9293	0.1009	0.3881	0.2672	0.5202	0.4195	0.9144	***		**	
Accruals	-0.0252	0.1206	0.0208	0.6571	0.0299	0.5773	-0.0147	0.1469				
OCF	0.0777	0.1961	0.0635	0.2628	0.0647	0.1547	0.1371	0.7936			*	
Control variables												
Size												
SALESHA	9.9029	10.8065	8.1300	7.8484	8.3826	8.5415	9.5764	10.9833	*		*	
NAVSH	14.9496	15.7529	14.3562	11.1738	13.8841	10.6841	15.6440	13.6162			*	
LNMV	6.9994	1.9321	6.8808	1.8973	7.0810	1.8693	7.3570	1.7819			*	
Investment												
DIVSH	1.5147	3.4131	1.1565	1.6606	1.1095	1.0856	1.3395	2.4611	*		*	
DIVYI	0.0625	0.1525	0.0686	0.1868	0.0801	0.2418	0.0524	0.1306			*	
DIVCOV	0.3272	8.0780	0.7682	3.1023	0.6072	1.8374	1.2453	2.3262			***	
PE	11.2206	28.0425	10.0009	21.9310	10.8266	28.5366	19.1688	25.9597			***	
Growth												
MVBV	2.2187	4.3864	1.6618	2.5499	1.8736	3.0659	2.5167	5.0445	*		*	

(continued)

Panel B				Pair-wise <i>t</i> -tests for equality of means						
Variables	2010		2011		2012		2013		2010 vs. 2011	2012 vs. 2013
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation		
Profitability										
OPM	0.3738	1.8029	0.1435	0.4902	0.1380	0.5178	0.2816	1.9560	*	*
NPM	0.1642	0.6524	0.0919	0.3355	0.1163	0.2834	0.1241	1.4846	*	
EPS	1.0345	6.1476	1.2666	4.7187	1.1949	2.5525	1.5937	2.6941		*
ROCE	0.0637	0.3519	0.1360	0.9100	0.0410	0.1409	0.0865	0.4534		*
Liquidity										
CUR	2.1270	3.0401	1.7802	2.2448	1.7503	2.3482	2.0818	3.0610	*	*
CFSH	2.2626	4.3376	1.8860	4.1456	2.3649	3.3595	2.8581	3.6546		*
Leverage										
CGEAR	1.1359	2.5038	0.8716	1.2608	0.8240	2.5143	0.7815	1.0279	*	
INTCOV	6.1354	23.6873	2.6423	16.8249	4.6584	18.3497	4.7883	9.9091	*	
IGEAR	0.2503	3.5386	0.0891	4.5429	0.0984	4.5515	0.5727	2.5750		*
DSFU	0.4864	0.9899	0.7369	1.4637	0.6824	1.9402	0.6506	2.0856	**	
Note(s): *, ** and *** indicate statistically significant factors at 10, 5 and 1% (two-tailed) level, respectively										

Table A3.

Country	Event-day	5-day	10-day	Country	Event-day	5-day	10-day	Country	Event-day	5-day	10-day	Sig
Australia	AR	Sig	CAR	Australia	AR	Sig	CAR	Australia	AR	Sig	CAR	Sig
AMP	-5.89% (-2.956)	***	9.62% (-2.257)	ANZ	0.12% (-0.056)	**	9.45% (-2.218)	ANZ	0.12% (-0.056)	***	19.62% (-4.217)	***
AUB	0.74% -0.46		9.29% -1.605	BOQ	0.63% -0.282	**	17.69% -3.057	BOQ	0.63% -0.282	*	-4.85% (-1.762)	*
CIX	-0.83% (-0.219)		-13.85% (-1.754)	NAB	-4.62% (-2.218)	*	-2.73% -0.346	NAB	-4.62% (-2.218)	***	3.92% -0.749	***
NHF	10.72% -4.174	***	3.47% -0.253	QBE	3.24% (-1.473)	***	16.53% -1.207	QBE	3.24% (-1.473)	**	15.73% -2.372	**
SUN	-4.53% (-1.69)	*	-16.83% (-3.038)	TWR	-4.23% (-2.052)	***	-8.14% (-1.469)	TWR	-4.23% (-2.052)	***	-19.22% (-3.325)	***
WBB	3.49% -2.177	**	0.97% -0.268				-2.17% (-0.598)					
Germany	AR	Sig	CAR	Germany	AR	Sig	CAR	Germany	AR	Sig	CAR	Sig
ALV	-2.54% (-1.926)	*	-6.82% (-1.37)	ARL	-5.10% (-3.253)	***	-3.63% (-0.728)	ARL	-5.10% (-3.253)	***	3.03% -0.481	***
CBK	-2.84% (-1.1)		-9.45% (-1.115)	COM	-4.90% (-2.244)	***	-42.95% (-8.261)	COM	-4.90% (-2.244)	**	-18.15% (-3.783)	***
DBK	0.35% -0.215		-13.36% (-2.427)	DPB	-3.95% (-1.813)	**	-21.20% (-0.379)	DPB	-3.95% (-1.813)	*	-33.71% (-3.851)	***
DRN	-1.12% -0.549	*	-12.00% (-1.688)	GLJ	-6.59% (-2.227)	*	-19.59% (-2.757)	GLJ	-6.59% (-2.227)	**	5.64% -0.711	***

