The Economic Consequences of Mandatory IFRS Reporting: Emerging Market Perspective

Ijaz Ur Rehman[1], Faisal Shahzad[2]

University of Malaya
Kuala Lumpur, Malaysia
E-mail. ejaaz.1983@gmail.com

COMSATS Institute of Information Technology
Attock, Pakistan
E-mail. faisal_shahzad@comsats.edu.pk

The value relevance of accounting information in the contemporary electronic and institutionally planned market environment has acquired considerable consideration since accounting regulators have positioned the value relevance as the primary feature of accounting information. Given such phenomenon, the existence of transparency related to accounting information in financial markets is a significant issue. IFRS standards have some prerequisite to get the maximum output in terms of getting quality reports. These prerequisites include investor protection, strictly enforced laws, transparency, and active stock market. This study investigates the economic consequences of mandatory IFRS reporting in the domain of value relevant of accounting information in Pakistan. We used panel data methodologies by incorporating the Ohlson (1995) price and product valuation model. The Study has utilized the data of one hundred and seventy (170) firms listed on the Karachi stock exchange from 2006–2010. The overall results show that both earnings per share and book value have positive and significant influence on the share price. Furthermore, the relationship between share price, book value, and earnings per share signifies that relationship tends to deteriorate with the passage of time following IFRS implementation. The study further finds that book value is more relevant than earning per share in pooled, fixed, and random effect.

Keywords: *Value Relevance, Earning per Share, Book Value, IFRS, legal System, Emerging Market.*

Introduction

The value relevance of accounting information in the contemporary electronic and institutionally planned market environment has acquired considerable consideration since accounting regulators have positioned the value relevance as a primary feature of accounting information. Given such phenomenon, the existence of transparency related to accounting information in financial markets is a significant issue. The lack of transparency in the capital markets may lead to the reasonable decline in investor confidence because of the recent financial crisis (Devalle *et al.,* 2010). For this reason, the synchronization of accounting Standards is fundamental to build long lasting global financial stability and efficient capital markets. This offers a wide range of transparency in credit management (Hansen, 2003) to restore the investor confidence. With the introduction of International Financial Reporting Standards (IFRS) in 2005, European-listed firms are compelled to practice their consolidated financial statements in harmony with IFRS. Since then, vigorous discussion has been ongoing among academicians on the possibility to attain global harmonization in terms of international financial reporting standards (Devalle *et al.*, 2010). However, information environment improvement after switching to International Financial Reporting Standards (IFRS) is dependent on two factors. First, it is based upon the argument that adjustment to IFRS constitutes adjustment to a Generally Accepted Accounting Principles (GAAP) that provoke higher quality financial reporting (Soderstrom & Sun, 2008). Second & Ball (2001) argues that country's institutional system determines accounting system in general and it depends on incentives for financial reporting as well (Soderstrom *et al.,* 2008).

It is argued that political and legal aspects provide a much more significant influence on standard development and implementation of accounting structure. Differences in legal systems have impact on quality of accounting information in both the developed and emerging countries (Hung, 2001; Bae *et al.*, 2006; Hung & Subramanaym, 2007; Capkun *et al.*, 2008; Jermokwaticz, 2004; Chalmers *et al.*, 2011). For instance, Rahman and Wulandari (2004) found that the relationship between the value relevance of accounting information and accounting regulatory settings is stronger for code law and emerging market than for common law and developed markets. Similarly, (Soderstrom & Sun, 2008) argues that following the IFRS implementation, the cross-country disparities are expected to exist because overall institutional settings determine the accounting quality of the firms that also includes political and legal system of the country. The aim of this study is to investigate the impact of mandatory IFRS on value relevance of accounting information in an emerging market like Pakistan. It is worth investigating to unearth the potential economic consequences of IFRS adoption on the value relevance of accounting information to draw

conclusions. Given that foreign investors stakes are involved and sizable financing sources in capital markets are composed of foreign investors that have raised the need of harmonized quality of financial information. This study intends to add to the accounting research in country specific context to unearth the degree of responsiveness of value relevance of accounting information following IFRS. We applied the panel regression method to examine the value relevance of financial reporting by the association of share price with earnings per share and book value per share using Ohlson model as a theoretical framework. In a second step, we performed the product model, which is used to control the non-linearity in the model. The product model extends the Ohlson model by taking the product of EPS and BV (Clarkson *et al.,* 2011).

