

PRE-AND POST-IFRSs ADOPTION EFFECTS ON MARKET RISK IN NIGERIAN LISTED COMPANIES

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Abstract

This study assessed pre-and post-IFRSs adoption effect on market risk of companies listed on the NSE. The study covered a population of one hundred and sixty-eight (168) companies listed as at 31st December, 2020. The study collected data from the annual reports and accounts of a sampled size of fifty-six (56) companies listed on the NSE between 2003 and 2020 (i.e., 2003 to 2011 for pre-IFRSs and 2011 to 2020 is post-IFRSs adoption era). Ordinary least square regression analysis technique was employed to analyse the data and the result revealed that the post-IFRSs adoption era had no significant effect on market risk proxied as BTMV, GR and DFL compared to the pre-IFRSs adoption era. In addition, it was revealed that the control variable (firm size) had positive significant effect on market risk in companies listed on the NSE in the post-IFRSs adoption era than the pre-IFRSs adoption era. The study concludes that the adoption of IFRSs by companies listed on the NSE has no significant effect on market risk compared to pre-IFRSs adoption era. However, it reduced BTMR, and increased GR and DFL. It is therefore recommended to the directors of the companies listed on the NSE to utilize key areas of the IFRSs specifically where the standard allows estimate and judgment on business transactions that will help them reduce market risk to increase value of the company, reduce financial distress and volatile earnings of the company.

Keywords: *Decision usefulness theory; Market risk; Nigerian listed companies; Pre- and Post-IFRSs adoption*

Introduction

International Financial Reporting Standards (IFRSs) became a globally accepted accounting standard because it is standard designed to minimise the loopholes observed in the nations' Generally Accepted Accounting Principles (GAAPs), and enhance free trade and investment between countries across borders. For nations to have a typical and tantamount accounting report across national limits that will translate to national financial development is the significant point of IFRSs. To foster the harmonization of accounting and financial reporting that have to be done by every country including Nigeria as the widely used accounting information according Okoughenu, Evbota and Amughoro (2019) formed the cardinal-point of why International Accounting Standard Board (IASB) issued IFRSs. Basically, IFRSs focused on current cost accounting as alternative to historical cost accounting which is characterized by a lot of weaknesses particularly not reflecting the economic reality about the business entity's transactions during the period.

The financial statements reflecting the economic reality about the business entity's transactions is paramount when assessing risk particularly, the market risk which is one of the financial risks is caused according to Ogbeiwi and Okoughenu (2020) by economic recessions, changes in interest rates, exchange rate fluctuation and inflation. Market risk formed one of the key components of financial risk; hence its study is significant because according to Yousfi (2014), it explains the potential impact of adverse price movements such as equity prices on the economic value of an asset. Addition, market risk can be divided into interest rate risks and exchange rate risks including gold, share price volatility risks, rate of returns risks, benchmark risks and commodity price risks and by nature, it can be hedged according to (Santomero, 1997) but cannot be diversified away completely. Some studies according to Kassi, Rathnayake, Louembe and Ding (2019) used various alternative measures of market risk and these include Book-To-Market (BTM), Gearing Ratio (GR) and Degree of Financial Leverage (DFL). In fact, all of these measurements have been examined under the national-based standards (i.e., GAAPs) that relied on the historical accounting based model.

However, there has been a focus of IFRSs on fair value accounting which may lead to increased earnings volatility and consequently affect market risk. According to Silva, Fraga, Noriller and Lopes (2019), since IFRSs represents a standardized, high-quality and transparent set of accounting standards capable of neutralizing accounting differences among jurisdictions, it would lead to high quality earnings and have a better predictability of future business transactions. Also, Rizki and Rosyidiana (2017) and Nwaogwugwu (2020) asserted that it was ambiguous that IFRSs adoption would increase the financial statement information decision usefulness than the historical based accounting measurement. Therefore, it is imperative to use other variables like market risk to examine the pre and post IFRSs era to justify the prior research evidence. Against this backdrop this study seeks to address the following question: to what extent pre-and post-IFRSs adoption has affected market risk (i.e., proxies as DTB, GR and DFL) of companies listed on the Nigerian Stock Exchange (NSE)?

This study generally aims to examined pre-and post- IFRSs adoption effect on market risk of companies listed on the NSE. The specific objectives are to: (i) investigate whether DTB under the post-IFRSs adoption era show higher significant effect than the pre-IFRSs adoption era by companies listed on the NSE, (ii) assess whether GR under the post-IFRSs adoption era show higher significant effect than the pre-IFRSs adoption era by companies listed on the NSE, and (iii) evaluate whether DFL under the post-IFRSs adoption era show higher significant effect than the pre-IFRSs adoption era by companies listed on the NSE.