Germany	AR	Sig	CAR	Sig	CAR	Sig	Germany	AR	Sig	CAR	Sig	CAR	Sig
MUV2	-2.70% (-1.9)	*	2.73% -0.667		9.87% -2.415	**	OLB	-0.61% (-0.464)		7.95% -3.333	***	7.57% -3.173	***
OTP	-1.14% (-0.483)		-8.02% (-1.537)		-9.20% (-1.763)	*	VVV3	6.13% -1.86	*	-9.29% (-1.329)		-15.48% (-2.213)	**
WUW	0.25% -0.133		-5.46% (-0.979)		-11.67% (-2.091)	**							
UK	AR	Sig	CAR	Sig	CAR	Sig	UK	AR	Sig	CAR	Sig	CAR	Sig
ADM	-0.49% (-0.209)		9.54% -0.978		16.37% -1.678	*	AML	-0.26% (-0.142)		12.08% -3.267	***	22.59% -6.111	***
AV	-2.18% (-1.214)		16.90% 3.746	***	21.57% -4.781	***	BARC	-2.80% (-1.18)		22.66% -1.811	*	26.95% -2.154	**
BGEO	-3.63% -1.114		-27.29% (-1.984)	**	-42.77% (-3.109)	***	CBG	1.44% -0.516		20.98% -1.925	*	4.48% -0.41	
CTR	0.11% -0.059		-7.41% (-1.739)	*	-6.52% (-1.531)		GACB	-1.47% (-1.099)		-1.88% (-0.632)		-4.95% (-1.669)	*
HSBA	0.65% -0.56		6.33% -1.738	*	13.85% -3.804	***	III	-3.83% (-0.779)		-6.36% (-0.897)		-16.74% (-2.36)	**
IPO	-1.67% (-0.663)		-7.54% (-1.64)		-10.81% (-2.352)	**	LGEN	-2.47% (-1.347)		18.04% -3.56	***	20.37% -4.021	***
LLOY	7.73% -3.441	***	5.34% -0.58		-3.62% (-0.393)		PAG	-10.12% (-1.679)	*	-7.83% (-0.383)	*	-13.81% (-0.675)	
PFG	4.11% -2.265	**	3.29% -0.457		2.02% -0.28		PRU	-3.27% (-1.831)	*	15.52% -3.401	***	16.90% -3.703	***
RBS	-4.38% (-1.797)	*	12.59% -1.306		12.60% -1.307		RSA	5.52% -3.445	***	10.62% -1.999	**	15.68% -2.952	***
SL	-4.00% (-1.916)	*	6.08% -0.999		9.92% -1.63		STAN	2.47% -1.657	*	12.09% -2.394	**	7.73% -1.53	**
STJ	2.97% -4.152	***	28.42% -4.03	***	22.79% -3.232	***	SVI	-0.93% (-1.942)	*	10.16% -2.21	**	-3.22% (-0.7)	**

(continued)

Table A4.

Greece	AR	Sig	CAR	Sig	10-day	Code	Sig	Event-day	Greece	AR	Sig	5-day	Sig	10-day	CAR	Sig	10-day	Sig
ALFA	-3.22% (-1.946)	*	-7.34% (-2.285)	**	-4.61% (-1.437)				ETE	1.31% -0.827		7.28% -1.071		15.36% -2.261				**
EUPIK	-1.40% (-0.843)	*	-9.71% (-1.924)	*	0.64% -0.127				TBANK	-10.89% (-5.607)	***	-24.51% (-3.127)	***	-25.43% (-3.245)				***
TGEN	-3.65% (-2.035)	**	-6.58% (-1.149)		-11.66% (-2.036)				TT	-3.07% (-1.6)	**	-6.84% (-0.929)		-13.55% (-1.841)				*
Code	Event-day	Sig	5-day	Sig	10-day	Code	Sig	Event-day	Greece	AR	Sig	5-day	Sig	10-day	CAR	Sig	10-day	Sig
<i>NASDAQ</i>																		
AAME	0.32% -0.058		-20.94% (-1.838)	*	-29.64% (-2.602)		***		MBVT	-2.69% (-1.754)	*	-1.36% (-0.284)		-1.42% (-0.297)				
MCBC	1.69% -0.452		26.29% -1.978	**	8.66% -0.651				METR	0.15% -0.067		13.99% -2.418		8.68% -1.501				
MFSF	-0.33% (-0.129)		7.67% -1.23		12.27% -1.967		**		MSFG	-1.65% (-0.612)		18.82% -3.086	***	28.89% -4.738				***
NBNC	-19.04% (-5.511)	***	22.41% -1.993	**	31.66% -2.816		***		NECB	-2.78% (-2.803)	***	-2.97% (-1.002)		-13.82% (-4.659)				***
NFBK	-3.05% (-1.861)	*	7.46% -2.158	**	6.96% -2.013		**		NHTB	-4.33% (-1.762)	*	0.25% -0.042		-9.35% (-1.62)				***
NPBC	-0.18% (-0.058)		28.17% -2.111	**	30.16% -2.261		**		NWLI	0.73% -0.246		14.92% -2.376	**	16.38% -2.609				***
OOPC	-5.97% (-2.578)	**	5.17% -0.932		10.29% -1.854		*		OKSB	2.95% -0.969		31.03% -2.322	**	32.55% -2.436				**
ONB	4.77% -1.774	*	32.47% -2.58	**	33.56% -2.667		***		OPOF	5.05% -1.805	*	-2.32% (-0.56)		15.73% -3.839				***
OSBC	6.39% -2.285	**	39.71% -1.924	*	39.08% -1.894		**		OZRK	3.08% -0.9		32.51% -2.789	***	30.32% -2.601				***
PACW	2.19% -0.664		60.65% -3.234	***	59.13% -3.153		***		PCBK	-6.52% (-2.049)	**	24.74% -2.243	**	19.29% -1.749				*