Selected Literature Review

Financial information plays a crucial role for different kind of users of financial reports. (Chen *et al.,* 2010). Information is considered value relevant if it truly represents the value of the company (Francis & Schipper, 1999) and helps an investor to make investment decision and also enable financial managers to monitor the performance of a company (Young & Bryne, 2001). Various researches conducted on the subject of the quality of information following the IFRS adoption. Currently, there is dissimilarity in the findings of previous researches related to the value relevancy of accounting information. Several studies noted that quality of accounting information has improved following the IFRS, because IFRS provides fewer alternatives to the management and they have less chance to manipulate the financial statements. Additionally, IFRS facilitates and develops the legal enforcement in the country which eventually increases the relevance of accounting information (Capkun *et al.,* 2008; Barth *et al.,* 2008; Christensen *et al.,* 2008; Chalmers *et al.,* 2010; Chen *et al.,* 2010; Byard *et al.,* 2011; Gjerde *et al.,* 2011; Chalmers *et al.,* 2011; Jermakowicz, 2004). On the contrary, many researchers noted that quality of information has not been improved following IFRS, because IFRS is principle-based standards and provides greater space for management to manipulate the accounting information opportunistically (Hung & Subramanaym, 2007; Paananen & Lin, 2008; Goodwin *et al.,* 2008; Barth *et al.,* 2008; Kvaal & Nobes, 2010; Ahmed *et al.,* 2010; Gaston *et al.,* 2010). (Ely & Waymire, 1999) examined the relationship between two different accounting standard eras, which include *APB* era (1960–1973) and *FASB* era (1974–1993) by using two different models. They found that the relationship of share price to book value per share and earnings per share was increased when they applied price model and relationship is deteriorated when a return model is used. (Similarly *et al.,* 1999) concluded that value relevance deteriorated due to the high fluctuation in the market using return model. Further, Gjerde *et al.,* (2011) found that if changes in economic value relevance are controlled, then trend of overall value relevance increases. Alex *et al.,* (2004) found that non-information based trading is the main factor which deteriorated the relationship of share price and accounting information.

Keeping in view different methodological approaches (such as firm fundamental value, relative and incremental approach, residual income approach, earning relevancy, time factor, and earning response coefficient) prior researches have investigated the efficiency of information contents of accounting data. For instance, (Kothari & Zimmerman, 1995) found that firm fundamental value is linked to the share price of the company. Whereas, El-Sayed (2012) used incremental and relative approaches to capture the relevance of accounting information and noted that though moving down through the income statement, net income have relative high value relevance as compared to the sale. The relative approach relates comparison of measures providing better information as compared to others as suggested by Holthausen (2000). Another way to view the value relevancy of accounting Information is the residual income valuation model, which states that investors price securities is the expected present value of future dividends. Ohlson (1995) used this model to measure the value relevance of accounting information. This approach takes the share price as the dependent variable affected by the book value per share and earnings per share. Likewise, Ben (2001) concluded that earning is more value relevant for large size firm while book value is more relevant for small size firm. Wallace (2000) found that the value relevance that is used to find out the financial position. Lev (1989) claimed that the quality of information present in the annual reports of the company is the main determinant of value relevance. He used earning response coefficient as a proxy of quality of accounting information and regressed the company earnings with the share price of the company.

The approach of Ohlson (1995) takes into account the share price as a dependent variable affected by the book value per share and earnings per share. Two different estimation approaches (pricing model and return model) are in the literature to estimate the value relevance using accounting information. Collins *et al.,* (1997) found that incremental value of earning decreases with the passage of time, but there is an improvement in the accounting measure of book value per share. Further, he found the effect after jointly regress the book value per share and earnings per share by the share price of the company. The beta is positive for book value per share and earnings per share and it increases with the passage of time. Ben (2001) noted that earning is more value relevant for large size firm while book value is more relevant for small size firm. Ely & Waymire, (1999) also found the positive beta values for the period of sixty-six years from 1927–1993. Lev & Zarowin (1999), however, noted that beta value of earning per share (EPS), book value (BV) per share and cash flow declined over the period. Wallace (2000) found that the value relevance, which is used to find out the financial position and other financial aspect, are decreasing with the passage of time. Barth *et al.,* (2001) concluded that these studies are fruitful for investor to evaluate the equity. Hand (2003) found that Balance sheet, income statement, and cash flow are value relevant when their accounts are in line with the share price of the company. Lev (1989) claimed that the quality of information present in the annual reports of the company is the main determinant of value relevance. He used earning response coefficient as a proxy of quality

of accounting information when he regresses the company earning with the share price of the company. Lev & Zarowin (1999) asserted that there is a weak association between share price and earning. Ou & Penman (1989) found that the accuracy of future earnings can be improved through enhancing the information contents of Balance sheet when they examined the relationship between financial ratios (fundamental analysis), stock prices, and future earnings.

Research Design, Sample, and Models Specification

Given that the adoption of IFRS potentially influence both the income statement and the balance sheet, there are alternative methodologies to capture the influence of IFRS adoption, we, however measured the value relevance of accounting information is an ability of earnings per share (EPS) and book value (BV) per share that affect share price. To examine the association of company share price with of earnings and book value, we used the Ohlson price model instead of return model. This choice was made on the argument that beta coefficient is highly biased in a return model as compared to price model (Kothari & Zimmerman, 1995). Further, Ohlson model has been widely used in the literature (Burgstahler & Dichev, 1997; Collins *et al*., 1997, Hung & Subramanaym, 2007; Paananen & Lin 2008; Stergios *et al*., 2008; Barth *et al*., 2008; Christensen *et al*., 2008; Capkun *et al*., 2008; Chalmers *et al*., 2010; Chen *et al*., 2010; Byard *et al*., 2010; Ahmed *et al*., 2010; Gaston *et al.,* 2010; Chalmers *et al*., 2011; Gjerde *et al*., 2011; Jermakowicz, 2004; Kvaal & Nobes, 2011). Consistent with these studies, the model is specified as follows:

$$\text{Pit} = b_o + b1EPS\text{it} + b2BV\text{it} + eit \qquad (1)$$

Whereas,

Pit = the share price for the firm *I* measured three months following fiscal year *t*;

