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The effect of IFRS adoption on financial reporting quality: evidence from listed manufacturing firms in Ghana

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ABSTRACT

This paper sought to examine the pre- and post-IFRS adoption effects on the financial reporting quality (FRQ) of manufacturing firms listed on the Ghana Stock Exchange (GSE) via means of correlation analysis, as well as regression analysis using a standard Fixed Effect (FE) model and the Ordinary Least Squares (OLS) technique. Data was sourced from the audited annual reports of eleven manufacturing firms observed over the period 2001 to 2006 for the pre-adoption era, and 2007 to 2014 for the post adoption era, making 148 firm-year observations. Using earnings management, measured by modified Jones' discretionary accruals, as a proxy for FRQ, the regression results showed a significant negative effect of IFRS adoption on earnings management, thus indicating an improvement in the FRQ. On the extent of earnings management practices both pre- and post-IFRS adoption, the study finds a decrease in the post-adoption era as against the pre-adoption era, also signifying an improvement in accounting quality after the adoption of IFRS. The findings of this study indicate that, IFRS adoption enhances the quality of firms' financial reports within the Ghanaian capital market, which is envisaged to boost investor confidence and attract more capital.

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IFRS adoption; financial reporting quality; earnings management; manufacturing firms; stock market; Ghana

JEL CLASSIFICATION

G10; M40; M41

1. Introduction

The International Financial Reporting Standards (IFRS) adoption is an issue of global relevance among various countries of the world due to the quest for standardization, uniformity, reliability and comparability of financial statements of organizations (Okpala, 2012; Palea, 2013). According to the International Accounting Standards Board's IFRS Framework, qualitative characteristics are the attributes that make the information provided in financial statements useful to others. Palea (2013) notes that, the investigation into whether, and to what extent accounting regulation *per se* can affect the quality of financial reporting is a key issue for standard setting purposes, as IFRS have been adopted in very diverse countries all over the world, and many others are likely to adopt them in the near future. Previous studies indicate that the

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adoption of IFRS will enhance the quality of financial reporting. Psaros and Trotman (2004) asserted that, using a common accounting standard is expected to improve the quality of financial reporting. A similar line of thought is expressed in another research conducted by Armstrong et al. (2010) with findings suggesting that, investors in European firms perceived net benefits associated with IFRS adoption. Bodle et al. (2016) provides evidence that the switch from Australian GAAP to IFRS improves the quality of information contained in financial statements for predicting bankruptcy.

The African economy has in recent years been exposed to international influences due to globalization. Agyei-Mensah (2014), in similitude with Okpala (2012), suggested that, the adoption of IFRS will increase the level of confidence of global investors and investment analysts in the financial statements as well as enhancing the uniformity and comparability of financial statements of companies in Ghana and Nigeria respectively. Before the adoption of IFRS in Ghana, the Ghana National Accounting Standards (GNAS) developed by the Institute of Chartered Accountants, Ghana (ICAG) was the main accounting standard in use within the country. The GNAS was partly based on the pre-IFRS International Accounting Standards (IAS) and the UK Accounting Standards. However, owing to globalisation as well as the perceived benefits of IFRS adoption, a move towards IFRS had been suggested and was forthcoming. The World Bank conducted a review of accounting and auditing practices in Ghana which was presented in its Report on Observance of Standards and Codes in 2004. The notion behind the review was to “evaluate the weaknesses and strengths of the accounting and auditing requirements, and to review the reporting requirements against actual practices.” One of the major weaknesses identified in the report, as noted by Agyei-Mensah (2014) was that, the Ghana National Accounting Standards, which was in force at the time, was outdated and differed significantly from IAS. The World Bank therefore, made a recommendation for Ghana to adopt the IFRS. The ICAG, apparently inspired towards a move for reforms to meet global standards, as well as the recommendations of the World Bank, formally launched for the adoption of IFRS in July 2007, beginning with firms listed on the Ghana Stock Exchange (GSE).