Code	Event-day AR	Sig	5-day CAR	Sig	10-day CAR	Code	Sig	Event-day AR	Sig	5-day CAR	Sig	10-day CAR	Sig
PEBO	4.84% -1.777	*	32.90% -4.65	***	32.59% -4.606	***	PGC	-4.13% (-2.611)	***	14.43% -1.81	*	10.95% -1.374	*
PNBK	0.24% -0.113		3.89% -1.197		-10.05% (-3.089)	***	PNFP	5.47% -1.997	**	34.25% -4.356	***	42.78% -5.44	***
PROV	-2.20% (-0.727)		57.01% -3.623	***	47.02% -2.988	***	PVTB	1.37% -0.512		47.06% -5.675	***	58.71% -7.08	***
PWOD	-0.63% (-0.302)		3.12% -1.141		19.61% -7.164	***	BPAA	13.57% -2.438	**	52.58% -2.585	**	56.29% -2.767	***
RNST	1.89% -0.697		32.36% -2.79	***	33.58% -2.896	***	SASR	-2.91% (-1.183)		32.62% -2.118	**	44.18% -2.868	***
SBBX	-9.09% (-2.122)	**	6.04% -0.709		10.16% -1.191	***	SBCF	1.12% -0.249		38.45% -3.289	***	39.59% -3.387	***
SBNY	4.65% -1.606		29.68% -2.795	***	34.95% -3.291	***	SBSI	-5.42% (-2.403)	**	18.52% -1.434		28.28% -2.189	**
SFNC	3.97% -1.645	*	33.87% -5.411	***	33.12% -5.29	***	SFST	1.03% -0.294		8.95% -0.914		19.64% -2.006	**
SHBI	2.46% -0.858		19.78% -3.43	***	21.13% -3.665	***	SLCT	-2.57% (-0.52)		-29.34% (-1.84)	*	-28.76% (-1.809)	*
SNBC	-6.22% (-2.452)	**	34.01% -2.691	***	36.07% -2.854	***	SOCB	-9.49% (-4.007)	***	-16.55% (-2.399)	**	-27.62% (-4.004)	***
SSB	6.01% -2.379	**	24.68% -3.688	***	35.49% -5.304	***	STBA	0.99% -0.458		12.75% -1.448		23.19% -2.635	***
SUBK	1.16% -0.585		16.35% -2.411	**	18.34% -2.704	***	SUSQ	8.15% -2.912	***	38.49% -2.157	**	46.28% -2.593	**
SVBI	-2.45% (-0.749)		16.66% -1.985	**	6.99% -0.833		SYBT	2.28% -0.862		14.97% -1.612		19.75% -2.127	**
TBBK	-1.54% (-0.357)		37.66% -2.658	***	54.09% -3.818	***	TCBI	4.87% -1.853	*	39.63% -8.966	***	39.93% -9.034	***
TCBK	7.43% -2.255	**	57.07% -3.491	***	67.17% -4.109	***	TFSL	-1.02% (-0.631)		12.32% -2.574	**	6.92% -1.445	**

(continued)

Table A4.

Table A4.

Code	Event-day AR	Sig	5-day CAR	Sig	10-day CAR	Code	Sig	Event-day AR	Sig	5-day CAR	Sig	10-day CAR	Sig
THFF	-4.80% (-1.878)	*	20.65% -2.308	**	25.50% -2.85	***	TRCB	-9.19% (-2.048)	**	-2.82% (-0.294)	**	-5.44% (-0.56)	***
TRMK	5.87% -2.245	**	48.49% -6.903	***	36.99% -5.267	***	TRST	4.76% -2.047	**	30.61% -2.626	***	43.00% -3.69	***
TSBK	9.23% -2.396	**	3.81% -0.291	**	18.22% -1.39	***	UBFO	-0.52% (-0.154)	*	29.05% -4.197	***	25.49% -3.682	***
UBSH	-5.34% (-1.776)	*	25.48% -2.325	**	30.30% -2.765	***	UBSI	4.48% -1.651	*	38.79% -4.146	***	51.28% -5.48	***
UCBI	11.56% -2.709	***	46.62% -2.147	**	8.50% -0.391	***	UMBF	-6.03% (-2.987)	***	12.75% -2.809	***	17.69% -3.895	***
UMFQ	5.69% -1.437	**	35.11% -2.444	**	37.28% -2.594	**	UNB	1.84% -1.901	*	-3.22% (-1.308)	*	-1.50% (-0.609)	***
UVSP	6.67% -1.793	*	29.61% -1.931	**	36.27% -2.366	**	VPFG	2.90% -1.791	*	14.68% -3.584	***	17.98% -4.39	***
WABC	6.09% -2.603	***	17.87% -1.839	*	27.72% -2.852	***	WAFD	1.75% -0.678	***	34.70% -2.914	***	33.32% -2.797	***
WASH	-3.49% (-1.404)	**	16.48% -2.03	**	21.53% -2.652	***	WFD	-2.14% (-1.568)	***	2.69% -0.5	*	10.11% -1.881	*
WSBC	0.51% -0.149		29.66% -1.436		35.87% -1.737	*	WSBF	3.95% -1.742	*	9.29% -1.784	*	13.39% -2.572	**
WSFS	-0.37% (-0.177)	*	16.06% -1.896	*	16.50% -1.948	*	WTBA	-6.00% (-1.65)	*	16.21% -1.082	*	31.01% -2.071	**
WTFC	5.99% -2.097	**	57.26% -3.808	***	55.07% -3.661	***	ZION	6.75% -1.705	*	87.48% -5.381	***	76.97% -4.735	***
NYSE AFL	0.50% -0.363	**	10.72% -2.37	**	0.20% -0.044		AIZ	-5.58% (-3.447)	***	-9.87% (-1.645)	*	-5.77% (-0.961)	***
BAC	-10.90% (-3.821)	***	30.21% -2.248	**	33.50% -2.493	**	BANC	1.46% -0.593	**	12.28% -2.008	**	17.82% -2.915	***