BVit =the book value of equity per share for firm *i* at the end of period *t*;

EPS *it* = earnings per share for the firm *I* during period *t*;

In estimating the panel regression, we allow all coefficients (including intercepts) to vary across the periods and compare the EPS and BV value relevance slope coefficients, β1 ,β2…βn, between the various periods. We then compared the estimates across different periods. For pooled regressions, the standard errors are clustered year wise. The Ordinary Least Square (OLS) regression model for the pooled data is given as:

$$P_{it} = \beta_0 + \beta_1 V_{it} + \beta_2 Eps_{it} + \mu_{it} \qquad (2)$$

Whereas, the estimates from pooled regressions for panel type datasets are found to be biased, therefore, it is required to estimate random effects or fixed effects regression models. The two models depend on the nature of the regressors' to be included into the estimation. If the regressors' are vary over time, fixed effects model is best represented and if there are regressors which are constant over time, random effects model is the best.

Fixed effects model is given as:

$$P_{it} = \beta_0 + \beta_1 V_{it} + \beta_2 Eps_{it} + v_{it} + \varepsilon_{it} \qquad (3)$$

And the time demeaned model from the above regression is;

$$\bar{P}_i = \beta_1(BV_{it} - \overline{BV_i}) + \beta_2 \ (Eps_{it} - \overline{Eps_i}) + \varepsilon_{it} + \bar{\varepsilon}_i \quad (4)$$

On the other hand, random effects mode is given as:

$$P_{it} = \beta_0 + \beta_1 BV_{it} + \beta_2 Eps_{it} + v_{it} + \varepsilon_{it}\text{v} \qquad (5)$$

Where v_{it} is assumed as random variable or i.i.d. Random effects and $Cov(x_{it}, v_{it}) = 0$ and the estimates are consistent and can be estimated from Eq. (3) Using the pooled regression, but it is to be given on account that serially correlated error terms v_{it} and the standard errors are biased.

The following transformation is required to estimate the random effects model from the pooled regression:

$$(P_{it} - \overline{\theta P_i}) = \beta_0(1 - \theta) + \beta_1(BV_{it} - \theta\overline{BV_i}) + \beta_2(Eps_{it} - \overline{\theta Eps_i}) + \{(1 - \theta)v_{it} + (\varepsilon_{it} + \overline{\theta\varepsilon_i})\} \qquad (6)$$

Where $\theta = 1 - \sqrt{\frac{\sigma_\varepsilon^2}{T\sigma_v^2 + \sigma_\varepsilon^2}}$. If θ is equal to 1, RE estimation is similar to FE, but if it is equal to 0, the RE estimation is similar to pooled regression. Normally θ is assumed to have va value between 0 and 1. If $Cov(x_{it}, v_{it}) = 0$, it is fine and the results are efficient and in case where it is not 0, the RE estimator turns to be biased and the degree of bias depends on value to θ. If $\sigma_v^2 \gg \sigma_\varepsilon^2$, then θ is expected to be close to 1, and the bias in the results tends to be lower.

In Second step, we executed the product model, which is used to control the non linearity in the model. Product model extension the Ohlson model by taking the product of EPS*BV (Clarkson *et al*., 2011)

$$p_{it=} b_0 + b1earn_{it} + b2bv_{it} + b3eps * bv_{.} + eit \qquad (7)$$

Table 1

Summary Statistics of study Variable

Variable	Results	Mean	S.D.	Min.	Max.	Obs.
Share Price	Overall	1,752	4,680	0,01	46,65	850
	Between		4,438	0,03	35,662	170
	Within		1,516	-14,141	14,998	5
Earnings Per Share	Overall	0,150	0,459	-2,74	5,46	850
	Between		0,330	-0,19	2,31	170
	Within		0,320	-2,965	4,350	5
Book Value	Overall	0,732	1,411	-1,47	16,11	850
	Between		1,356	-1,176	11,496	170

We used the product of EPS and BV in our Ohlson model. This adds the non –linearity in the model which control the accounting error due to transition from PGAAP (Pakistan GAAP) to IFRS. One important source of measurement error is contributed by a specific set of accounting standards. Consider, for example, the impact of code law conservatism prior to IFRS adoption. This downward bias in book value and earnings is a source of measurement error induced by accounting standards (Beatty *et al*. 1999). As a second example, consider the move within IFRS towards more fair value accounting. As pointed out by Ohlson (2009), the ultimate use of fair value accounting is perfect mark-to-market accounting. In such a regime, earnings measure permanent (i.e., ''expected'') earnings with considerable measurement error, while earnings perfectly explain returns, earnings do a poorly explain the level of price. This is a source of measurement error introduced by IFRS accounting standards. Making reasonable assumptions about the nature of this measurement error, there is support for the use of a non-linear pricing model that includes a cross-product term of some form.

Our sample is composed of listed firms of Karachi Stock Exchange (KSE). The data for share price, book value, and earnings per share study was gathered from the ThomsonOne Banker database. Total 170 companies were selected from Karachi Stock exchange for which the relevant data was available for 2006–2011, Since Pakistani listed public firms were required under notification from SECP to report under IFRS for the fiscal year ended in December 31, 2005, thus, resulting in 850 firm-year observations for the panel.

