

THE VALUE RELEVANCE OF MANDATORY IFRS ADOPTION IN SOUTH AFRICA

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1. INTRODUCTION

International Financial Reporting Standards (IFRS or IAS), are accounting standards issued by the International Accounting Standards Board (IASB). A goal of the IASB is to issue internationally acceptable, high quality financial standards. Much research has been undertaken which addresses the question as to whether IAS are associated with higher accounting quality than the application of non-United States (U.S.) domestic accounting standards (Barth, Landsman & Lang, 2008). This study focuses on one of the measures of accounting quality, namely value relevance. It assesses whether listed South African firms which applied IFRS for the first time in 2005 showed an increase, decrease or no change in value relevance.

This paper explores the vast literature which exists relevant to accounting quality and more specifically value relevance. It also provides insight into the South African context of financial reporting. Based on the literature examined in this paper, there is an indication that there are mixed results as to whether accounting amounts reported under IFRS are more or less value relevant than accounting amounts reported under local Generally Accepted Accounting Practise (GAAP) and as a result no formal prediction is made in the hypothesis.

Value relevance is measured, based on the Ohlson (1995) model which involves regressing the share price on the book value of equity and net income per share to assess the relative and incremental value relevance of IFRS. The results from the regressions (supported by robustness checks) indicate that pre-IFRS domestic GAAP financial statements are relatively more value relevant compared to that of IFRS financial statements.

Furthermore, incremental value relevance is measured from the pre-adoption to the post-adoption period and results from those regressions indicate that book value of equity per share was incrementally irrelevant in the pre-adoption period whereas net income per share became incrementally relevant in the post-adoption period.

This study will contribute to the existing literature by examining whether IAS-based accounting amounts are more or less value relevant reported under IFRS compared to domestic GAAP. Thus, further attempting to answer the research question if financial statements reported under IFRS are of a higher quality.

This study indicates that the general market participants' perception was altered negatively as a result of the adoption of IFRS and that a 'one-size-fits-all' approach is an inappropriate viewpoint on the adoption of a set of accounting rules for South African firms.

Further, South Africa provides an interesting setting for this study as since 1995, the South African Institute of Chartered Accountants (SAICA) started to adopt IFRS without modification (Prather-Kinsey, 2006). Therefore the content of the pre-IFRS domestic GAAP issued by SAICA prior to the formal adoption of IFRS in 2005 were virtually the same as that of IFRS. This differs from other institutional settings as pre-IFRS domestic GAAP in other countries mostly differed to that of IFRS arising from the fact that IFRS is generally 'principles-based' compared to other domestic GAAP which may be 'rules-based' (Carmona & Trombetta, 2008).

However, the results obtained in this study are subject to various limitations. These limitations are a result of: market inefficiencies; the fact that results may not be generalised to other countries; the long-term effects of IFRS not being examined; significant economic events occurring during the period of time under examination and inherent weaknesses in the research design.

The remainder of this study is presented as follows: Section 2 reviews prior literature; Section 3 provides information on the South African financial reporting environment; Section 4 develops the hypothesis; Section 5 and Section 6 respectively explain the research method and sample selection process; Section 7 presents the results of the regressions; Section 8 explains the robustness checks performed and Section 9 offers concluding remarks and suggestions for future research.

2. LITERATURE REVIEW

2.1. PRIOR RESEARCH RELATING TO IFRS ADOPTION AND ACCOUNTING QUALITY

A large body of research exists in which the effect of mandatory as well as voluntary adoption of IFRS has been analysed on ‘accounting quality’. According to Barth *et al.* (2008) the following main elements encompass higher accounting quality namely: firms having quality earnings exhibiting less earnings management, firms exhibiting more timely loss recognition and a higher value relevance of earnings and equity book value.

This paper focuses on the last mentioned element of higher value relevance of earnings and equity book value for the reasons outlined below.

Firstly, for quite some time, the IASB has been revising its existing Framework (FW) of financial reporting. The newly revised FW identifies relevance and faithful representation as two fundamental qualitative characteristics of decision-useful financial reporting information. According to the FW, information is relevant if it is capable of making a difference in the decisions made by users in their capacity as capital providers. According to Barth, Beaver & Landsman (2001) tests of value relevance represent one approach to operationalise the criteria of

relevance and reliability. Thus, it would be worthwhile to determine if earnings and book value of equity reported under post-adoption IFRS in South Africa are indeed representative of the fundamental qualitative characteristic of relevance.