(continued)

Code	Event-day AR	Sig	5-day CAR	Sig	10-day CAR	Code	Sig	Event-day AR	Sig	5-day CAR	Sig	10-day CAR	Sig
BBT	4.26% -1.8018	*	40.01% -3.297	***	30.84% -2.541	**	BBX	-5.89% (-2.317)	**	51.42% -2.041	**	#### -12.2	***
BHLB	-1.09% (-0.449)		16.70% -2.989	***	14.21% -2.545	***	BOH	3.07% -1.48		12.02% -2.91	***	17.46% -4.227	***
BXS	4.33% -1.572		26.32% -3.073	***	29.35% -3.428	***	C	-4.53% (-1.536)		22.02% -2.5	**	24.21% -2.748	***
CFR	2.12% -1.85	*	4.43% -0.925		6.37% -1.332		CIA	6.66% -1.827	*	18.76% -2.463	**	30.83% -4.049	***
CM	7.91% -1.932	*	15.82% -1.602		38.05% -3.853	***	CMA	3.24% -1.002		46.85% -6.111	***	41.15% -5.368	***
COF	8.18% -3.04	***	34.58% -4.657	***	29.57% -3.981	***	CPF	11.55% -2.396	**	59.12% -3.602	***	77.16% -4.701	***
CYN	4.70% -1.735	*	26.80% -2.977	***	24.23% -2.692	***	FCF	2.16% -0.798		15.99% -1.859	*	23.32% -2.711	***
FFG	-1.31% (-0.509)		41.42% -5.915	***	49.65% -7.09	***	FNB	4.73% -1.837	*	36.33% -5.077	***	42.77% -5.977	***
HTH	0.17% -1.931	*	4.10% -1.415		8.19% -2.824	***	IHC	-6.42% (-1.874)	*	-0.69% (-0.101)		-5.25% (-0.766)	
JPM	-1.02% (-2.7)	***	19.63% -2.999	***	33.61% -5.133	***	LNC	1.83% -1.201		6.82% -1.89	*	3.52% -0.974	
MET	-3.50% (-2.651)	***	16.18% -5.552	***	-2.43% (-0.832)	***	MFC	2.74% -2.063	**	5.61% -2.093	**	14.93% -5.568	***
MSL	2.52% -0.947		15.98% -2.631	***	1.91% -0.315	***	MTB	4.10% -1.716	*	33.28% -5.371	***	32.24% -5.203	***
NYCB	4.42% -2.075	**	16.10% -2.553	**	8.22% -1.303		PB	3.65% -1.492		14.48% -2.458	**	21.90% -3.718	***
PFG	-1.21% (-0.641)		14.81% -3.105	***	14.57% -3.054	***	PFS	4.07% -1.669	*	14.13% -2.883	***	15.27% -3.115	***
PL	-9.25% (-6.035)	***	-4.59% (-1.245)	***	-12.80% (-3.471)	***	PNC	3.37% -1.65	*	11.99% -1.601	*	10.37% -1.385	***

(continued)

Code	Event-day		5-day		10-day		Event-day		5-day		10-day	
	AR	Sig	CAR	Sig	CAR	Code	AR	Sig	CAR	Sig	CAR	Sig
PRU	-3.38% (-1.775)	*	16.04%	**	7.27%	RF	7.24%	*	91.49%	***	56.52%	***
SFG	-1.27% (-0.676)		9.32%	**	3.71%	SLF	-1.821		-7.393		-4.567	**
SNV	6.08% -1.865	*	-2.36	***	-0.94	***	-0.912		-0.148		-2.376	*
STT	4.41% -1.889	*	-2.842		35.34%	STI	6.21%	*	41.30%	***	23.74%	
TMK	0.80% -0.76		-6.41%	**	-4.402	***	-1.89		-3.302		-1.898	**
VLY	4.78% -1.982	**	15.80%	*	-18.50%	TCB	4.29%	*	38.81%	**	33.67%	**
			4.18% (-0.78)	**	-2.252	***	-1.651		-2.442		-2.118	***
			2.226		10.83%	***	4.59%	**	17.05%	***	20.80%	***
			-2.226	*	-5.772	*	-2.215		-2.69		-3.283	
			1.751		16.32%	*						
			-1.808		-1.808							

Note(s): *, ** and *** indicate statistically significant factors at 10, 5 and 1% (two-tailed) level, respectively