Table 1 summarizes the descriptive statistics of share price, book value per share and earnings per share. It is evident from the Table 1 that there are sizeable variations in the mean values of share price, earnings per share and book value. The mean value and standard deviation ($\mu=1.75,\ sd=4,68$) share price is higher than those of earning per share ($\mu=0.150,\ sd=0,459$) and book value ($\mu=0,732,\ sd=1,411$). However, the variance structure of share price and book value is relatively higher than earning per share denoting slight stability in data points as compared to the stock prices and book value.

Analysis and Discussion

Before testing the panel model of regression to examine the impact of IFRS adoption on the value relevance of accounting information, diagnosis of consistency and validity of the parameter estimates is of much importance for parameter estimates and economic interpretations. To account analytical rigor in our analysis, various diagnosis tests are executed for possible statistical debugging. The results are reported in the Table-2. The Wooldridge test for autocorrelation in panel data, given fixed effects test is executed to locate the cross-sectional dependence, which entails that error term is serially correlated across the cross –section and serial correlation in the idiosyncratic errors of a linear panel-data model discussed by Wooldridge (2002). From the simulation, it is evident that the Wooldridge test for autocorrelation has a good power and size characteristics in reasonable sample sizes (Drukker, 2003). Further, we used modified Wooldridge test for autocorrelation in panel data, given fixed effects.The result supports the null hypotheses that there is no first order autocorrelation exist in the panel data.

In the next step, Modified Wald test for group wise Heteroskedasticity is executed to locate constant variance across the cross section. The result shows that the null hypothesis is rejected (P<. 05). To locate whether residual are correlated across the entities, we used Pasaran CD test with the null hypothesis that residual are not correlated, since cross sectional dependence can turn the estimates bias. The initial diagnose test statistics provide a favorable overview to proceed with testing and validating the model, however, to decide whether to use Pooled Ordinary Least Square (POLS) or simple ordinary Least square (OLS), we used Breush-Pagan Larange Multiplier (LM) test to decide either Simple Pooled OLS to be used or Random effect to be used. The result (reported in the Table 3) divulges that random effect is appropriate because significant difference exists across companies.

Haussmann Specification

We have to select one model from fixed effect and random effect options (Hausman, 1978). The Hausman test statistic has been used to choose first a model between pooled and panel regression and then between the fixed effects and random effects. We used the Sargan-Hansen statistics, which has the advantage of overcoming the over-identification restrictions in panel data estimation using fixed and random effects models (Baum *et al.,* 2003). The test statistic has a significant effect or test statistics are significant, (Chi, sq df,2 =125,87) which indicates the preferable use of results from the fixed effect. It is similar to the traditional Hausman test, but Sargan-Hansen statistic approach has its advantages over Hausman. Furthermore, we used yearly regressions and the results have been reported in Table 4. The results indicate that there is a positive relation between the price per share and earnings per share and book value per share for most of the years.

Table 2

Initial Diagnostics Tests

Tests	Test Statistics and Critical value	Inferences
Wooldridge test for Serial correlation Wooldridge test for autocorrelation in panel data, given fixed effects. H0:p=0;Ha:p>0	F(1, 169) = 0,776 Prob > F = 0,3832	Wooldridge test null hypothesis accepted that there is no first order correlation in the fixed effect model.
Modified Wald for Heteroskedasticity test Modified Wald test for group wise Heteroskedasticity H0: sigma(i)^2 = sigma^2 for all i Ha: Not equal for all i.	chi2 (170) = 6,3e+06 Prob>chi2 = 0,0000	The null hypothesis is homoskeddasticity or constant variance. Result show that the null hypothesis rejected as p-value is less than 0.05 at degree of freedom 2.

Tests	Test Statistics and Critical value	Inferences
Testing for Random effects: Breusch-Pagan Lagrange Multiplier(LM) equation	Chi^2(1) = 56,59 Prob > chi2 = 0,0000	Random effect is appropriate because result shows that a significant difference exists across companies. Simple pooled OLS cannot used.
Hausman Specification test $H_o: E(\mu i, t, /Xi, t) = 0$ $H_A: E(\mu i, t, /Xi, t) \neq 0$	Chi^2(2) = (b-B)'[(V_b-V_B)^(-1)](b)=125,87 Prob>chi2 = 0,0000	The difference in the coefficients is. Systematic. Therefore, we choose a fixed effect model.
Pasaran CD test $H_0: Corr(\mu_{i,t}, \mu_{j,t}) = 0$ for $i \neq j$ $H_A: Corr(\mu_{i,t}, \mu_{i,t}) = 0$ for some $i \neq j$	P=0.000 CD=21,630,38	Residuals are correlated across entities.

The Table 3 summarizes the result of regression analysis when we used a pooled regression model, fixed effect model and Random effect model. The pooled regression result indicates that the effect of book value is significant and positive. The coefficient of EPS and BV is positive and significant in the entire three models. Further Coefficient of BV (1,23) is higher than Coefficient of EPS (0,88) in the pooled effect model. Likewise, coefficient of BV (0,86) is higher than Coefficient of EPS (0,77) in a fixed effect model. In addition, Coefficient of BV (1,39) is higher than Coefficient of EPS (1,11) in the random effect model. All the models in Table -1 infer that that Book value (BV) is more value relevant than earning per share (EPS).