Secondly, as early as 1995, SAICA started to adopt IFRS without modification. (Prather-Kinsey, 2006) and therefore the content of the pre-IFRS domestic GAAP issued by SAICA prior to the formal adoption of IFRS in 2005 was virtually the same as that of IFRS. Thus, it would be worthy to establish whether financial statements reported under post-adoption IFRS (which is merely a name change in standards) are considered to be more value relevant by market participants as opposed to earnings and book value of equity reported under pre-adoption domestic GAAP statements.

Prior research has analysed the effects of IFRS adoption for firms within a number of countries worldwide.

On the international front, Daske *et al.* (2008) analysed the effect on market liquidity, cost of capital and Tobin's Q (all being market-based constructs reflecting changes in financial reporting quality) for 26 different countries using firms which were mandated to adopt IFRS. It was found that, on average, there was an increase in market liquidity, a decrease in the cost of capital as well as an increase in equity valuations for such firms. Such capital market benefits being more pronounced in countries in which there were incentives to be transparent and where legal enforcement is strong.

By analysing firms with equity being traded on European stock markets, Armstrong *et al.* (2009) examined three-day market-adjusted returns centred on sixteen events which assessed the likelihood of IFRS adoption in Europe and found a more positive market reaction for firms with

lower quality pre-adoption information and higher pre-adoption information asymmetry entailing that investors expected net information benefits from IFRS adoption.

Gassen & Sellhorn (2006) estimated a determinant model of IFRS adoption for firms in Germany which voluntarily adopted IFRS over the period 1998 – 2004. By using such a model, it was found that firms using IFRS had more persistent, less predictable and more conditionally conservative earnings compared to firms applying German-GAAP. In addition, IFRS adopters experienced a decline in bid-ask spreads of 70 basis points and had 17 more days of price changes per year. The result indicating that less information asymmetry differences existed between those firms which applied IFRS and those firms which applied German-GAAP.

Research also exists in which the focus is on a specific element of accounting quality being the effect of IFRS adoption on earnings management. Jeanjean & Stolowy (2008) selected Australia, United Kingdom and France which were three countries which adopted IFRS for the first time before 2005. By analysing earnings one and two years prior to and one and two years after the transition period of 2005 – 2006 it was found that the pervasiveness of earnings management did not decline after the introduction of IFRS with regards to Australia and the United Kingdom but had actually increased in France. Hence, not resulting in an overall increase in accounting quality. Furthermore, it was discussed that management incentives as well as national institutional factors played a more pivotal role in determining financial reporting characteristics and that similar accounting standards alone are not enough to create a common business language.

As indicated above, mixed results show that the benefits of IFRS adoption vary on a country-by-country basis. This study will examine whether the formal adoption of IFRS by South Africa in

2005 resulted in an increase in accounting quality and more specifically related to value relevance.

2.2. VALUE RELEVANCE

Value relevance is one of several ways in which accounting quality can be measured (Barth *et al.*, 2011; Lang, Ready & Yetman, 2003; Lang, Ready & Wilson, 2006; Barth *et al.*, 2008). Furthermore, tests of value relevance are useful to measure the criterion of relevance per the FW (Barth *et al.*, 2001). Barth *et al.* (2009) describes value relevance as a measure which summarises how well accounting amounts reflect a firm's underlying economics, regardless of potential sources of differences in accounting quality as reflected in other quality metrics. An accounting amount is defined as being value relevant if it has a predicted association with equity market values and hence reflects information which is relevant to investors when valuing the firm and can be measured reliably enough to be reflected in share prices (Barth, Beaver & Landsman, 2001; Ohlson, 1999; Barth, 2000). In addition, it is closely related to the objective of financial reporting (as discussed in Section 2.1 above) which is to provide information which is useful to investors and other financial statement users in making capital allocation decisions.

2.3. CATEGORISING VALUE RELEVANCE STUDIES

The Section below provides the reader with a summary of prior literature.

Based on guidance provided by André, Evans & Tsalavoutas (2010), Callao, Jarne & Lainez (2007) and Emanuel, Hsu & Wong (2009), prior literature related to value relevance can be grouped into three separate categories namely:

- Value relevance of IFRS in pre-2005 national contexts which discusses the early evidence of the impact of IFRS upon the value relevance of the book value of equity and earnings for those voluntary IAS adaptors in single countries;
- Post-2005 IFRS adoption in several countries after the mandatory adoption of IFRS; and
- Post-2005 mandatory IFRS adoption in single countries.