To achieve these specific objectives therefore, the following hypotheses are formulated in null form for the study:

H0₁: DTB under the post-IFRSs adoption era show no higher significant effect than the pre-IFRSs adoption era by companies listed on the NSE.

H0₂: GR under the post-IFRSs adoption era show no higher significant effect than the pre-IFRSs adoption era by companies listed on the NSE.

H0₃: DFL under the post-IFRSs adoption era show no higher significant effect than the pre-IFRSs adoption era by companies listed on the NSE.

Following the section one of this study, the reminder of the sections are section two which is the literature review, section three is methodology, section four presents the analysis of data and discussion of results and section five brings out the conclusion and recommendations for the study.

Literature Review

This section provides conceptual review on the variables, that is, independent variable (IFRSs) and dependent variable (market risk), theoretical review indicating the theory the study underpinned, and empirical review that will help the study to unveil the gap in prior studies.

Conceptual Review

International Financial Reporting Standards: These are issued by IASB which is situated in London, United Kingdom. IASB articulates uniform financial reporting principles that bridged the gap between national standards. IFRSs according to Eke (2018) are more focused on objectives and principle-based, and it purports to be a set of rules that ideally would apply equally to financial reporting by public interest companies worldwide. Gaining from the seemingly distressed global economy Nwaogwugwu (2020) asserted that Nigeria joined other countries and adopted and started implementation of IFRSs in 2012. To facilitate compliance of the standards, the Financial Reporting Council of Nigeria (FRCN) mandated all publicly listed companies to prepare their financial statements in line with the IFRSs.

Therefore, IFRSs since it aimed to shift from historical accounting based-measurement to currents accounting and characterized with both rule-based and principle-based standards, unlike the GAAPs that permit choice of accounting measurement and estimate. It may give more value relevance data as well as enhancing market risk. In the same way, Barth et al. (2008) in Viana, Ohlson, Lourenço, and DeLima (2018) asserted that IFRSs are recognized with the potential to improve the quality of accounting information, because, among other factors, are recognized as principle-based rules, and may, therefore, better reflect the company's financial position.

Market Risk: The definitions of market risk according to Okeke, Aganoke and Onuorah (2018) are relatively clear. Thus, Yousfi (2014) referred market risk as one of the critical components of financial risk that explains the potential impact of adverse price movements such as equity prices on the economic value of an asset. Market risk arises according to Yousfi (2014) due to a number of factors and they are known as 'rate of return risk, benchmark risk, price volatility risk, and many others.

Kassi et al. (2019) asserted that various alternative measures of market risk have been utilised by some studies which includes BTMR, GR and DFL. BTMR compares a company's book value to its market value. The interpretation of the result of the ratio is that if the result is greater than one, it implies that the company's value is low but if it is less than one, it implies that the company's value is high (Donnelly, 2014). GR according to Linsley and Shrives (2006) is one of the indicators that measure financial risk. Thus, it is an indicator of financial leverage that explains how equity or debt financing utilized by the company's operations. The ratio compares the amount of fund provided by outsiders to owner's equity. The interpretation of the result of the ratio is that if it is greater than one, it implies that the company's borrowed fund is utilized by the company than owners' equity but if it is less than one, it implies that the owners' equity are more utilized than borrowed fund by the company during the financial activities. The rate of changes in the earnings per share for a unit change in the earnings before interest and taxes is determined by degree of financial leverage (DFL). Thus, according to Muriithi, Muturi and Waweru (2016), the higher the ratio is the more risky the business is considered to be as it relies too much on debts and any changes within the economic environment or in interest rates may have an extremely negative impact on how the business evolves.

Theoretical Review

A lot of theories have been indicated in accounting literature to explain the effects of IFRSs on business activities and these include agency theory, signaling theory and decision usefulness theory. But, this study anchored on the decision usefulness theory because many extant literatures, for example, Odia and Eriabie (2015) have used it to explain how quality financial statements provided by IFRSs can assist management to evaluate business transactions thus enhancing market risk.

Decision usefulness theory argued according to Glautier and Underdown (2001) that quality information disclosure in the financial statements would assist the users of financial statements such as management, investors and other stakeholders to forecast and assess business activities which include firm's performance. IFRSs issued by IASB aims to provide high quality standard characterize with relevance, understandability, objectivity, reliability and comparability which are translate to quality accounting information. Apart from the convergence project of the IASB, Financial Accounting Standards Board (FASB) according to Crawford and Power (2012) adopted the decision usefulness in their joint framework. In addition, according to Nwaogwugwu (2020), IFRSs adoption with execution of fair value model prompts the company's qualities that are nearer to intrinsic value in terms of assets valuation, aiming to give financial specialists more value relevance to accounting data. In line with this, accounting data under IFRSs adoption era is more worth relevance than under the pre-IFRSs adoption era. Thus, the decision usefulness theory predicts post-IFRSs adoption era to have higher significant effect on market risk than the pre-IFRSs adoption era.