The universal acceptability and adoption of IFRS as the new global standard and framework for corporate financial reporting has been celebrated as one of the greatest revolutions ever witnessed within the accounting profession. Nevertheless, the alarming concerns over the complexities associated with preparing and auditing IFRS-compliant financial statements, present opportunity to explore the effect of such major regulatory change on financial reporting. This study seizes the implementation of IFRS in Ghana, amidst alarming concerns over the complexities associated with preparing IFRS-based financial statements, to examine the impact of IFRS adoption on financial reporting quality. The study examines the effect of IFRS adoption on the quality of financial statements of listed firms in Ghana, using the manufacturing industry as a hub.

Agyei-Mensah's study in 2013 on firms listed on the Ghana Stock Exchange suggested that, the implementation of IFRS generally reinforce accounting disclosure quality in the Ghanaian economy. However, other studies have argued that the

adoption of IFRS also allows for the manipulation of accounting numbers. In other words, IFRS encourages managers to be creative, and to use professional judgment, which tends to decrease the comparability, transparency, relevance and reliability of financial information, and hence, have negative impact on the quality of financial reporting (Barth et al., 2006). Ahmed et al. (2013) in tandem with Barth et al.'s study also suggested that, IFRS firms exhibit significant increases in income smoothing and aggressive reporting of accruals, and a significant decrease in timeliness of loss recognition. However, there were no significant differences across IFRS and benchmark firms in meeting or beating earnings targets. Hence, these findings contrast with findings in other studies which suggest that, IFRS adoption leads to increased accounting quality (Iatridis, 2010; Liu & O'Farrell, 2011; Paananen & Lin, 2009). Wang and Campbell (2012) found out that, IFRS are more likely to reduce earnings management compared with Chinese domestic GAAP. In the face of all these inconclusive and controversial evidences, a further probing question is whether adopting IFRS does improve the quality of published financial statements for a country within Sub-Saharan Africa such as Ghana whose business dynamics are quite different from those of firms reported in other studies. This is the crux of the present study.

The rest of the paper is organised as follows. Section 2 reviews relevant empirical literature on earnings management practices, IFRS adoption and their inter-relationships. Section 3 presents the methods employed in gathering data for the study as well as their analysis. Section 4 presents the findings and the attendant analysis of the objectives of the study. Finally, the paper ends with some concluding remarks in Section 5.

2. Literature review

This section details the empirical reviews that are used in buttressing the study's arguments. Studies on financial reporting quality, earnings quality, as well as earnings management in general, began in the U.S early in the 60s through the 80s, and were followed by Europe in the late 90s. Investigations in oriental countries appeared at the beginning of the 21st Century, and in recent years, there has been a boom in investigations based on samples from Asia as observed by Callao et al. (2014). Liu et al. (2011) had earlier on encouraged researchers to focus their attention on investigating the relationships among IFRS, accounting quality and earnings management in oriental and non-English-speaking countries such as China. This call has trickled down to Africa, with emerging studies on earnings management and financial reporting quality in recent years (see for example, Amidu et al., 2016; 2019; Amidu & Kuipo, 2015; Rabin, 2016; Rabin & Negash, 2007; Uwalomwa et al., 2014; Waweru & Ntui, 2018; Waweru & Riro, 2013; Yiadom, 2016).

The subject of IFRS adoption and financial reporting quality has since become a prominent area of accounting research both in Africa (see for e.g. Abedana et al., 2016; Agyei-Mensah, 2014; Okpala, 2012; and Umoren & Enang, 2015), and beyond (see for e.g. Baig & Khan, 2016; Kang, 2013; Landsman et al., 2012; and Pena & Franco, 2017). This area of research has excited interests and academic debates partly due to the push by the IASB for global acceptance of IFRS as a tool to enhance the quality and integrity of financial reporting (Agyei-Mensah, 2014; Psaros & Trotman,