2.3.1. PRE-2005 NATIONAL CONTEXTS

In the Chinese context, companies are obligated to report in both IFRS as well as domestic GAAP as there are two distinct markets for local and international investors. Bao & Chow (1999) showed that by using the Ohlson (1995) model as well as Davidson-MacKinnon J-test, earnings and book value reported based on IFRS had greater information content than those based on domestic GAAP in respect of a number of listed Chinese companies during 1992 and 1996. Similarly, Sami & Zhou (2004) and Liu & Liu (2007) found the same results. However, Lin & Chen (2005) found that there was no material benefit of reporting amounts under domestic GAAP over reporting amounts under IFRS by means of reviewing the relationship between cash flows and returns and using the incremental association research design respectively.

Germany has been used in a variety of studies due to that fact that Germany was one of the first countries to allow the use of IFRS and a large number of firms had voluntarily decided to adopt IFRS as firms which were listed on a particular segment of the Frankfurt Stock Exchange were obligated to produce financial statements based on and prepared in accordance with IFRS or US GAAP (André *et al.*, 2010; Beckman, Brandes & Eirle, 2007). Furthermore, due to Germany's institutional background, German GAAP was focused on the needs of creditors as opposed to IFRS' focus on shareholders resulting in a more conservative form of financial reporting.

Hung & Subramanyam (2007) investigated value relevance for 80 German firms during the period 1998 – 2002. By means of using a relative as well as an incremental association research design it was found that IFRS did not improve the relative value of book value and net income. IFRS adjustments to book value were value relevant whilst the adjustments to net income were value irrelevant.

Contrary to the results obtained above; Bartov, Goldberg & Kim (2005) found a higher relevance of IFRS earnings compared to that of German GAAP. This result is supported by Jermakowicz, Prather-Kinsey & Wulf (2007) which used a regression to determine the association between the book value of earnings and the equity and market values of DAX-30 companies during the period 1995 – 2004. A significant relationship between the book value of earnings and the market value of equity was found. The reason for differing results in the German context could be explained by the fact that there was a high incidence of non-compliance which may have negatively affected investors' perceptions of the companies adopting IFRS (André *et al.*, 2010). Further inconsistencies between the results may have been due to inconsistencies in sample selections as well as models adopted in the studies mentioned above (Emanuel *et al.*, 2009).

Finally, it should be noted that self-selection bias may arise as the choice of voluntary adoption of the IFRS rested with the firms and as such, the IFRS would have only been adopted if the expected benefits would have exceeded the expected costs thus predicting a capital market benefit. Therefore, results from the tests documented above relating to voluntary adopters cannot be generalised to those firms which were mandated to adopt IFRS due to the external validity issue mentioned above (Emanuel *et al.*, 2009; Daske *et al.*, 2007).

2.3.2. PRE- AND POST-2005 IFRS ADOPTION IN SEVERAL COUNTRIES

Barth *et al.* (2008) found that firms from 21 countries applying IFRS and which adopted IFRS between 1994 and 2000 and after controlling for differences between adopters and non-adopters prior to IFRS adoption, generally evidenced higher value relevance of accounting amounts compared to matched sample firms which applied domestic standards (other than US GAAP). The period mentioned being prior to IFRS being mandatorily adopted in such countries.

Capkun *et al.* (2008) selected nine countries in the European Union from which they extracted a sample of 1 722 firms after the mandatory implementation of IFRS in 2005 and it was found that partial and full IFRS earnings reconciliations disclosures are incrementally value relevant but not those related to the book value of equity.

Aubert & Grudnitski (2008) measured value relevance in respect of IFRS adoption in 15 countries spanning 20 industries in the EU. A statistically significant relationship between IFRS accounting information and market returns was found for firms in a sample of all countries combined together as well as in the individual countries' sample of Belgium, Finland, Germany, Norway and the United Kingdom.

2.3.3. POST-2005 MANDATORY IFRS ADOPTION IN SINGLE COUNTRIES

André *et al.* (2010) examined the value relevance of accounting numbers before and after the mandatory introduction of IFRS for 153 Greek firms after the introduction of IFRS in Greece in 2005 and did not find any significant changes in the book value of equity and earnings.

Callao *et al.* (2007) examined the impact of the mandatory introduction of IFRS on Spanish firms by using the book-to-market ratio to determine the relevance of IFRS. The results showed

there was no improvement in the relevance of financial reporting to local stock market operators as the gap between book and market values was wider when IFRS was applied.

Emanuel *et al.* (2009) examined the effect of mandatory IFRS adoption on value relevance in a sample of fifty-one publicly listed firms in New Zealand. It was found that the book value of equity and net income is incrementally less value relevant under IFRS. IFRS reconciliation adjustments were also incrementally value irrelevant for all companies.