Empirical Review

Ibiamke and Ateboh-Briggs (2014) used financial performance ratio under the post-IFRSs adoption era in Nigeria to examine the efficacy of the IFRSs adoption. The study adopted paired sample statistics techniques and the result indicated that the post-IFRS adoption has a negative effect on financial ratio of firms quoted on the Nigerian Stock Exchange (NSE).

The impact of IFRs on value relevance was investigated by Onipe, Onyabe and Usman (2015). The study focused on the key financial related indicators. The study employed regression analysis technique to indicate that the post-IFRSs adoption era has a critical positive effect on value relevance of accounting data.

Performance of eight (8) oil and gas oil and gas marketing firms in Nigeria and how it was affected by IFRS was studied by Abdullahi, Abubakar and Ahmad (2017). The study used profit margin, return on assets and return on equity ratios to represent performance and IFRS was represented by a free factor (dummy). In addition, the study used current ratio, snappy test, total debt ratio, earnings per share, and equity debt ratio as control variables. The study arranged the periods' observation under pre-IFRSs era 2010 to 2011 and post-IFRS adoption era 2012 to 2013. The used ordinary least square regression technique to analysed the data and the result indicated that under the post-IFRS adoption era, performance has not been significantly enhanced compared to the pre-IFRSs adoption era in oil and gas marketing firms in Nigeria.

Accounting information and its relevance under the pre (i.e., 2008-2011)-and post (i.e., 2012-2015)-IFRS adoption was examined by Erin, Olojede and Ogundele (2017) and covered sample of fifty-two (52) quoted firms in Nigeria. The study used ordinary least square regression techniques to analysed data and the result indicated that under the post-IFRS adoption era in Nigeria, earning, book value and net income has significantly enhanced than the pre-IFRSs era, thus implying that value relevance of accounting data is more detected in Nigeria.

Eleven (11) quoted banks were used by Eriki, Modebe, Okoye and Erin (2017) to assess the impact of IFRSs adoption on key financial ratios by comparing the pre (i.e., 2009-2011)-and post (2013-2015)- IFRSs adoption. The study employed the Mann Whitney U-Test to test the data and reveals that; under pre-IFRSs adoption profitability ratios of the sampled quoted banks vary significantly from those under the post-IFRS adoption era, there was a significant contrast between short-term solvency ratios under the pre-IFRSs adoption era and post-IFRSs adoption era, long-term solvency ratios under pre-IFRSs adoption were significantly different from those under the post-IFRS era, and there was a significant difference between investment ratios of under the pre-IFRSs adoption era and post-IFRSs adoption.

Twenty-three (23) banks listed in the Indonesian capital market between the period 2007 and 2012 was used by Ramli (2018) to examine the impact the financial summaries has on the offer prices. The study used book value, the net income, and the operating cash flow to represent the accounting data and test the impact of these variables on share prices. Also, the study tested how much the IFRSs adoption has enhanced the nature of the accounting data and its significance to the price of share sampled banks. The study revealed that the IFRSs adoption enhanced the quality of the accounting information of the banks studied. In addition, the study reveals that the book value data exert more significant impact on the share prices. But, it was found by the study that the book value did not significantly impact on the share price under the pre-IFRSs adoption era, while the overall net income and the operating cash flow did not significantly impact on the share price.

A sample of five (5) banks for eight (8) years observation ranged post-IFRS from 2012 to 2015 and pre-IFRS period from 2008 to 2011 were used by Nwaogwugwu (2020) to examine the effect of IFRS adoption on the financial performance and value of the listed banks in Nigeria. The study introduced return on asset, return on equity and earnings per share and IFRS dummy variable as the independent variables into the model. The result of the regression fixed model in the study indicated that the adoption of IFRS in Nigeria has not lead to higher performance and increased value.

Share price anticipation of earnings (SPAЕ) was investigated by Lee, Walker and Zeng (2020) in China under IFRSs adoption. The study exploited the institutional setting in China, which allows it to identify first time adoption of IFRS in 2007 as a treatment group and post-IFRS adoption as a control group. From the analyses in the study, it was revealed that SPAЕ improved under the first time adoption of IFRS in 2007 relative to post-IFRS adoption era, thus consistent with the improved transparency making it easier for investors to forecast future earnings.

In Ghana, pre (2001 to 2006)-and post (2007 to 2014)-IFRS adoption was examined by Mensah (2020) and the study examined how it has affected the FRQ of listed manufacturing firms. The study employed ordinary least squares regression techniques to analyse the data sourced from the audited annual reports of eleven (11) manufacturing firms. The fixed effect model revealed in the study a decrease in earnings management in the post-adoption era as against the pre-adoption era, thus implying an improvement in accounting quality after the adoption of IFRS.