2004) as well as to improve the efficiency of capital markets by boosting investor confidence (Barth et al., 2006; Okpala, 2012). Empirically, the effect of IFRS adoption on financial reporting quality (FRQ) has been assessed. Barth et al. (2006) reported that, IFRS encourages managers to be creative in the use of professional judgment, which tends to decrease the reliability of financial information, and hence have negative impact on the quality of financial reporting. Tendeloo and Vanstraelen (2005) in their study on IFRS adoption and FRQ using German companies found out that, IFRS-adopters do not present different earnings management behaviour compared to companies reporting under the German GAAP. In other words, their findings indicate that, voluntary adopters of IFRS in Germany cannot be associated with lower earnings management. Christensen et al. (2008) and Christensen et al. (2015) studied the determinants of accounting quality changes to identify whether incentives or the standards influenced accounting changes. Their study centered on both earnings management (income smoothing and managing towards small positive profits) and timely loss recognition metrics, with findings indicating that, there was no evidence of accounting quality improvements for firms that are forced to adopt IFRS. Again, they found out that, voluntary adoption of IFRS is associated with decreased earnings management and more timely loss recognition. Paananen and Lin (2009) in their study, focusing on the value relevance, earnings management and timely loss recognition metrics, also found out that, accounting quality did not improve after the voluntary as well as mandatory adoption of IFRS, but rather worsened over time.

By contrast, Kosi (2010), whose cross country study aimed to test whether credit ratings are more sensitive to profitability, leverage and interest coverage ratio, presented other findings. The study which centered on the credit relevance metric, presented findings indicating an increased credit relevance of the interest coverage ratio for mandatory IFRS adopters when ratings are measured by a binary indicator. Also, the study found increased credit relevance of profitability for mandatory adopters from countries with strong creditor protection, and increased credit relevance of interest coverage in countries with strong as well as weak creditor protection, financial risk, and law enforcement. Iatridis (2010) investigated the earnings management potential by examining company accounting measures reported under UK-GAAP and IFRS using Ordinary Least Squares regression technique. The study found out that, implementation of IFRS reduces the scope of earnings management, and also lead to more value relevant accounting measures. This suggests that, less information asymmetry and earnings manipulation would lead to the disclosure of higher quality accounting information, and would therefore assist investors in making informed and unbiased judgements. Liu and O'Farrell (2011) using descriptive statistics in analysing their research variables, suggested in their study on IFRS and earnings management in China that, earnings management had decreased in China since 2007 under IFRS, implying that, there are immediate benefits for regulators, filers, information consumers, the accounting profession and other stakeholders. Liu et al. (2011) also examined the influence of IFRS on accounting quality in China. Using earnings management and value relevance as proxies for accounting quality, the study run estimations by pooling observations 'before and after' the adoption of IFRS, to determine the possible effects of IFRS adoption on accounting quality of firms in China. Their

empirical results show that, the adoption of IFRS reduced earnings management, which usefully reflected on accounting quality.

Kousenidis et al. (2010) in their study on value relevance of accounting information in the pre- and post-adoption periods, using the value relevance metric, found out that, IFRS reduced the incremental information content of book values of equity for stock prices. Also, earnings' incremental information content increased for the post-IFRS period. However, another study conducted by Kargin (2013) using the same quality metric found out that, the value relevance of accounting information improved during the post-adoption period taking into consideration book values, while improvements were not observed in value relevance of earnings. Uyar (2013) conducted a study on the impact of switching standard on accounting quality in Turkey using earnings management (discretionary accruals, income smoothing and small positive earnings), timely loss recognition, and value relevance metrics. The study's findings indicated that, the quality of accounting improved with the market becoming more active. Umoren and Enang (2015) in their study conducted among listed banks in Nigeria, also churned out findings which suggest that, earnings per share was incrementally value relevant during post-IFRS period while book value of equity per share was incrementally less value relevant during the post-IFRS period. This may imply that earnings reported by Nigerian Commercial banks have become more informative to equity investors in determining the value of banks following IFRS adoption. The study focused on twelve (12) listed banks for the pre- and post-IFRS periods (2010 and 2011) and (2012 and 2013) respectively. Descriptive statistics and least squares regression were used in analysing the effect of IFRS adoption on accounting quality. These varying measures presenting mixed and inconclusive empirical evidences serve as an impetus for further studies. This paper therefore sought to examine the effect of IFRS adoption on the quality of financial statements of listed firms in Ghana, using the manufacturing sector as a hub.

The manufacturing industry unlike the banking, insurance and extractive industries in Ghana have been identified to be relatively stable with high growth potential. Moreover, manufacturing firms dominate the number of listed firms on GSE, representing about 45% of the total number of firms, and hence, information provided by them would invariably be very useful to the investor public in their investment decision making on the GSE.