2.3.4. INCONSISTENT RESULTS

The results explained in the sections above clearly indicate there is an inconsistency in the results after the mandatory as well as voluntary adoption of IFRS in both the single-country and multi-country studies. Emanuel *et al.* (2009) explains that the inconsistent results may be as a result of different institutional settings of the countries as well as differences which exist between domestic GAAP and IFRS. Deegan (2007) explains that key obstacles to standardisation are cultural and institutional differences between countries and therefore it may not be appropriate to have a single set of accounting rules applicable to all countries. Furthermore, enforcement and implementation of IFRS remains a domestic responsibility (Ball, 2006) and it is therefore noted that Daske *et al.* (2008) found that capital market effects for countries with strict enforcement regimes as well as institutional environments which provided strong reporting incentives.

In addition, by examining the effect on cost of equity capital as a result of mandatory IFRS adoption in the EU , Li (2010) found that the reduction in the cost of equity capital was only present in countries with strong legal enforcement.

Lastly, Soderstrom and Sun (2007) found that accounting quality after IFRS adoption rests on three pillars namely, the quality of the accounting standards; the country's legal and political

system in which the firm resides; and the financial reporting incentives. Since value relevance is a measure of accounting quality, the fact that countries have different political and legal systems, financial reporting incentives may possibly be a reason for the inconsistent results above.

3. SOUTH AFRICAN CONTEXT

3.1. MANDATORY ADOPTION OF IFRS

The South African Institute of Chartered Accountants (SAICA) as well as the Accounting Practices Board (APB) promulgates South African accounting standards. As early as 1995, SAICA has been adopting IFRS with minor modifications (Prather-Kinsey, 2006). Effective in 2000, South Africa further adopted IFRSs which brought South African principles in almost total harmonisation with IFRS (Crotty, 1999). As from 2003, SAICA took the decision to issue IFRS in South Africa without any amendments thereto (SAICA, 2003a:3). As from 1 January 2005, firms listed on the Johannesburg Securities Exchange (JSE) were required to present financial statements in accordance with IFRS only (Meyer, Stiglingh & Venter, 2006).

3.2. SOUTH AFRICAN INSTITUTIONAL BACKGROUND

The JSE is the sole share exchange in South Africa. JSE rules provide that all listed firms must prepare annual financial statements in English and which are audited by a Registered Auditor and Accountant with the Independent Regulatory Board of Auditors (IRBA). Both La Porta *et al.* (1998) and Prather-Kinsey (2006) find strong shareholder rights on the JSE as well as increased surveillance of insider trading on the JSE presumably as a result of the enactment of the Insider Trading Act Number 135 of 1998.

Although South Africa may have strong shareholder rights, Daske *et al.* (2008) indicates that South Africa has a low rule of law score but a higher transparent earnings score.

The fact that capital market effects are more pronounced for those countries with stricter legal enforcement and institutional environments providing stronger reporting incentives, may therefore indicate that the capital market effect for South Africa is less pronounced based on the opposing scores of rule of law and transparency of earnings.

3.3. PRIOR RESEARCH IN THE SOUTH AFRICAN CONTEXT

Prather-Kinsey (2006) assessed whether developing countries (South African and Mexican investors) found developed-country accounting standards useful during the convergence phase (1998 – 2000). By means of a weighted least-squared regression model, results showed that South Africa and Mexico both find the book value of equity and earnings as value relevant as there is a significant association between the book value of earnings and equity with market value on both the JSE and Bolsa Mexicana de Valores Stock Exchange (BMX).

More recently, Negash's (2008) examined the IAS adoption effect on the JSE listed firms using a version of the Ohlson (1995) model (book value plus earnings and dividends), and applied a four year window period to examine the value relevance of accrual accounting information in the pre-IFRS adoption period of 1989 – 1993 and post IFRS adoption period of 1998-2004. It was found that value relevance of accounting information did not improve in the post IFRS adoption period. The Negash (2008) study differs from this study regarding key focus areas. Whereas Negash (2008) adopts a political approach and examines whether value relevance of accrual accounting information changed in the 'post-liberalisation' period (1998 – 2004), this study does not adopt a specific political approach in that all the periods under examination in my study however fall into the 'post-liberalisation' period. Furthermore, it should be noted that by this stage, South

African domestic GAAP were almost in total harmonisation with IFRS (refer section 3.2 above) and the formal mandatory adoption by JSE-listed firms in 2005 was not that of a different set of accounting standards but rather the same set of accounting standards merely called by a different name.

To my knowledge, no study has assessed whether or not the value relevance of IFRS financial statements has increased or decreased since the mandatory adoption of IFRS in 2005 for South African firms listed on the JSE. This study attempts to answer the abovementioned research question.