Methodology

Ex-post facto research design is adopted by the study to examine pre-and post-IFRS and shareholders' value creation in Nigerian listed companies. The study obtained data through secondary sources and one hundred and sixty-eight (168) companies listed on the NSE as at 31st December, 2020 formed the population of this study. In addition, the firm in the population had annual reports and accounts for consecutive years for the period between 2003 and 2020 (i.e.,

2003 to 2011 for pre-IFRSs and 2011 to 2020 is post-IFRSs adoption era). The study adopted Ewododhe (2011)'s formula to arrive at a samples size of fifty-six (56) companies listed on the NSE. Similar to prior studies, for instance, the study of Erin et al. (2017) who used ordinary least square regression technique to analysed data collected across firms over time (panel data). Thus, this study employs ordinary least square regression technique to test the effect of pre and post-IFRSs era on market risk.

According to Brooks (2008), a model may be specified to one with k regresses (independent variables) as followed:

$$Y_i = \beta_0 + \beta_1 x_{1i} + \beta_2 x_{2i} + \dots + \beta_k x_{ki} + \epsilon_i, i = (1, 2, \dots, n)$$

So, where Y_i is the i th observation of the dependent variable, $X_{1i}, \dots, X_{ki}$ are the i th observation of the independent variables, $\beta_1, \dots, \beta_k$ are the regression coefficients, ϵ_i is the i th observation of the stochastic error term.

Thus, to examine pre-and post-IFRSs adoption effect on market risk of companies listed on the NSE, the study estimates a linear regression model in the subsequent formula as follows:

Model 1 Pre-IFRSs Adoption Era

$$BTMR_{it} = \beta_0 + \beta_1 DUMV_{it} + \beta_2 FS_{it} + \mu_t \dots\dots\dots 1$$

$$GR_{it} = \beta_0 + \beta_1 DUMV_{it} + \beta_2 FS_{it} + \mu_t \dots\dots\dots 2$$

$$DFL_{it} = \beta_0 + \beta_1 DUMV_{it} + \beta_2 FS_{it} + \mu_t \dots\dots\dots 3$$

Model 2 Post-IFRSs Adoption Era

$$BTMR_{it} = \beta_0 + \beta_1 DUMV_{it} + \beta_2 FS_{it} + \mu_t \dots\dots\dots 4$$

$$GR_{it} = \beta_0 + \beta_1 DUMV_{it} + \beta_2 FS_{it} + \mu_t \dots\dots\dots 5$$

$$DFL_{it} = \beta_0 + \beta_1 DUMV_{it} + \beta_2 FS_{it} + \mu_t \dots\dots\dots 6$$

The equations above are regression models specified to demonstrate the effect of pre-and post-IFRSs adoption era (proxies by DUMV, represent a dummy variable, 0 for pre-IFRSs adoption era and 1 for post-IFRSs adoption era) on market risk (i.e., proxies BTMR, GR and DFL). Where; market value divided book value represents *BTMR*, total debt capital divided by equity capital represented by *GR*, and earnings before interest and taxes divided earnings before taxes (EBIT—Interest expenses) represent by *DFL*. It is cross-sectional (i) at time (t), β_0 is constant term, β_1, β_2 are the coefficients of the independent variables, μ_t is error term at time t in each model that is assumed to follow a normal distribution. Accept the H_1 , if the p-value of the test is less than 0.05. Otherwise accept H_0 .

Data Analysis and Discussion of Findings

This section provides analysis of data and discussion of findings on the effect of pre-and post IFRSs on market risk.

Data Analysis

Table 1 OLS Regression Result for Model 1 on BTMR

Variables	Pred. Sign	POLS Estimate			Fixed Effect Estimate (FEE)			Random Effect Estimate (REE)		
		Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		0.43	0.22	0.00*	0.28	0.20	0.04*	0.21	0.38	0.00*
DUMV	+	-0.06	-0.37	0.09	0.16	0.32	0.12	0.07	0.14	0.01*
FS	+	-0.33	-0.19	0.11	0.24	0.57	0.00*	-0.51	-0.24	0.03*
R-Sq.		0.66			0.68			0.65		
Adj R-sq.		0.23			0.26			0.18		
F-stat.		27.07			22.05			25.03		
Prob.		0.03			0.00			0.00		
Durbin-Watson stat.		1.51			1.73			1.92		

Source: Authors' computation (2022).

Note: *p < 0.05.