Panel A: Test 1-logistic regression for reclassified firms

<i>Dependent variable</i>	Year	<i>Dependent variable</i>	Year
<i>Cases Included in Analysis</i>	75	<i>Cases Included in Analysis</i>	71
<i>Missing Cases</i>	19	<i>Missing Cases</i>	11
<i>Total</i>	94	<i>Total</i>	82
<i>Accuracy Rate</i>	50.70%	<i>Accuracy Rate</i>	50.70%

2007–2008				2007–2009			
Variable	Coefficients	Sig	Exp (B)	Variable	Coefficients	Sig	Exp (B)
DAC	–2.566 (0.896)	***	0.077	DAC	–0.739 (0.351)	**	0.478
Constant	–1.697 (1.169)			Constant	0.337 (0.306)		

Panel B: Test 2-OLS regression of accruals on firm financial measures

2008			2009		
Variables	Coefficients	Sig	Variables	Coefficients	Sig
<i>1. Reclassified firms vs Not</i>					
DV	0.050 (0.010)	***	DV	–0.014 (0.007)	***
LNMV	–0.008 (0.001)	***	RESTAS	0.528 (0.102)	***
OPM	–0.023 (0.007)	***	OPM	–0.322 (0.049)	***
ETL	–0.097 (0.017)	***	ETL	–0.049 (0.009)	***
Constant	0.009 (0.002)		Constant	0.057 (0.001)	
R^2 adj	0.664		R^2 adj	0.713	
Sample size	84		Sample size	83	
<i>2. US firms vs. reclassified</i>					
DV	0.006 (0.002)	***	DV	0.024 (0.003)	***
SALETAS	–0.046 (0.016)	***	LNMV	–0.001 (0.000)	***
OPM	0.006 (0.003)	*	OPM	0.002 (0.001)	***
IGEAR	0.004 (0.001)	**	TLSFU	0.004 (0.003)	***
Constant	0.002 (0.001)		Constant	–0.012 (0.002)	***
R^2 adj	0.472		R^2 adj	0.515	
Sample size	331		Sample size	334	
<i>3. US firms vs. not reclassified</i>					
DV	0.006 (0.004)	*	DV	0.004 (0.002)	***
SALETAS	–0.050 (0.026)	*	SALETAS	–0.038 (0.011)	***
ROCE	0.027 (0.006)	***	ROCE	0.024 (0.007)	***
INTCOV	0.004 (0.002)	*	INTCOV	0.005 (0.002)	***
Constant	0.002 (0.002)		Constant	–0.001 (0.001)	*
R^2 adj	0.314		R^2 adj	0.316	
Sample size	334		Sample size	341	

Note(s): *, ** and *** indicate statistically significant factors at 10%, 5 and 1% (two-tailed) level, respectively

Table A5.
Results of [H3](#)

Table A6.
H4 OLS regression of
A.R. on firm financial
measures

2008 Variables	Coefficients	Sig	Variables	2009 Coefficients	Sig
<i>1. Reclassified firms vs. not</i>					
DV	−0.282 (0.111)	**	DV	0.011 (0.004)	***
SALETAS	0.677 (0.268)	**	NAVSH	0.013 (0.004)	***
OPM	−0.096 (0.077)	*	NPM	0.101 (0.035)	***
CGEAR	0.028 (0.016)	*	DEBTE	0.007 (0.002)	***
Constant	0.060 (0.016)		Constant	0.014 (0.001)	
R ² adj	0.574		R ² adj	0.742	
Sample size	84		Sample size	84	
<i>2. US firms vs. reclassified</i>					
DV	0.076 (0.033)	**	DV	0.051 (0.013)	***
LNMV	−0.005 (0.002)	***	SALETAS	−0.168 (0.038)	***
EPS	0.001 (0.000)	***	ROSC	−0.121 (0.015)	***
<i>No sig. result for Leverage</i>					
			TLSFU	−0.003 (0.001)	***
Constant	−0.044 (0.010)	***	Constant	−0.009 (0.003)	***
R ² adj	0.325		R ² adj	0.603	
Sample size	331		Sample size	334	
<i>3. US firms vs. not reclassified</i>					
DV	0.042 (0.012)	***	DV	0.055 (0.015)	***
LNMV	−0.005 (0.002)	***	LNMV	0.003 (0.001)	***
ROSC	−0.019 (0.011)	*	ROSC	−0.124 (0.016)	***
TLSFU	−0.003 (0.001)	*	TLSFU	−0.003 (0.001)	***
Constant	−0.020 (0.008)	***	Constant	−0.012 (0.003)	***
R ² adj	0.326		R ² adj	0.575	
Sample size	334		Sample size	341	
Note(s): *, ** and *** indicate statistically significant factors at 10, 5 and 1% (two-tailed) level, respectively					