4. HYPOTHESIS DEVELOPMENT

Based on the literature reviewed in the sections above, it can be argued that the value relevance of financial statements in the South African context may have increased post-2005. This is so as the adoption of IFRS would generally result in a decrease in the cost of equity capital but this depends on the degree of legal enforcement of the particular country (Li, 2010). Although South Africa may have strong shareholder rights (see Section 3.2 above), according to the classification provided by Daske *et al.* (2008) South Africa does not have a strong degree of legal enforcement. Furthermore, a unique situation exists as the pre-2005 domestic GAAP and post-2005 IFRS which was mandated were virtually identical in South Africa.

Lastly, based on the literature reviewed in the sections above, there are mixed results as to whether the adoption of IFRS has resulted in an increase, decrease or no change in the value relevance of financial statements. Therefore, based on the above, I do not make any formal prediction and state the hypothesis in the null form:

H_0 : The value relevance of IFRS financial statements in the post-IFRS adoption period is not significantly different from that of pre-IFRS domestic GAAP financial statements.

5. RESEARCH METHOD

The research method of this study will be similar to that which was used by Barth *et al.* 2008 with respect to the testing performed on value relevance. Two metrics for value relevance will be examined. The first value relevance metric will be based on the explanatory power from a regression of share price on net income and equivalent book value. From here on, two regressions will be estimated. Namely, for both the pre-and post-adoption periods.

The first value relevance metric will be the R^2 from the following equation (1).

$$P_{it} = \beta_0 + \beta_1 \text{BVEPS}_{it} + \beta_2 \text{NIPS}_{it} + \epsilon_i \quad (1)$$

Where:

P represents share price¹ after taking into account a four-month lag period

BVEPS represents equity book value per share.

NIPS represents net income per share.

it represents firm and year.

The second value relevance metric will determine whether the financial statements prepared pre- or post- the mandatory adoption of IFRS are incrementally more or less value relevant.

According to Biddle, Seow & Siegal (1995), incremental value relevance determines the incremental information content contribution of one accounting measure (in this case amounts reported under IFRS) over another accounting measure (amounts reported under pre-IFRS domestic GAAP).

¹ BVEPS and NIPS were respectively calculated as Ordinary Shareholders Interest (BFA McGregor as published line-item 02010001) and profit attributable to ordinary shareholders (BFA McGregor as published line-item 02020101) divided by ordinary shares in issue at –year end (BFA McGregor as published line-item 02060201). Share prices were also obtained from the BFA McGregor database.

Incremental value relevance will be estimated based on the following equation (2).

$$P_{it} = \beta_0 + \beta_1 \text{BVEPS}_{it} + \beta_2 \text{NIPS}_{it} + \beta_3 \text{POST}_{it} + \beta_4 \text{PBVEPS}_{it} + \beta_5 \text{PNIPS}_{it} \quad (2)$$

Where:

P represents share price after taking into account a four-month lag period.

BVEPS represents equity book value per share.

NIPS represents net income per share.

POST represents an indicator variable that equals one for observations in the post adoption period and zero otherwise.

PBVEPS represents an interaction variable between BVEPS and POST.

PNIPS represents an interaction variable between NIPS and POST.

it represents firm and year.

To assess whether equity book value and net income per share are incrementally value relevant in the post-IFRS adoption period, coefficients β_4 and β_5 have to be positive and significantly different from zero as determined by two-tailed tests.

As IFRS was mandated for all South African listed entities on 1 January 2005, the pre-adoption period represents the years 2003 and 2004 and the post-adoption period represents the years 2007 and 2008. Therefore, 2005 and 2006 are excluded as including these years may add noise to the results as IFRS was just recently adopted and the market may not have fully understood the effects of IFRS on accounting results.

Furthermore, all variables are winsorised at the 5% level in order to mitigate the effects of outliers on the results.

Finally, all data for the empirical analysis was collected from the BFA McGregor database.

BVEPS is that which contains financial statement amounts as well as share price history for all South African companies which are listed on the JSE All-Share.

6. SAMPLE AND DATA

As documented in Table 1, Panel A, the initial sample consisted of 398 firms which are listed on the JSE. In order to ensure that the identical firms appeared in all four years under examination, certain firms were excluded from the sample. 12 firms were excluded as they had delisted during the period of the sample. A further 158 firms were excluded as they were newly listed in the later years of the sample period and 13 firms were excluded as certain information was unavailable. The final sample therefore consists of 215 firms and 860 firm year observations.