The outcome of Table 1 of *POLS estimate* showed that pre-IFRSs adoption era (*DUMV*) exerts negative insignificant effect on *BTMR* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts negative insignificant effect on *BTMR* (i.e., not significant at the 5% level). The outcome of *FEE* showed that pre-IFRSs adoption era exerts positive insignificant effect on *BTMR* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts positive and significant effect on *BTMR* (i.e., significant at the 5% level). The outcome of *REE* showed that pre-IFRSs adoption era exerts positive significant effect on *BTMR* (i.e., significant at the 5% level), while the control variable (*FS*) exerts negative significant effect on *BTMR* (i.e., significant at the 5% level).

Examining the coefficient of determination (R^2) the estimated model shows that 66%, 68% and 65% respectively of the dependent variable, that is, changes in the *BTMR* of companies listed on the NSE is explained by the variables of the main model. That is, 66%, 68% and 65% respectively of the changes in *BTMR* are justified by the fitted model and the rest of the changes are under factors outside the model (34%, 32%, 35%). The F-statistics = 27.07, 22.05, 25.03 respectively and they are significant (sig<0.01) at the level of significance of 1% suggesting that the Pre-IFRS era has a significant effect on *BTMR* of the companies under review. Since the outcome of *Durbin-Watson statistic* is between 1.5 to 2.5 according to Hasan, Jalod and Hussain (2020) and Mundfrom, Smith and Kay (2018), it means no self-correlation. Therefore, it can be concluded that the errors are independent of each other and a regression model can be used to test the hypotheses.

Table 2 OLS Regression Result for Model 1 on GR

Variables	Pred. Sign	POLS Estimate			Fixed Effect Estimate (FEE)			Random Effect Estimate (REE)		
		Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		-0.17	-0.22	0.00*	0.01	0.20	0.22	-0.02	-0.19	0.00*
DUMV	+	-0.01	-0.04	0.11	-0.09	-0.11	0.14	0.13	0.22	0.00*
FS	+	0.23	0.19	0.00*	0.57	0.13	0.00*	0.44	0.25	0.00*
R-Sq.		0.69			0.72			0.71		
Adj R-sq.		0.22			0.20			0.23		
F-stat.		23.01			24.00			26.15		
Prob.		0.00			0.00			0.00		
Durbin-Watson stat.		1.52			1.69			1.71		

Source: Authors' computation (2022).

Note: *p < 0.05.

The outcome of Table 2 of *POLS estimate* showed that pre-IFRSs adoption era (*DUMV*) exerts negative insignificant effect on *GR* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts positive significant effect on *GR* (i.e., significant at the 5% level). The outcome of *FEE* showed that pre-IFRSs adoption era exerts negative insignificant effect on *GR* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts positive significant effect on *GR* (i.e., significant at the 5% level). The outcome of *REE* showed that pre-IFRSs adoption era exerts positive significant effect on *GR* (i.e., significant at the 5% level), while the control variable (*FS*) exerts positive significant effect on *GR* (i.e., significant at the 5% level).

Examining the coefficient of determination (R^2) the estimated model shows that 69%, 72% and 71% respectively of the dependent variable, that is, changes in the *GR* of companies listed on the NSE is explained by the variables of the main model. That is, 69%, 72% and 71% respectively of the changes in *GR* are justified by the fitted model and the rest of the changes are under factors outside the model (31%, 28%, 29%). The F-statistics = 23.01, 24.00, 26.15 respectively and they are significant ($\text{sig} \leq 0.01$) at the level of significance of 1% suggesting that the Pre-IFRS era has a significant effect on *GR* of the companies under review. Since the outcome of *Durbin-Watson statistic* is between 1.5 to 2.5 according to Hasan, Jalod and Hussain (2020) and Mundfrom, Smith and Kay (2018), it means no self-correlation. Therefore, it can be concluded that the errors are independent of each other and a regression model can be used to test the hypotheses.

Table 3 OLS Regression Result for Model 1 on DFL

Variables	Pred. Sign	POLS Estimate			Fixed Effect Estimate (FEE)			Random Effect Estimate (REE)		
		Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		-0.13	-0.26	0.13	0.23	0.27	0.01*	0.01	0.16	0.00*
DUMV	+	-0.05	-0.15	0.00*	-0.10	-0.21	0.04*	-0.05	-0.23	0.14
FS	+	-0.24	-0.13	0.19	-0.19	-0.33	0.09	-0.10	-0.13	0.18
R-Sq.		0.77			0.76			0.74		
Adj R-sq.		0.21			0.33			0.29		
F-stat.		23.10			24.11			26.60		
Prob.		0.00			0.00			0.00		
Durbin-Watson stat.		2.01			1.88			1.99		

Source: Authors' computation (2022).

Note: *p < 0.05.