Table 3

Regression Analysis of SP, EPS, and BV

Dep. Variable Share Price (SP)	Pooled $Pit = b0 + b1Eit + b2Bit + eit$	Fixed effects $Pit = b1Eit + b2Bit + \alpha i + \mu it$	Random Effects $Pit = b1Eit + b2Bit + \alpha i + \mu it + \varepsilon it$
Earnings Per Share (EPS)	0,888***	0,777***	1.113***
t-stat	(4,63)	(3,95)	(5,34)
Book Value(BV)	1,231***	0,865***	1,394***
t- stat	(9,65)	(5,49)	(11,65)
Intercept	0,717**	1,001***	0,563**
t- stat	(2,66)	(8,51)	(2,72)
N	850,000	850,000	850,000

*, ** and *** indicates significance at 10, 5 and 1% respectively. t-statistic is in parenthesis

The Table 4 summarizes the result of yearly as well as pooled regression of stock price against earnings and book value per share. The R-squared values for the yearly and pooled regression indicate that earnings and book value per share explain the sizeable variation in stock prices which is approximately 79,3 percent (2006), 66,8 percent (2007), 42,9 percent (2008), 55,6 percent (2009), 38,0 percent (2010), and 79,2 percent (pooled). The results further show that the regression coefficients of earnings per share are significantly positive at p < 0,001 level in year 2006, year 2007, year 2009, year 2010 except in the year 2008, which is significant at 5 %. Likewise, book value per share is statistically significant during the years of 2008 and 2009 at the 1 % level of significance.

Table 4

Years wised Pooled Regression Results (n=170) *Pit = b0 + b1Eit + eit and Pit = b0 +b1Bit + eit*

Dep. Variable Share Price	2006	2007	2008	2009	2010
Earnings Per share	10.353***	10.385***	1.802**	3.749***	4.809***
t-stat	(13.62)	(11.07)	(3.04)	(7.18)	(6.67)
Book Value	-0.134	0.256	1.959***	1.582***	0.361
t-stat	(-0.63)	(1.16)	(7.92)	(8.68)	(1.38)
Intercept	0.011	0.317	0.021	0.178	0.214
t-stat	(0.06)	(1.15)	(0.06)	(0.77)	(0.69)
AIC	727.483	881.944	933.675	812.018	909.809
BIC	736.891	891.351	943.082	821.426	919.217
R-squared	0.793	0.668	0.429	0.556	0.380
F	319.465	168.371	62.768	104.422	51.154

*, ** and *** indicates significance at 10, 5 and 1% respectively.

Table 5

Product Model Regression Results (*Pit = b0 + b1EPSit + b2BVit + b3 E*B+eit*)

Dep. Var. P	2006	2007	2008	2009	2010
Earnings Per share (EPS)	21.22**	24.86***	36.76**	10.15 ***	9.05***
Book Value (BV)	-2.16	-1.72	-.795 ***	-.172***	-.592
Product of EPS*BV	-1.94	-3.02	-9.57***	-.584	1.737
R-squared	0.831	.734	0.692	0.829	0.480
F	69.29	38.31	31.59	68.09	275.02
p-value	.000	.000	.000	.000	.000
n	170	170	170	170	170

*, ** and *** indicates significance at 10, 5 and 1% respectively.

In a next step, we used the product of earning per share, and book value per share, which is subsequently in the regression model. The reason behind this modification is to control the non linearity in the model occurred due to the transition of accounting standards reported by Capkun *et al.*, (2010). The result of Table 5 show that values of R^2 decline from year 2006–2008 ($R^2_{,2006}$=0,83,$R^2_{,2007}$=0,73, and $R^2_{,2008}$=0,64) and upward movement in 2009($R2_{,2009}$=0,82) followed by downward trend in 2010 ($R^2_{,2010}$0,39). It is imperative to note that the R-squared trend driven in Table 5 is similar to the trend of R-squared derived from the product model reported in Table 5 yields no methodological differences in trend capturing perspectives. Further, it is evident from the Table 5 that the beta coefficient of earning per share have positive and significant influence of share price at 1 % level of significance, however the relative size of beta's coefficient (β_{2009}=10,15, β_{2010}=9,05) are decreased form the year 2009–10 respectively showing relatively low degree of strength with share price for that particular period. It is worthy to articulate that during that period Karachi Stock Exchange remained a range bound with a predominantly declining trend because of many economic and political factors. The beta coefficients of book value yield negative relationship with the share price and relative size of the beta coefficient decreases over time, whereas the beta coefficient of products of book value and earning per share (e*b) is only statistically significant in the year 2008. For rest of the years, product of book value and earning per share yields positive impact on share price; however, the impact is not statistically significant.