The industry-breakdown of the final sample can be found in Table 1, Panel B. The sample consists of a range of industries with most firms in finance, industrials and consumer services with no industry being over-representative in the sample.

7. RESULTS

7.1. DESCRIPTIVE STATISTICS

Table 2 presents the descriptive statistics for the regression testing performed on relative value relevance.

Both the mean and median for P, BVEPS and NIPS show an increase from the pre-adoption to the post-adoption period. This suggests that the profitability of companies increased in the post-adoption period. The increase is not as a result of differing reporting requirements under IFRS because as already discussed under Section 3.1, pre-adoption domestic GAAP was almost in complete harmonisation with IFRS. Further, it may indicate a growing economy and capital market between the pre-adoption and post-adoption periods (Prather-Kinsey, 2006).

Moreover, the means for all three variables in both the pre-adoption and post-adoption periods are slightly right skewed, with the mean lying between the median and the upper quartile.

Although significant tests for differences in means are not specifically conducted in this study, the differences in the means may be as a result of the industry differences (Barth *et al.*, 2011), for which a robustness check has been undertaken. Refer Section 8 below.

Table 3 presents the Pearson correlations for the regression variables for both the pre-adoption and post-adoption periods. The correlation of P on BVEPS and NIPS are 0.804 and 0.746 in the pre-adoption period and 0.704 and 0.729 in the post-adoption period. All correlations mentioned being significant at the 1% level. Thus, suggesting that both book values of equity as well as net income being reported under IFRS are less value relevant compared to that if reported under pre-IFRS domestic GAAP.

7.2. RELATIVE VALUE RELEVANCE

Table 4 presents the coefficients for regression 1 in respect of the pre-and post-adoption periods. It reveals a decrease in R^2 between the pre-adoption and post-adoption period from 66.80% to 54.60%. Similarly, the adjusted R^2 (which takes into account the explanatory variables) decreased from 66.60% to 54.40%. This implies that the book value of equity per share and net income per share reported under pre-IFRS domestic GAAP explains more about share prices as compared to the amounts being reported under IFRS. Although no formal prediction was made in the hypothesis, this indicates that the value relevance of IFRS financial statements are significantly less compared to pre-IFRS domestic GAAP financial statements.

Turning to the pricing coefficients on book value and net income. The coefficient for book value of equity per share decreased from 0.590 under pre-IFRS domestic GAAP to 0.265 under IFRS. The coefficients for net income per share increased from 0.260 under pre-IFRS domestic GAAP to 0.493 under IFRS. All these coefficients being significant at the 1% level. This suggests that market participants have changed the way in which they price these two accounting measures

into share price in that there is a greater reliance on net income per share as opposed to book value of equity per share. This is consistent with prior research which suggests that equity book value becomes more (less) important in valuation for smaller (larger) and less (more) profitable firms (Lin & Paananen, 2008). Further, this is consistent with the descriptive statistics reported under Section 7.1 in which it was determined that firms on average became more profitable as there was an increase in the mean as well as median of net income per share from the pre-adoption period to the post-adoption period.

7.3. INCREMENTAL VALUE RELEVANCE

Table 5 presents the coefficients as well as correlation matrices respectively for regression 2. The coefficients for the indicator variables of PBVEPS and PNIPS are -0.247 and 0.173 respectively. The coefficient for PBVEPS is significant at the 5% level although the PNIPS is marginally significant at the 10% level. This indicates that the value relevance of book value of equity per share was relevant in the pre-adoption period and this relevance decreased in the post-adoption period. On the other hand, NIPS was relevant in the pre-adoption period but this relevance increased in the post-adoption period. This is consistent with the discussion in Section 7.2 above in which there is a greater reliance on net income per share as opposed to the book value of equity per share.

8. ROBUSTNESS CHECK

8.1 RESEARCH DESIGN

As an additional robustness check in respect of regression (1), the regressions were re-run by inserting an industry dummy variable in order to alleviate the effect that differing industries may have had on the results of the regression.

The revised regression is as follows:

$$P_{it} = \beta_0 + \beta_1 \text{BVEPS}_{it} + \beta_2 \text{NIPS}_{it} + \beta_3 \text{DIndustry} + \varepsilon_{it} \quad (3)$$

Where:

DIndustry represents a dummy variable indicating the industry in which the firm trades. This is based on the industry classification as obtained from the McGregor BFA database.

Refer to Section 6 above in which the descriptions of the other variables are explained.

As was the case with the initial regression, the regression will be run for both the pre-adoption and post-adoption periods.