Using earnings management, measured by the modified Jones (1991) model for discretionary accruals as a proxy for financial reporting quality, the study aimed to examine the ex-ante and ex-post effect of the adoption of IFRS on financial reporting quality of manufacturing firms in Ghana. The paper aimed to determine the extent of earnings management practices before IFRS adoption in Ghana. Also, the paper sought to determine the extent of earnings management practices after IFRS adoption in Ghana. Thereafter, the paper ascertains the effect of IFRS adoption on the quality of financial reporting through the ex-ant and ex-post effects of IFRS adoption.

3. Methodology

The present study is explanatory in nature. It is quantitatively designed to explain the effects of IFRS adoption as well as other control variables on financial reporting

quality with a view to suggest ways of enhancing the quality of financial reporting within the Sub-region.

Secondary data from the annual reports and financial statements of the selected manufacturing companies were converted into a panel dataset. Panel datasets offer a very effective way to study data as it allows for variations in constructing parameter estimates, as well as permitting the use of relatively simple econometric techniques (Bond, 2002). The sample for this study was obtained based on the following criteria: 1) the firm must have been categorized under manufacturing/industrial by the GSE firm categorizations; 2) the firm must have complete data relating to the variables for the study; 3) the firm must have existed and issued financial statements for the pre-IFRS period (2001-2006) and post-IFRS period (2007-2014) completely. The variables of study were analysed via means of regression analysis using the Ordinary Least Squares (OLS) regression technique.

Following the works of Land and Lang (2002), Myers and Skinner (2002), Tendeloo and Vanstraelen (2005), and Iatridis (2010), the following regression model was adopted for the study.

$$DA_{it} = a_0 + a_1FRS_{it} + a_2CFO_{it} + a_3SIZE_{it} + a_4PROF_{it} + a_5LEV_{it} + a_6GRWTH_{it} + a_7ASSTURN_{it} + \varepsilon_{it}$$

Firstly, the above model was used to examine the association between discretionary accruals and cashflows of firms. Operating cashflows, as Pae (2005) finds in his study, greatly improve the explanatory and predictive power of the Jones' model; but lagged accruals, as he indicated, do not. The study carried out its examination of discretionary accruals and cashflows by identifying the Pearson correlation between discretionary accruals and cashflows separately in the pre- and post-IFRS periods. A negative correlation is indicative of earnings management as firms tend to manipulate and increase accruals when cashflows appear to be lower (Iatridis, 2010). Secondly, the study used the Ordinary Least Square (OLS) regression technique to examine the effects on discretionary accruals (i.e. proxy for FRQ) by cashflows and financial reporting system, together with other control variables such as firm size, profitability and leverage which are all widely supported in the literature¹ (see Table 1).

4. Discussion of findings

Tables 2 and 3 presents the descriptive summary statistics of the variables used in the study. These show on average terms, the indicators of variables computed from the financial statements.² They help to identify possible irregularities or abnormalities in the dataset before the regression is carried out. The summary statistics are presented for both pre-IFRS and post-IFRS adoption eras to give an in-depth understanding on the average indicators of the variables computed from the financial statements. On average, it is observed that, under pre-IFRS period, firms exhibit higher discretionary accruals (DA) than under post-IFRS adoption period. It can also be observed that, firms under pre-IFRS adoption period generated more cash from operations than firms under post-IFRS adoption period. Also, firms under post-IFRS adoption period

Table 1. Summary of variables.