As results of study demonstrate that the value relevance of accounting information is declined after the period of 2006 following the IFRS implementation for both price and product models. Comparatively, earnings per share are providing better results than book value following the IFRS implementation. The findings are consistent with the earlier studies of (Francis & Schipper, 1999; Collins *et al.*, 1997; Wallace, 2000). Predominantly, it includes high fluctuation in the market, non-information based trading, enhancement of agency problems, managers perseverance of their self-interest, compliance costs associated with IFRS transition, volatility to financial statements through bad and good information, absences of real governance, enforcement mechanisms and discretionary accruals. For example, Francis & Schipper (1999) reported the same result when they used price and return model and concluded that the value relevance of accounting information deteriorated due to the high fluctuation in the market. Dontoh *et al.*, (2004) argued that non-information based trading is the one of the factors which deteriorated the relationship of share price and accounting information. Subsequently, Gaston *et al.*, (2010) postulates that accounting standards reduce the association between share price and earnings per share and book value per share and the decline is due to enhancement of agency problem which is generated due to IFRS (Hung & Subramanaym, 2007). Likewise, Ahmed *et al.*, (2010) asserted that agency problem one of the causes of low quality information due to fewer guidelines provided in the IFRS.

Further, IFRS provides greater space to the mangers so they can report information in such a way, which preserve their self-interest. Collins *et al.,* (1997) found that incremental value of earning decrease with the passage of time, but there is an improvement in the accounting measure of book value per share. (Tendeloo & Vanstraelen, 2011) are of the view that IFRS do not compel a considerable limitation on earnings management as considered by discretionary accruals. Nevertheless, IFRS seems to enhance the size of discretionary accruals. Their results further indicate that low earning management and the adopter of IFRS cannot be associated. Further, it is suggested that quality standards adoption is not an enough condition to presenting high-quality information in code-law countries with relatively little investors' protection rights. (Tendeloo & Vanstraelen, 2011) are of the view that IFRS do not compel a considerable limitation on earnings management as considered by discretionary accruals. Nevertheless, IFRS seems to enhance the size of discretionary accruals. Their results further indicate that low earning management and the adopter of IFRS cannot be associated. Further, it is suggested that quality standards adoption is not an enough condition to present high-quality information in code-law countries with relatively little investors' protection rights. IFRS standards have some prerequisite to get the maximum output in terms of getting quality reports. These prerequisites are the portfolio of high investor protection; laws are strictly enforced, higher transparency, and active stock market. As Pakistan has a low transparency of reporting, the law is poorly enforced by the law enforcement agency. Further, there is no protection of small shareholders in the economy. Lack of these prerequisites will not allow IFRS to report relevant information in the financial reports. In addition, accountants are not fully aware of these new set of standards. Still, there is a gap existed between the standards and practices. In-spite of all, auditors are not well aware of the new international financial reporting standards. All these factors provide an opportunity to manipulate the earnings as well as book value per share and it lead to decline in the value relevance of accounting information in Pakistan. Both approaches used in the study, i.e., Ohlson price and product model asserted the relationship of share price to book value per share. The association, however, shows the declined in the value of R^2 after the reformed has been made in Pakistan. It means changes in accounting standard will get the earning quality poor and provide an upper hand to management to camouflage the information. Changes in the intensity of the price, which is associated with accounting number one of the major reasons for finding the decline trend in the value of $R.^2$

Conclusion

The aim of this study is to investigate the value relevance of accounting information following the IFRS implementation for the period of 2006–2010 in Pakistan financial market. Using sample of firms listed on the Karachi stock exchange, we document the following findings. For the overall sample, the response coefficients

of earnings per share and Book value are positive and statistically significant in the pool, fixed and random effect models. Comparatively, beta coefficient of book value is higher than the beta coefficient of earnings per share in the pooled effect model, fixed effect model and random effect model. Further, we document that, for the overall sample, book value (BV) is more value relevant than earning per share (EPS) following IFRS. For sub-sample on yearly basis using price and product model, value relevance of accounting information following the IFRS in 2006 has twisted decline trend after 2007. The possible reason for the declined-shape trend is because during that period Karachi stock exchange remained volatile due to many economic and political factors and particularly of speculative bubbles as it can be observed from the year basis results that after 2008, the earning per sharing has gained momentum. However, the momentum captured by the estimation is relatively less. This may indicate that accounting information may not be relevant in the volatile and bearish period. Further, we document the evidence of positive and statistically significant effect of earnings per share on share price. This study supports the initiative of sound regulatory environment, transparency of reporting, full disclosure, and enforcement of IFRS, since it will facilitate the transparent financial reporting system, which tends to be less based on rumors and speculations and more on real accounting figures in a country bearing both code and common law regulatory environment. Future studies are required to offer qualitative insights rather applying the conventional methodologies to cater the factors that affect the value relevance of accounting information following IFRS implementation. The perceptions of regulators, auditors and accountants needs to be captured concurrently, which may facilitate locating the difference among the stakeholders to level the accounting information harmonization to facilitate the cross-border investment and to protect the investor.

References

Acre, M., & A. Mora. (2002). Empirical Evidence of the Effect of European Accounting Differences on the stock market Valuation of Earnings and Book Value. *European Accounting Review,* 11(3), 573–599. http://dx.doi.org/10.1080/09638180220125616

Ashraf, J., & Ghani, W. (2005). Accounting Development in Pakistan. *The International Journal of Accounting*, 40(2), 175–201. http://dx.doi.org/10.1016/j.intacc.2005.01.010

Ahmed, A., Neel, M., & Wang, D. (2011). Does Mandatory Adoption of IFRS Improve Accounting Quality? Preliminary Evidence. *Contemporary Accounting Research* http://ssrn.com/abstract=1502909.