8.2 RESULTS

The results of the regression are contained in Table 6. Similar to the results as documented above, the R^2 has decreased from 68,40% in pre-adoption period to 57,90% in the post-adoption period. The adjusted R^2 decreased from 70,00% in the pre-adoption period to 56,80% in the post-adoption period. Furthermore, the coefficients for book value of equity per share decreased from 0.708 in the pre-adoption period to 0.224 in the post-adoption period (significant at the 1% and 5% levels respectively). The coefficient for net income per share increased from 0.105 in the pre-adoption period to 0.470 in the post-adoption period (significant at the 5% and 1% levels respectively). The decrease and increase in the respective coefficients is consistent with the results reported in Section 7.

This shows that even when fixed-industry effects are removed, share prices are explained less by accounting information as reported by IFRS and further enforcing the explanation that general market participants place a greater reliance on net income per share to price firms in the post-adoption period as firms (on average) became more profitable in the post-adoption period.

9. SUMMARY AND SUGGESTIONS FOR FUTURE RESEARCH

My results indicate that by using the Ohlson (1995) levels specification model, financial statements reported under IFRS are relatively less value relevant compared to that of the financial statements reported under pre-IFRS domestic GAAP. The results are further enhanced by means of performing a robustness check which uses the firm's industry as a dummy variable. Furthermore, results indicate that the book value of equity reported under IFRS is incrementally less value relevant in the post-adoption period. By contrast net income per share reported under IFRS is incrementally value relevant in the post-adoption period. This being consistent with the fact that on average firms' profits increased in the post-adoption period and earnings became more important in the valuation of more profitable companies (Lin & Paananen, 2008).

As is the case with prior studies conducted, it cannot be completely ascertained that my findings are totally attributable to changes in the financial reporting system rather than that of changes in the firms' incentives and the general economic environment (Barth *et al.* 2008).

The post-adoption periods under review are 2007 and 2008. From September 2007 onwards, the United States (US) economy experienced a down-turn as a result of the liquidity crises as experienced by major US banks (Schlisserman, 2010). As a result of this significant economic event, market participants may have been less reluctant to rely on financial statement amounts in pricing firm's share prices.

The implications of the results of this study indicate that generally market participants view the book values of equity and net income per share reported under IFRS as being less value relevant compared to that of pre-adoption local GAAP. Furthermore, net income per share (as opposed to book value of equity) is being viewed as incrementally relevant in the post-adoption period. This

indicates that indeed a ‘one-size-fits-all’ approach may not necessarily apply in the South African context as market participants are under the impression that accounting rules cannot simply be adopted by South Africa without adjusting them for circumstances specific to South Africa. The circumstances being the South African institutional background is unique in that although South Africa may have a higher transparent earnings score, it in fact scored low for its rule of law (Daske *et al.* 2008).

This study is subject to various limitations. Firstly, the value relevance models assume that the market being assessed is efficient (Emanuel *et al.* 2009), the South African market is far smaller in comparison to that of other countries (US, UK and so forth) thus such a fact may indicate the market being less efficient affecting the results.

Secondly, as the institutional background of South Africa as well as characteristics of the JSE is unique, the results may not be generalised to firms which are listed on other similar exchanges.

Thirdly, this study reviews the change in value relevance for a short period of time, and thus it is not fully representative of the long-term events of IFRS adoption on South African firms.

Fourthly, as indicated above, significant economic effects during the post-adoption period may have impacted upon the post-adoption results.

Lastly, naturally as is the case with research on mandatory IFRS adoption, a limitation exists in the research design itself in that the sample of firms selected did not include a control group of firms which did not adopt IFRS in 2005. This is due to the fact that all listed South African firms were mandated to adopt IFRS by 2005. Therefore, it is difficult to attribute the decrease in value relevance purely as a result of IFRS adoption.

Future research may consider the following aspects: Firstly, the effect of the other two elements of accounting quality (namely earnings management and more timely loss recognition) for South African firms after the adoption of IFRS in 2005; Secondly, the value relevance study can be enhanced by examining results over a longer period of time which considers the long-term effect of the adoption of IFRS on value relevance.