The outcome of Table 3 of *POLS estimate* showed that pre-IFRSs adoption era (*DUMV*) exerts negative significant effect on *DFL* (i.e., significant at the 5% level), while the control variable (*FS*) exerts negative insignificant effect on *DFL* (i.e., not significant at the 5% level). The outcome of *FEE* showed that pre-IFRSs adoption era exerts negative significant effect on *DFL* (i.e., significant at the 5% level), while the control variable (*FS*) exerts negative insignificant effect on *DFL* (i.e., not significant at the 5% level). The outcome of *REE* showed that pre-IFRSs adoption era exerts negative insignificant effect on *DFL*, while the control variable (*FS*) exerts negative insignificant effect on *DFL* (i.e., both were not significant at the 5% level).

Examining the coefficient of determination (R^2) the estimated model shows that 77%, 76% and 74% respectively of the dependent variable, that is, changes in the *DFL* of companies listed on the NSE is explained by the variables of the main model. That is, 77%, 76% and 74% respectively of the changes in *DFL* are justified by the fitted model and the rest of the changes are under factors outside the model (23%, 24%, 26%). The F-statistics = 23.10, 24.11, 26.60 respectively and they are significant ($\text{sig} \leq 0.01$) at the level of significance of 1% suggesting that the Pre-IFRS era has a significant effect on *DFL* of the companies under review. Since the outcome of *Durbin-Watson statistic* is between 1.5 to 2.5 according to Hasan, Jalod and Hussain (2020) and Mundfrom, Smith and Kay (2018), it means no self-correlation. Therefore, it can be concluded that the errors are independent of each other and a regression model can be used to test the hypotheses.

Since the series for this study is cross sectional, *POLS estimation* will not be considered appropriate to interpret the outcome of this study because it assumed all firms are the same and denied them of their heterogeneity or individuality effects. Therefore *FEE* and *REE* which does not denied the firms heterogeneity or individuality effects would be used to interpret the outcome of this study.

Therefore, we conclude that there is no justification to interpret the results of the data analysed for the study on the basis of *POLS estimation* result.

Furthermore, either of the two models of *FEE* or *REE* would be considered for the interpretation of the regression result for the study on the assumption that if the outcome of the *Hausman Test* provide probability value less than 0.05, *FEE* result will be accepted or otherwise accept the *REE* result for the study.

Table 4 Summary Result of Hausman Test for the Models

Variables	Chi-sq. stat.	Prob.
BTMR	35.22	0.18
GR	35.25	0.12
DFL	35.45	0.01

Source: Authors' computation (2022).

Table 4 indicates that the *Hausman Test* provided a probability value greater than 0.05 on model 1 and 2, while model 3 probability value less than 0.05, thus, implying that model 1 and 2 was appropriately interpreted on the basis of the *REE*, while model 3 was appropriately interpreted on the basis of the *FEE* for the study.

Table 5 OLS Regression Result for Model 2 on BTMR

Variables	Pred. Sign	POLS Estimate			Fixed Effect Estimate (FEE)			Random Effect Estimate (REE)		
		Coef	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		0.03	0.11	0.01*	0.03	0.15	0.00*	-0.01	-0.23	0.00*
DUMV	+	-0.04	-0.02	0.12	0.07	0.21	0.10	-0.04	-0.13	0.08
FS	+	0.27	0.17	0.08	0.33	0.19	0.00*	0.21	0.29	0.00*
R-Sq.		0.78			0.73			0.75		
Adj R-sq.		0.15			0.14			0.10		
F-stat.		25.00			26.15			24.22		
Prob.		0.00			0.00			0.00		
Durbin-Watson stat.		2.00			1.88			1.61		

Source: Authors' computation (2022).

Note: *p < 0.05.

The outcome of Table 5 of *POLS estimate* showed that post-IFRSs adoption era (*DUMV*) exerts negative insignificant effect on *BTMR* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts negative insignificant effect on *BTMR* (i.e., not significant at the 5% level). The outcome of *FEE* showed that post-IFRSs adoption era exerts positive insignificant effect on *BTMR* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts positive and significant effect on *BTMR* (i.e., significant at the 5% level). The outcome of *REE* showed that post-IFRSs adoption era exerts positive insignificant effect on *BTMR* (i.e., not significant at the 5% level),

while the control variable (*FS*) exerts positive significant effect on *BTMR* (i.e., significant at the 5% level).

Examining the coefficient of determination (R^2) the estimated model shows that 78%, 73% and 75% respectively of the dependent variable, that is, changes in the *BTMR* of companies listed on the NSE is explained by the variables of the main model. That is, 78%, 73% and 75% respectively of the changes in *BTMR* are justified by the fitted model and the rest of the changes are under factors outside the model (22%, 27%, 25%). The F-statistics = 25.00, 26.15, 24.22 respectively and they are significant ($\text{sig} \leq 0.01$) at the level of significance of 1% suggesting that the Post-IFRS era has a significant effect on *BTMR* of the companies under review. Since the outcome of *Durbin-Watson statistic* is between 1.5 to 2.5 according to Hasan, Jalod and Hussain (2020) and Mundfrom, Smith and Kay (2018), it means no self-correlation. Therefore, it can be concluded that the errors are independent of each other and a regression model can be used to test the hypotheses.