Panel A: Results of Test 1a										Pair-wise <i>F</i> -test for equality of variances				
Variables	2010			2011			2012			2013			2010–2011	2012–2013
	Mean	Standard deviation		Mean	Standard deviation		Mean	Standard deviation		Mean	Standard deviation			
<i>Australia</i>														
Size														
SALESHA	0.35609	0.70127		0.70709	1.89878		0.26989	0.46806		0.61429	1.80067		**	**
NAVSH	0.89565	1.31228		0.8987	1.28365		0.64516	0.80347		0.79997	1.20466		*	*
SALETAS	0.2996	0.31779		0.40479	0.55121		0.35063	0.39333		0.45254	1.03191		*	*
RESSFU	0.10506	0.22607		0.23863	0.9419		0.26865	1.65146		0.64177	3.8685		*	*
Investment														
DIVYI	0.01322	0.01732		0.02547	0.03448		0.02659	0.03541		0.01414	0.01752		***	***
DIVCOV	1.02954	4.13951		−1.50749	10.94006		0.70371	0.86724		1.58895	2.35221		**	**
PE	2.00102	13.41952		0.33854	3.32617		9.32012	17.11151		10.55722	22.03322		*	**
Growth														
MVBV	4.01088	5.53435		2.5903	4.67312		3.04244	3.62545		4.85093	9.16314		*	**
Profitability														
PLOWB	3.49403	7.51467		4.16176	12.80474		1.45446	6.98415		0.74224	11.37536		*	*
OPM	−0.10043	1.83437		0.17114	3.79912		−0.69374	2.70753		−1.56045	5.49045		**	**
NPM	−0.15016	1.8206		0.11798	3.78999		−0.75957	2.69612		−1.63757	5.39983		**	**
ROSC	−0.13489	0.7798		0.20936	1.14506		−0.03644	0.53487		−0.18681	1.05011		**	**
ROCE	0.01079	0.26386		0.08112	0.61916		−0.03573	0.5239		−0.22975	0.85461		*	*
Liquidity														
CUR	2.39123	5.20219		2.70762	9.34648		8.47532	13.02886		13.23829	27.96148		**	**
CASH	4.36117	12.79833		2.33102	3.51797		2.45732	4.03304		4.13556	8.9114		**	**
QUI	2.39123	5.20219		2.70762	9.34648		8.47532	13.02886		13.23829	27.96148		**	**
CFM	−0.10793	1.80566		0.2966	3.69966		0.49548	7.68706		−3.99484	17.90465		*	**
WCR	0.60513	2.05868		0.45049	4.20555		0.8329	4.98644		2.03772	6.31571		*	*
Leverage														
ETL	3.62634	16.71694		1.47782	5.06827		6.55221	8.15292		8.61235	13.42283		*	**
INTCOV	3.20094	8.51782		3.95295	16.06414		0.11623	8.1694		2.65308	19.61893		*	***
DEBTE	0.99199	4.06155		0.82449	3.48298		0.54087	1.85767		1.28147	4.70864		*	**
DSFU	0.50443	1.23136		−1.89203	18.00289		1.35534	6.42273		1.09665	4.92777		*	*
(continued)														

(continued)

Table A7.
H5 Results (Only significant results displayed)

Table A7.

Panel A: Results of Test 1a										Pair-wise <i>F</i> -test for equality of variances	
Variables	2010		2011		2012		2013		2010–2011	2012–2013	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation			
<i>Germany</i>											
Size											
SALESHA	6.37949	11.37305	4.02894	4.64062	3.81774	5.32318	4.97658	9.2266	*	*	
NAVSH	6.56211	6.62271	5.04877	4.87637	3.97987	3.70093	5.18672	6.45398		*	
Investment											
DIVSH	0.27856	0.63787	0.36654	0.74987	0.20421	0.59306	0.51184	1.34277		**	
DIVYI	0.08676	0.42103	0.34681	1.57551	0.10387	0.57739	1.00448	5.6874	*	*	
PE	4.99277	11.44885	8.5283	16.5876	2.31325	13.42251	3.2557	21.39848	*	**	
Profitability											
PLOWB	1.81112	4.00981	3.27794	6.52031	1.56924	5.59235	3.38352	7.92177	**	**	
OPM	0.32607	1.32588	0.57471	3.03981	−1.16163	6.68168	−3.35431	11.61465	*	*	
NPM	0.27273	1.26838	0.54365	3.00142	−1.32733	6.3534	−3.32406	11.60908		*	
ROSC	0.2904	1.64347	0.00028	0.37992	−0.03677	0.44951	−0.40212	2.50441		*	
Liquidity											
CUR	6.94702	6.72043	9.70117	18.82794	5.58677	5.5877	7.69598	10.76265	*	*	
CASH	4.16347	10.49637	5.11818	13.31893	4.45949	11.26285	2.01752	3.21901		***	
QUI	6.94702	6.72043	9.70117	18.82794	5.58677	5.5877	7.69598	10.76265	*	*	
CFM	1.37996	11.179	0.17311	3.24329	−0.80027	5.10529	−3.27513	11.62933		**	
WCR	0.6342	2.88309	1.4066	6.99424	2.76793	13.13265	1.61608	7.43698	*	*	
Leverage											
DEBT	3.36134	3.83121	4.81655	7.1026	5.89608	9.32104	5.64413	9.5301	**		
ETL	4.76354	5.03637	6.01758	7.84534	4.46961	6.25693	6.52694	13.45421	*	**	
TLSFU	0.74032	2.20111	1.02385	2.6418	0.6888	0.93881	1.28939	2.88781		**	
CLSFU	0.15402	0.32199	0.4753	1.56069	0.25219	0.43793	0.52551	1.50513	*	*	
INTCOV	2.20524	8.566	0.89079	15.14612	0.15686	9.65815	−0.28725	16.23109	**	*	
DEBTE	0.60985	2.69962	0.8925	2.78404	0.88111	2.64863	1.76614	6.22696	*	*	
DSFU	0.27693	2.79358	0.54694	1.82506	0.6049	1.96751	1.47917	5.86864		*	