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APPENDIX A

TABLE 1: Sample Selection of companies

Panel A: Sample selection

All companies currently listed on the JSE	398
<i>Less:</i>	
Companies which had delisted	-12
Newly listed companies	-158
Unavailable information	-13
Final Sample	215

Panel B: Industry breakdown

INDUSTRY	NUMBER OF FIRMS	PERCENTAGE OF FIRMS	NUMBER OF FIRM-YEAR OBSERVATIONS	PERCENTAGE OF FIRM-YEAR OBSERVATIONS
Basic Materials	27	12.56%	108	12.56%
Consumer Goods	22	10.23%	88	10.23%
Consumer Services	32	14.88%	128	14.88%
Financials	57	26.51%	228	26.51%
Health Care	3	1.40%	12	1.40%
Industrials	49	22.79%	196	22.79%
Technology	20	9.30%	80	9.30%
Telecommunications	3	1.40%	12	1.40%
Utilities	1	0.47%	4	0.47%
Oil & Gas	1	0.47%	4	0.47%
Total	215	100.00%	860	100.00%

TABLE 2: Descriptive statistics**Test of relative value relevance**

Regression	Variable	Mean	Standard deviation	Minimum	Percentile 25	Median	Percentile 75	Maximum	N
1 (Pre-adoption)									
	P	17.51	27.51	0.06	0.97	4.90	18.18	104.89	430
	BVEPS	8.14	12.28	0.02	0.60	2.91	8.72	46.28	430
	NIPS	1.34	2.22	-0.59	0.02	0.44	1.46	8.20	430
1 (Post-adoption)									
	P	31.22	45.05	0.26	2	11.75	37.5	180.35	430
	BVEPS	12.95	17.96	0.11	1.09	5.10	15.32	69.01	430
	NIPS	2.78	4.29	-0.26	0.12	0.90	3.2	15.89	430

Where:

P represents share price after taking into account a four-month lag period.

BVEPS represents equity book value per share.

NIPS represents net income per share.

TABLE 3: CORRELATION MATRIX**Test of relative value relevance**

		Correlations					
		Pre-adoption			Post-adoption		
		P	BVEPS	NIPS	P	BVEPS	NIPS
P	Pearson Correlation	1	0.804**	0.746**	1	0.704**	0.729**
	Sig. (2-tailed)		0.000	0.000		0.000	0.000
BEVPS	Pearson Correlation	0.804**	1	0.824**	0.704**	1	0.890**
	Sig. (2-tailed)	.000		.000	.000		.000
NIPS	Pearson Correlation	0.746**	0.824**	1	0.729**	0.890**	1
	Sig. (2-tailed)	.000	.000		.000	.000	

*, **, *** Denotes significance at the 0.10, 0.05, and 0.01 levels, respectively, all two-tailed tests.

The variables are as defined in Table 2.

TABLE 4 – TEST OF VALUE RELEVANCE

	Intercept	BVEPS	NIPS	Adjusted R²	R²	N	Overall F Stat
Pre-adoption	-	0.590 ^{***}	0.260 ^{***}	66.60%	66.80%	430	429.306 ^{***}
	(2.618)	(11.988)	(5.274)				
Post-adoption	-	0.265 ^{***}	0.493 ^{***}	54.40%	54.60%	430	257.093 ^{***}
	(4.533)	(3.715)	(6.910)				

^{*, **, ***} Denotes significance at the 0.10, 0.05, and 0.01 levels, respectively, all two-tailed tests. The two-tailed t-statistics are shown in parenthesis.

The variables are defined in Table 2.

TABLE 5 – TEST OF INCREMENTAL VALUE RELEVANCE

	BVEPS	NIPS	POST	PBVPS	PNIPS	Adjusted R ²	R ²	N	Overall F Stat
Coefficient	0.543***	0.296**	0.076**	-0.247**	0.173*	0.591	0.593	860	248.953***
(Two-tailed t statistics)	(7.852)	(3.454)	(2.866)	(-2.977)	(1.774)				

*, **, *** Denotes significance at the 0.10, 0.05, and 0.01 levels, respectively, all two-tailed tests. The two-tailed t-statistics are shown in parenthesis.

Where:

POST represents an indicator variable that equals one for observations in the post adoption period and zero otherwise.

PBVEPS represents an interaction variable between BVEPS and POST.

PNIPS represents an interaction variable between NIPS and POST.

The variables are defined in Table 2.

TABLE 6 – ROBUSTNESS CHECK

PANEL A – COEFFICIENTS AND TWO-TAILED T STATISTICS

VARIABLES	Pre-adoption	Post-adoption
BVEPS	.708 ^{***} (12.246)	0.224 ^{**} (3.187)
NIPS	0.105 ^{**} (1.804)	0.470 ^{***} (6.686)
OTHER		
Adjusted R ²	0.700	0.568
R ²	0.684	0.579
Overall F-stat	43.126	52.228
Number of observations	430	430

*, **, *** Denotes significance at the 0.10, 0.05, and 0.01 levels, respectively, all two-tailed tests. The two-tailed t-statistics are shown in parenthesis.

The variables are defined in Table 2.