Table 6 OLS Regression Result for Model 2 on GR

Variables	Pred. Sign	POLS Estimate			Fixed Effect Estimate (FEE)			Random Effect Estimate (REE)		
		Coef	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		0.22	0.32	0.00*	0.15	0.29	0.00*	0.19	0.32	0.00*
DUMV	+	0.05	0.09	0.13	0.03	0.08	0.07	0.07	0.02	0.19
FS	+	-0.14	-0.26	0.08	0.37	0.16	0.00*	0.29	0.17	0.00*
R-Sq.		0.66			0.67			0.62		
Adj R-sq.		0.11			0.13			0.10		
F-stat.		25.01			25.00			25.10		
Prob.		0.00			0.00			0.00		
Durbin-Watson stat.		1.55			1.61			1.59		

Source: Authors' computation (2022).

Note: * $p < 0.05$.

The outcome of Table 6 of *POLS estimate* showed that post-IFRSs adoption era (*DUMV*) exerts positive insignificant effect on *GR* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts negative insignificant effect on *GR* (i.e., not significant at the 5% level). The outcome of *FEE* showed that post-IFRSs adoption era exerts positive insignificant effect on *GR* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts positive significant effect on *GR* (i.e., significant at the 5% level). The outcome of *REE* showed that post-IFRSs adoption era exerts positive insignificant effect on *GR* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts positive significant effect on *GR* (i.e., significant at the 5% level).

Examining the coefficient of determination (R^2) the estimated model shows that 66%, 67% and 62% respectively of the dependent variable, that is, changes in the *GR* of companies listed on the NSE is explained by the variables of the main model. That is, 66%, 67% and 62% respectively of

the changes in *GR* are justified by the fitted model and the rest of the changes are under factors outside the model (34%, 33%, 38%). The F-statistics = 25.01, 25.00, 25.10 respectively and they are significant ($\text{sig} \leq 0.01$) at the level of significance of 1% suggesting that the Post-IFRS era has a significant effect on *GR* of the companies under review. Since the outcome of *Durbin-Watson statistic* is between 1.5 to 2.5 according to Hasan, Jalod and Hussain (2020) and Mundfrom, Smith and Kay (2018), it means no self-correlation. Therefore, it can be concluded that the errors are independent of each other and a regression model can be used to test the hypotheses.

Table 7 OLS Regression Result for Model 2 on DFL

Variables	Pred. Sign	POLS Estimate			Fixed Effect Estimate (FEE)			Random Effect Estimate (REE)		
		Coef	t-stat.	Prob.	Coef.	t-stat.	Prob.	Coef.	t-stat.	Prob.
C.		0.29	0.21	0.07	0.33	0.21	0.00*	0.13	0.22	0.00*
DUMV	+	0.06	0.12	0.11	0.19	0.22	0.15	0.17	0.21	0.09
FS	+	0.21	0.33	0.00*	-0.29	-0.42	0.00*	-0.15	-0.20	0.00*
R-Sq.		0.69			0.68			0.64		
Adj R-sq.		0.19			0.33			0.29		
F-stat.		21.00			24.11			26.60		
Prob.		0.00			0.00			0.00		
Durbin-Watson stat.		1.91			1.88			1.99		

Source: Authors' computation (2022).

Note: *p < 0.05.

The outcome of Table 7 of *POLS estimate* showed that post-IFRSs adoption era (*DUMV*) exerts positive insignificant effect on *DFL* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts positive insignificant effect on *DFL* (i.e., significant at the 5% level). The outcome of *FEE* showed that post-IFRSs adoption era exerts positive insignificant effect on *DFL* (i.e., significant at the 5% level), while the control variable (*FS*) exerts negative significant effect on *DFL* (i.e., significant at the 5% level). The outcome of *REE* showed that post-IFRSs adoption era exerts positive insignificant effect on *DFL* (i.e., not significant at the 5% level), while the control variable (*FS*) exerts negative significant effect on *DFL* (i.e., significant at the 5% level).