Byard, D., & Yu, Y. (2011). The effect of Mandatory IFRS adoption on financial analysts' information environment, *Journal of accounting research,* 49(1), 69–96. http://dx.doi.org/10.1111/j.1475-679X.2010.00390.x

Ball, R. (2001). Infrastructure Requirements for an Economically Efficient System of Public Financial Reporting and Disclosure, Brookings-Wharton Papers on Financial Services, 127–69.

Bae, K., & Welker, M. (2006). International GAAP Differences-The Impact on Foreign Analysts. *The Accounting Review*, 83(3), 593–628. http://dx.doi.org/10.2308/accr.2008.83.3.593

Barth, M. E., Landsman, W. R., & Lang, M. H. (2008). International Accounting Standards and Accounting Quality. *Journal of Accounting Research*, 46(3), 467–498. http://dx.doi.org/10.1111/j.1475-679X.2008.00287.x

Barth, M. E., Beaver, W. H., & Landsman, W. R. (2001). The Relevance of the Value Relevance Literature for Financial Accounting Standard Setting: Another View. *Journal of Accounting and Economics*, 31(1), 77–104. http://dx.doi.org/10.10 16/S0165-4101(01)00019-2

Baum, C. F., Schaffer, M. E., & Stillman, S. (2003). Instrumental Variables and GMM: Estimation and Testing. *The Stata Journal*, 3(1), 1-31.

Burgstahler, D. C., & Dichev, I. D. (1997). Earnings, Adaptation and Equity Value. *The Accounting Review*, 72(2), 187–215.

Beatty, R., Riffe, S., & Thompson, R., (1999). The Method of Comparables and tax Court Valuations of Private Firms: an Empirical Investigation. *Accounting Horizons*, 13(3), 177–200. http://dx.doi.org/10.2308/acch.1999.13.3.177

Callao, S., Ferrer, C., Jarne, J. I., & Lainez, J. A. (2010). IFRS Adoption in Spain and the United Kingdom: Effects on Accounting Numbers and Relevance. *Advances in Accounting, incorporating Advances in International Accounting*, (26), 304–313.

Chalmers, K., Navissi, F., & Qu, W. (2010). Value Relevance of Accounting Information in China Pre-and Post-2001 accounting reforms. *Managerial Auditing Journal*, 25(8), 792–813. http://dx.doi.org/10.1108/02686901011069551

Collins, D. W. Maydew. E. L., & Weiss, I. S. (1997). Changes in the Value-Relevance of Earnings and Book Values over the Past Forty Years. *Journal of Accounting and Economics*, 24(1), 39–67. http://dx.doi.org/10.1016/S0165-4101(97)00015-3

Capkun, V., Cazavan-Jeny, A., Jeanjean, T., & Weiss, L. (2008). Earnings Management and Value Relevance During the mandatory transition from local GAAPs to IFRS in Europe. http://ssrn.com/abstract=1125716.

Clarkson, P., Douglas Hanna, J., Richardson, G. D., & Thompson, R. (2011). The Impact of IFRS Adoption on the Value Relevance of Book Value and Earnings. *Journal of Contemporary Accounting and Economics*, 7(1), 1–17. http://dx.doi.org/10.1016/j.jcae.2011.03.001

Chen.C. J., Chen. S., & Su. X. (2001). Is Accounting Information Value Relevant in the Emerging Chinese Stock Market. *Journal of International Accounting Auditing and Taxation*, 10(1), 1–22. http://dx.doi.org/10.1016/S1061-9518 (01)00033-7

Chen, H., Tang, Jiang, Q. Y., & Lin, Z. (2010). The role of International Financial Reporting Standards in accounting quality: evidence from the European Union. *Journal of International Financial Management and Accounting*, 21(3), 220–278. http://dx.doi.org/10.1111/j.1467-646X.2010.01041.x

Chalmers, K., Clinch, G., & Godfrey, J. (2011). Changes in the Value Relevance of Accounting Information upon IFRS Adoption: Evidence from Australia. *Australian Journal of Management*, 36(2), 151–173. http://dx.doi.org/10.1177/ 0312896211404571

Christensen, H., Lee, E., & Walker, M. (2008). Incentives or Standards: What Determines Accounting Quality Changes Around IFRS Adoption? AAA 2008 Financial Accounting and Reporting Section FARS Paper. http://ssrn.com/abstract =1013054.

Drukker, D. M. (2003). Testing for Serial Correlation in Linear Panel-Data Models. *The Stata Journal*, 3(2), 168–177.

Devalle, A., Onali, E., & Magarini, R.(2010). Assessing the Value Relevance of Accounting Data after the Introduction of IFRS in Europe. *Journal of International Financial Management and Accounting*, 21(2), 85–119.

Dontoh, A., Radhakrishnan, S., & Ronen.J. (2004). The Decline in value relevance of accounting information and non-Information-Based Trading: A Noisy Rational Expectations Model Analysis,? Working Paper, Stern School of Business, New York University.