| Variable | Scale | Source |
|---------------|---|----------------|
| DA | This is measured using the Jones (1991) Model as modified. $NA_{i,t} = \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{(\Delta Rev_{i,t} - \Delta AR_{i,t})}{A_{i,t-1}} + \alpha_3 \frac{PPE_{i,t}}{A_{i,t-1}}$ <p>Where for firm <i>i</i> $NA_{i,t}$ = Non-discretionary accruals in year <i>t</i> $A_{i,t-1}$ = total assets in the year <i>t-1</i> $\Delta Rev_{i,t}$ = the change in revenues from the preceding year $\Delta AR_{i,t}$ = the change in accounts receivable from the preceding year $PPE_{i,t}$ = the gross value of property, plant and equipment in the year <i>t</i> $\alpha_1, \alpha_2, \alpha_3$ = firm-specific parameters Estimates of the firm specific parameters are done via the model: $\frac{TA_{i,t}}{A_{i,t-1}} = \alpha_1 \frac{1}{A_{i,t-1}} + \alpha_2 \frac{(\Delta Rev_{i,t} - \Delta AR_{i,t})}{A_{i,t-1}} + \alpha_3 \frac{PPE_{i,t}}{A_{i,t-1}} + \varepsilon_{i,t}$ Where Total accruals (TA) defined as net operating income minus operating cash flows, that is, $TA_{i,t} = NOPIT_{i,t} - CFO_{i,t}$ $\varepsilon_{i,t}$ is taken as an estimate of discretionary accruals (DA) for the firm <i>i</i> in the year <i>t</i>. This is measured by operating cash flows as scaled by total assets</p> | Annual reports |
| CFO | Cash Flow from Operating Activities | Annual reports |
| FRS | Financial Reporting System | Annual reports |
| PROF | Profitability | Annual reports |
| LEV | Leverage | Annual reports |
| SIZE | Size | Annual reports |
| GRWTH | Firm size | Annual reports |
| ASSTURN | Asset Turnover | Annual reports |
| ε | Error term | Annual reports |

Source: Author's Compilation.

Table 2. Descriptive statistics (Pre-IFRS).

| Variable | Mean | Std. Dev. | Min. | Max. | Obs. |
|----------|-------|-----------|--------|-------|------|
| DA | 0.054 | 0.120 | -0.376 | 0.433 | 61 |
| CFO | 0.119 | 0.275 | -0.746 | 1.360 | 61 |
| SIZE | 6.969 | 0.680 | 5.595 | 8.080 | 61 |
| PROF | 0.067 | 0.094 | -0.347 | 0.242 | 61 |
| LEV | 1.240 | 1.012 | 0.079 | 6.258 | 61 |
| GRWTH | 0.376 | 1.308 | -0.180 | 9.460 | 61 |
| ASSTTURN | 1.270 | 0.604 | 0.366 | 3.248 | 61 |

Source: Compiled Data from Annual Reports, Ghana.

Table 3. Descriptive statistics (Post-IFRS).

| Variable | Mean | Std. Dev. | Min. | Max. | Obs. |
|----------|--------|-----------|--------|-------|------|
| DA | -0.019 | 1.648 | -0.345 | 0.791 | 87 |
| CFO | 0.041 | 0.152 | -0.516 | 0.601 | 87 |
| SIZE | 7.474 | 0.737 | 5.952 | 8.741 | 87 |
| PROF | 0.073 | 0.175 | -0.775 | 0.761 | 87 |
| LEV | 1.203 | 1.221 | 0.052 | 7.511 | 87 |
| GRWTH | 0.314 | 0.937 | -0.726 | 7.548 | 87 |
| ASSTTURN | 1.018 | 0.472 | 0.228 | 2.998 | 87 |

Source: Compiled Data from Annual Reports, Ghana.

are more profitable than firms under pre-IFRS adoption period. However, firms under post-IFRS adoption period experienced a decline in leverage, growth and asset turnover. Finally, the average size of firms under post-IFRS was 7.474 as compared to 6.969 in the pre-IFRS adoption period, suggesting that, the total assets of manufacturing firms listed on the Ghana Stock Exchange saw an upgrade after the adoption of IFRS. It is worth noting that, although these mean-descriptive statistics of the variables are indicative of the state of affairs regarding the possible effect of IFRS adoption on FRQ for both pre- and post-IFRS adoption periods, they are by no means absolute or conclusive as the standard deviations seem to correlate in their movements in tandem with the mean values, which lend themselves for further probing. The pre- and post-IFRS correlation matrices (i.e. [Tables 5](#) and [6](#)), thus, throws more light on the significance of the association, especially in explaining the effect in terms of pre- and post-IFRS adoption on FRQ.