Examining the coefficient of determination (R^2) the estimated model shows that 69%, 68% and 64% respectively of the dependent variable, that is, changes in the *DFL* of companies listed on the NSE is explained by the variables of the main model. That is, 69%, 68% and 64% respectively of the changes in *DFL* are justified by the fitted model and the rest of the changes are under factors outside the model (31%, 32%, 36%). The F-statistics = 21.00, 24.11, 26.60 respectively and they are significant ($\text{sig} \leq 0.01$) at the level of significance of 1% suggesting that the Post-IFRS era has a significant effect on *GR* of the companies under review. Since the outcome of *Durbin-Watson statistic* is between 1.5 to 2.5 according to Hasan, Jalod and Hussain (2020) and Mundfrom, Smith and Kay (2018), it means no self-correlation. Therefore, it can be concluded that the errors are independent of each other and a regression model can be used to test the hypotheses.

Since the series for this study is cross sectional, *POLS* model will not be considered appropriate to interpret the outcome of this study because it assumed all firms are the same and denied them of their heterogeneity or individuality effects. Therefore *FEE* and *REE* which does not denied the firms heterogeneity or individuality effects would be used to interpret the outcome of this study.

Therefore, we conclude that there is no justification to interpret the results of the data analysed for the study on the basis of *POLS estimation* result.

Furthermore, either of the two models of *FEE* or *REE* would be considered for the interpretation of the regression result for the study on the assumption that if the outcome of the *Hausman Test* provide probability value less than 0.05, *FEE* result will be accepted or otherwise accept the *REE* result for the study.

Table 8 Summary Result of Hausman Test for the Models

Variable	Chi-sq. stat.	Prob.
BTMR	21.02	0.09
GR	21.24	0.12
DFL	21.19	0.22

Source: Authors' computation (2022).

Table 8 indicates that the *Hausman Test* provided a probability value greater than 0.05 on the three (3) models implying that *REE* appropriately interpreted for the study.

Discussion of Findings

Comparing the outcome of the two (2) models specified in the study, it showed that there is different between the pre-and post-IFRSs adoption era effect on market risk (proxies by BTMR). But the pre-IFRSs exerts positive significant effect on BTMR (i.e., coef. val = 0.07, t-value = 0.14) while post-IFRSs exerts negative insignificant effect on BTMR (i.e., coef. val = -0.04, t-value = -0.13). This means that the post-IFRSs era has not significantly increase BTMR. The implication of this result is that investors are willing to pay more for a company than its net assets, thus reducing the value of the company. This result is consistent with the study of Abdullahi, Abubakar and Ahmad (2017) but not consistent with Ramli (2018) who found that post-IFRSs enhance book value of banks.

In addition, it was revealed in the comparison between the specified models in the study that the pre-IFRSs exerts positive significant effect on market risk proxies by GR (i.e., coef. val = 0.13, t-value = 0.22), but post-IFRSs exerts negative insignificant effect on GR (i.e., coef. val = 0.07, t-value = 0.02). This means that the post-IFRSs era has not significantly reduced GR. The implication of this result is that more outside funds are utilized by the company reducing shareholders' control interest, thus leading to financial distress. This result is consistent with the result provided by the study of Ibiamke and Ateboh-Briggs (2014), but not consistent with the result indicated by Onipe et al. (2015) who found that post-IFRS era has positively enhance value relevance of accounting information of listed deposit money banks in Nigeria.

Furthermore, it was revealed in the comparison between the specified models in the study that the pre-IFRSs exerts negative significant effect on market risk proxies by DFL (i.e., coef. val = -0.10, t-value = -0.21), but post-IFRSs exerts positive insignificant effect on DFL (i.e., coef. val = 0.17, t-value = 0.21). This means that the post-IFRSs era has not significantly reduced DFL. The implication of this result is that increase in the degree of financial leverage will lead to increase volatile earnings of the company. This result give support to the finding reported by Ibiamke and Ateboh-Briggs (2014), Abdullahi et al. (2017), Erin et al. (2017) and Nwaogwugwu (2020) but inconsistent

with the study of Erin et al. (2017) and Ramli (2018) who found that the post-IFRSs era positively and significantly enhanced company's value.

Conclusion and Recommendations

This study carried out a comparative assessment between pre-and post-IFRSs adoption effect on market risk of companies listed on the NSE. Following the empirical studies, pre-and post-IFRSs adoption was represented by dummy variable and market risk was represented by BTMR, GR and DFL variables. The study employed POLS, FE and RE estimation model to analyze the data. In comparing the results obtained in the analyses of the two models specified in the study, it revealed that post-IFRSs adoption era does not significantly affect market risk compared to the pre-IFRSs adoption era. Therefore, the study concludes that the adoption of IFRSs by companies listed on the NSE has no significant effect on market risk compared to pre-IFRSs adoption era, but it reduced BTMR, increased GR and DFL.

It is therefore recommended by the study to the directors of companies listed on the NSE to utilize key areas of the IFRSs particularly where the standard allows estimate and judgment on business transactions that will help them reduce market risk to increase the value of the company, reduce financial distress and volatile earnings of the company.

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