Ely, K., & Waymire, G. (1999). Accounting Standard-Setting Organizations and Earnings Relevance: Longitudinal Evidence From NYSE Common Stocks, 1927-93. *Journal of Accounting Research*, 37(2), 293–317. http://dx.doi.org/10. 2307/2491411

Ebaid, E. I. (2012). The Value Relevance of Accounting-Based Performance Measures in Emerging Economies: The Case of Egypt. *Management Research Review*, 35(1), 69-88. http://dx.doi.org/10.1108/01409171211190814

Francis, J., & Schipper, K. (1999). Have Financial Statements Lost their Relevance? *Journal of Accounting Research,* 37(2), 319–352. http://dx.doi.org/10.2307/2491412

Goodwin, J., Ahmed, K., & Heaney, R. (2008). The Effects of International Financial Reporting Standards on the Accounts and Accounting Quality of Australian Firms: A retrospective study, *Journal of Contemporary Accounting & Economics.* http://ssrn.com/abstract=1148520

Gjerde, U., Knivsfla, K., & Saettem, F. (2011). The Value Relevance of Financial Reporting in Norway 1965–2004. *Scandinavian Journal of Management*, 27(1), 113–128. http://dx.doi.org/10.1016/j.scaman.2010.08.001

Hand, J. R. M. (2003). The Value Relevance of Financial Statements in Private Equity Markets, Working Paper, University of North Carolina at Chapel.

Hausman, J. A. (1978). Specification Tests in Econometrics. *Econometrica. Journal of the Econometric Society*, 46, 1251–1271. http://dx.doi.org/10.2307/1913827

Hansen, F. (2003). International Standards Will Smooth Credit Management. Magazine article from *Business Credit*, 105(3).

Holthausen, R. W., & Watts, R. L. (2001). The Relevance of the Value-relevance Literature for Financial Accounting Standard Setting. *Journal of Accounting and Economics* 31 (1), 3–75. http://dx.doi.org/10.1016/S0165-4101(01)00029-5

Hung, M. (2001). Information and Trading Risks in Global Investing: An Empirical Analysis of Research Location and Pacific Rim Mutual Fund Performance. *Journal of International Financial Management & Accounting* 12 (1), 1–23. http://dx.doi.org/10.1111/1467-646X.00064

Hung, M., & Subramanyam, K. R. (2007). Financial Statement Effects of Adopting International Accounting Standards: The Case of Germany. *Review of Accounting Studies,* 12 (4), 623–657. http://dx.doi.org/10.1007/s11142-007-9049-9

Jermakowicz, E. K. (2004). Effects of adoption of International Financial Reporting Standards in Belgium: the Evidence from BEL-20 Companies. *Accounting in Europe,* 1(1), 51–70. http://dx.doi.org/10.1080/0963818042000270811

Kothari, S. P., & Zimmerman, J. L. (1995). Price and Return Models. *Journal of Accounting and economics,* 20(2), 155–192. http://dx.doi.org/10.1016/0165-4101(95)00399-4

Kvaal, E., & Nobes, C. (2010). International Differences in IFRS Policy Choice: a Research Note. *Accounting and Business Research*, 40(2), 173–187. http://dx.doi.org/10.1080/00014788.2010.9663390

Lev, B., & Zarowin, P. (1999). The Boundaries of Financial Reporting and How to Extend Them. *Journal of Accounting Research*, *37*(2), 353–385. http://dx.doi.org/10.2307/2491413

Lev, B. (1989). On the Usefulness of Earnings and Earnings Research: Lessons and Directions From two Decades of Empirical research. *Journal of Accounting Research*, 27, 153–192. http://dx.doi.org/10.2307/2491070

Ohlson, J. A. (1995). Earnings, Book Values, and Dividends in Equity Valuation, *Contemporary accounting research*, *11*(2), 661–687. http://dx.doi.org/10.1111/j.1911-3846.1995.tb00461.x

Ohlson, J. A. (2009). Accounting Data and Value: The Basic Results, *Contemporary Accounting Research*, *26*(1), 231–259. http://dx.doi.org/10.1506/car.26.1.8

Ou, J., & Penman, S. (1989). Accounting Measurement, Price-Earnings Ratio, and the Information Content of Security Prices. *Journal of Accounting Research*, 27, 111–144. http://dx.doi.org/10.2307/2491068

Wulandari, R. E., & Rahman, R. A. (2004). Accounting Institutional Environment and The value Relevance of Accounting Earning, Working paper, NTU.

Stergios, A., Athanasios, V., & Nikolaos, D. (2005). Financial Statement Effects of Adopting International Accounting Standards: the Case of Greece. Working paper. University of Macedonia.

Soderstrom, N. S., & Sun, K. J. (2007). IFRS Adoption and Accounting Quality: A review. *European Accounting Review*, *16*(4), 675–702. http://dx.doi.org/10.1080/09638180701706732

Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, Massachusetts: The MIT Press.

Wooldridge, J. M. (2001). *Econometric Analysis of Cross Section and Panel Data*, (USA, MIT press).

Wallace, W. (2000). The Value Relevance of Accounting: The Rest of the Story. *European Management Journal,* 18, 675–682. http://dx.doi.org/10.1016/S0263-2373(00)00058-X

Van Tendeloo, B., & Vanstraelen, A. (2005). Earnings Management under German GAAP versus IFRS, *European Accounting Review*, *14*(1), 155–180. http://dx.doi.org/10.1080/0963818042000338988

Young, S. D., & O'Byrne, S. (2001). *EVA and Value Based Management: a Practical Guide to Implementation*, NewYork, McGraw-Hill.

The article has been reviewed.