(continued)

(continued)

Panel A: Results of Test 1a

Variables	2010		2011		2012		2013		Pair-wise <i>F</i> -test for equality of variances	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	2010–2011	2012–2013
<i>UK</i>										
Size										
SALESHA	1.42626	1.87635	0.90418	1.18228	1.10258	1.40456	1.57381	2.1054	***	*
NAVSH	3.25342	2.91361	4.87325	6.33165	3.88213	3.97432	6.0662	8.33761	***	***
Investment										
DIVSH	0.14301	0.12057	0.1854	0.16711	0.21454	0.18101	0.22058	0.1959	*	*
DIVY1	0.04313	0.0316	0.06649	0.06628	0.06879	0.0787	0.04777	0.03856	*	*
DIVCOV	3.8057	5.38215	0.32449	4.32205	1.19517	4.25153	4.6602	5.51311	***	***
PE	7.84164	12.95414	5.4261	21.0314	4.82284	11.23845	7.96659	7.58842	*	*
Growth										
MVBV	1.82254	2.58508	3.32355	9.91163	1.95003	4.20044	4.3043	12.73122	***	***
Profitability										
PLOWB	2.88271	4.22061	2.53396	9.43067	1.34642	7.92674	1.62919	6.47813	*	*
ROSC	0.09874	0.12282	0.07774	0.24328	0.17516	0.5506	0.12601	0.20006	***	*
EPS	0.61218	0.9437	0.24529	0.84573	0.48645	1.01349	0.99307	1.42097	***	***
ROCE	0.07829	0.15931	0.11907	0.32073	0.16028	0.5378	0.00957	0.57618	*	*
Liquidity										
CUR	2.33762	4.10305	4.49478	10.9762	2.41277	2.86499	3.59121	7.70302	***	*
CASH	1.95639	5.33458	1.95949	4.06089	1.22481	1.7642	2.5836	7.10516	***	***
QUI	2.33762	4.10305	4.49478	10.9762	2.41277	2.86499	3.59121	7.70302	***	*
CFSH	0.71553	0.97936	0.34204	0.90703	0.57007	1.03395	1.08947	1.4331	*	*
WCR	0.00585	3.07367	0.35866	6.84636	−0.19272	2.68673	−0.39855	5.02422	*	*
Leverage										
DEBT	1.71102	1.72557	2.21752	2.69868	2.48885	3.76062	4.94188	13.64583	***	***
ETL	2.23228	2.2774	4.29891	8.64991	3.03094	4.37669	6.09287	13.67522	***	***
TLSFU	0.825	1.30295	1.38737	3.31607	1.35769	5.08927	1.21916	5.63843	*	*
CLSFU	0.34446	0.75251	0.52725	1.31934	0.53546	3.98214	0.50707	4.73983	***	***
INTCOV	8.42453	9.93636	8.58923	16.22567	8.57869	8.23333	11.23228	13.93386	*	*
IGEAR	1.15135	4.33985	−0.09711	1.9322	0.2763	1.12574	0.0905	0.57089	*	*

(continued)

Table A7.

Table A7.

Panel A: Results of Test 1a										Pair-wise <i>F</i> -test for equality of variances	
Variables	2010		2011		2012		2013			2010–2011	2012–2013
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation			
<i>US</i>											
Size											
SALESHA	9.90287	10.80645	8.12996	7.84843	8.38255	8.54154	9.57645	10.98327	**	*	*
NAVSH	14.94961	15.75285	14.35624	11.17384	13.88408	10.68414	15.64397	13.6162	*		
Investment											
DIVSH	1.51469	3.41311	1.1565	1.6606	1.10948	1.08562	1.33954	2.46112	**	*	*
DIVYI	0.06255	0.15246	0.06857	0.18679	0.08009	0.24181	0.0524	0.13061	*		*
DIVCOV	0.32724	8.07798	0.76822	3.10233	0.60722	1.83744	1.24533	2.32621	*	*	*
PE	11.22064	28.04251	10.00086	21.93105	10.82662	28.53658	19.1688	25.95973	**		
Growth											
MBV	2.21874	4.3864	1.66177	2.5499	1.87358	3.0659	2.51674	5.04452	**		**
Profitability											
PLOWB	0.49264	17.57637	1.85184	10.08118	1.11279	11.76157	1.83618	18.61057	*		*
OPM	0.37384	1.80291	0.1435	0.49019	0.13804	0.51779	0.28159	1.956	**		*
ROSC	0.1816	0.94395	0.15988	0.94412	0.09197	0.2977	0.15402	0.74955	*	**	**
ROCE	0.0637	0.35194	0.136	0.90996	0.04096	0.14085	0.08648	0.45336	*	**	**
Liquidity											
CUR	2.12702	3.04007	1.78025	2.24478	1.75029	2.34824	2.08176	3.06104	*		**
CASH	0.81183	1.65351	0.65141	1.11947	0.71926	1.53286	0.75706	1.49112	**		**
QUI	2.12702	3.04007	1.78025	2.24478	1.75029	2.34824	2.08176	3.06104	*	**	**
WCR	−0.0241	5.64126	−0.02224	3.44819	0.18585	10.47791	−0.67127	3.993	**	*	*
Leverage											
DEBT	2.27428	3.18699	1.89981	2.02795	2.39803	4.02688	2.04847	2.59545	**		*
CGEAR	1.13586	2.50377	0.87156	1.26079	0.82398	2.5143	0.78149	1.0279	**		*
INTCOV	6.13541	23.68729	2.64226	16.82492	4.65839	18.34971	4.78832	9.90915	**		**
IGEAR	0.25034	3.53862	0.0891	4.54287	0.09835	4.55149	0.57272	2.57496	*		*
DSFU	0.48638	0.98994	0.73695	1.46366	0.6824	1.94025	0.6506	2.08556	**		

(continued)

Panel B: Test 1b: OLS regression of price on BVPS and NPPS						
	2010	Sig	2011	Sig	2012	Sig
<i>Australia</i>						
<i>R</i> ²	0.688		0.834		0.673	
BVPS	2.630	***	2.040	***	3.413	***
NPPS	5.388	**	5.332	***	7.698	**
Sample Size	57		57		57	
<i>Germany</i>						
<i>R</i> ²	0.560		0.518		0.540	
BVPS	1.224	***	1.109	***	1.562	***
NPPS	2.407	***	1.366	**	0.657	**
Sample Size	42		42		42	
<i>UK</i>						
<i>R</i> ²	0.725		0.819		0.800	
BVPS	0.558	***	0.595	***	0.516	***
NPPS	0.721		0.677	*	1.078	*
Sample Size	40		40		40	
<i>US</i>						
<i>R</i> ²	0.599		0.684		0.557	
BVPS	0.329	***	0.261	***	0.491	***
NPPS	2.683	***	3.165	***	2.386	***
Sample Size	158		164		166	

(continued)

Table A7.

Panel C: Test 2: Logistic regressions					
Variable	Coefficients	2010–2011	Sig	Coefficients	2012–2013
<i>Australia</i> ΔTQ Included Cases	–1.459 (0.774) 106		*	0.939 (0.461) 109	**
<i>Germany</i> ΔTQ Included Cases	–1.415 (0.424) 89		***	1.473 (0.707) 93	**
<i>UK</i> ΔTQ Included Cases	–2.069 (0.758) 83		***	–2.483 (1.285) 76	*
<i>US</i> ΔTQ Included Cases	–1.030 (0.333) 320		***	0.393 (0.181) 338	**
Panel D: Test 3a: Pearson correlation between Accruals-OCF					
	2010	2011	Sig	2012	2013
<i>Australia</i> DAC-OCF Sample Size	–0.563 57	0.366 57	***	0.312 57	0.582 57
<i>Germany</i> DAC-OCF Sample Size	–0.357 49	–0.287 49	**	0.289 49	0.393 49
<i>UK</i> DAC-OCF Sample Size	–0.308 43	0.527 43	***	0.469 43	0.495 43
<i>US</i> DAC-OCF Sample Size	–0.221 172	0.521 172	***	0.366 172	0.157 172
(continued)					

Panel D: Test 3b: Logistic regression of accruals					
Variable	2010–2011		Sig	2012–2013	
	Coefficients			Coefficients	Sig
<i>Australia</i>					
DAC	–3.538 (1.942)		*	–8.887 (5.131)	*
Included Cases	73			71	
<i>Germany</i>					
DAC	3.226 (1.906)		*	4.997 (2.996)	*
Included Cases	60			88	
<i>UK</i>					
DAC	3.251 (0.862)		***	–10.180 (3.953)	**
Included Cases	76			66	
<i>US</i>					
DAC	0.979 (0.559)		*	–1.977 (1.041)	*
Included Cases	249			280	
Panel D: Test 3c: Earnings quality					
Test Variables	2010			2012	
	Coefficients		Sig	Coefficients	Sig
<i>Australia</i>					
R^2 adj	0.253			0.160	
F test	18.980		***	10.326	***
OCF	0.003		***	–0.018	***
	(0.001)			(0.006)	
Sample size	54			50	
<i>Germany</i>					
R^2 adj	0.443			0.315	
F test	36.761		***	20.340	***
OCF	–0.451		***	0.282	***
	(0.074)			(0.062)	
(continued)					
<i>2013</i>					
				Coefficients	Sig
				0.424	
				37.864	***
				–0.104	***
				(0.017)	
				51	
				0.214	
				9.980	***
				0.028	***
				(0.009)	

Table A7.

Panel D: Test 3c: Earnings quality									
Test Variables		2010		2011		2012		2013	
		Coefficients	Sig	Coefficients	Sig	Coefficients	Sig	Coefficients	Sig
Sample size		46		40		43		34	
<i>UK</i>									
<i>R</i> ² adj		0.442		0.309		0.187		0.200	
<i>F</i> test		34.308	***	18.882	***	9.049	***	9.778	***
OCF		-2.206	***	-1.814	***	-0.126	***	-0.191	***
		(0.377)		(0.418)		(0.042)		(0.061)	
Sample size		43		41		36		36	
<i>US</i>									
<i>R</i> ² adj		0.180		0.178		0.118		0.169	
<i>F</i> test		38.605	***	36.686	***	23.292	***	35.462	***
OCF		4.858	***	-1.382	***	0.232	***	2.760	***
		(0.782)		(0.228)		(0.048)		(0.464)	
Sample size		172		166		168		170	
Note(s): *, **, *** indicate statistically significant factors at 10, 5 and 1% (two-tailed) level respectively									