4.1. Correlation matrix showing the relationship between the various variables

From the correlation matrix ([Table 4](#)), the financial measures; cash flows from operations (CFO) and profitability (PROF) have negative and positive statistically significant relationships with discretionary accruals (DA) respectively, whereas the other financial measures have no statistically significant relationships with DA. Further, financial reporting system (FRS) in use has a positive and significant relationship with DA, as well as a negative and significant relationship with CFO.

Profitability and asset turnover (ASSTTURN) have positive and significant relationship with CFO, while size and asset turnover have respectively significant positive and negative relationships with FRS in use. Also, growth (GRWTH) is positively related with leverage, but negatively related with size; while asset turnover is

Table 4. Correlation matrix.

| | <i>DA</i> | <i>CFO</i> | <i>FRS</i> | <i>Prof</i> | <i>Lev</i> | <i>Size</i> | <i>Grwth</i> | <i>Asstturn</i> |
|----------|-----------|------------|------------|-------------|------------|-------------|--------------|-----------------|
| DA | 1.0000 | | | | | | | |
| CFO | -0.5966* | 1.0000 | | | | | | |
| FRS | 0.2502* | -0.1797* | 1.0000 | | | | | |
| PROF | 0.2641* | 0.2792* | 0.0222 | 1.0000 | | | | |
| LEV | 0.0255 | -0.1217 | -0.0158 | -0.1332 | 1.0000 | | | |
| SIZE | 0.1498 | -0.1303 | 0.3311* | 0.1250 | -0.0544 | 1.0000 | | |
| GRWTH | -0.0010 | 0.1127 | -0.0390 | 0.0494 | 0.2325* | -0.1719* | 1.0000 | |
| ASSTTURN | -0.1213 | 0.2179* | 0.2298* | 0.2152* | -0.1129 | -0.1645* | 0.2447* | 1.0000 |

Source: Output from STATA Software.

*Significant at 5%.

Table 5. Pre-IFRS analysis correlation matrix.

| | <i>DA</i> | <i>CFO</i> |
|-----|-----------|------------|
| DA | 1.0000 | |
| CFO | -0.6574* | 1.0000 |

Source: Output from STATA Software.

*Significant at 5%.

Table 6. Post-IFRS analysis correlation matrix.

| | <i>DA</i> | <i>CFO</i> |
|-----|-----------|------------|
| DA | 1.0000 | |
| CFO | -0.4581* | 1.0000 |

Source: Output from STATA Software.

*Significant at 5%.

negatively related with size but positively related with growth. All these identified relationships were statistically significant.

4.2. Correlation matrix showing the relationship between discretionary accruals and operating cashflows in both pre- and post-IFRS adoption eras

Tables 5 and 6 show the correlation matrices for both pre-IFRS and post-IFRS adoption periods. The results of the two correlation matrices examine the extent of earnings management practices before and after IFRS adoption respectively. A negative relationship between DA and CFO is indicative of the presence of earnings management, whereas the extent or magnitude of earnings management practices by firms is revealed by the absolute correlation figure (or proportion). From the pre-IFRS correlation matrix, there is a negative significant relationship (-0.6574, significant at 0.05) between DA and CFO. This indicates the extent of earnings management practices by the manufacturing industry within the pre-IFRS period, where about 65.74% of manufacturing firms practiced income smoothing (or earnings management). The post-IFRS correlation matrix also shows a negative significant relationship (-0.4581, significant at 0.05) between DA and CFO. This is also an indication of the extent of earnings management practices within the manufacturing industry after IFRS adoption. The post-IFRS period saw manufacturing firms practicing income smoothing (or earnings management), albeit at a decreased rate (i.e. about 45.81% of firms were engaged in earnings management). The Pearson correlation results of this study

Table 7. Hausmann test.

| Variable | Coefficients | | | |
|----------|--------------|------------|-------------------------|-----------------------------|
| | (b) Fe | (B) Re | (b) – (B) Difference | sqrt (diag (V_b-V_B)) SE |
| FRS | -0.0760776 | 0.0248189 | -0.1008964 | 0.0169169 |
| SIZE | 0.165553 | -0.0032782 | 0.1688312 | 0.0375569 |
| PROF | 0.5017566 | 0.5000322 | 0.0017244 | 0.0096826 |
| LEV | -0.0239004 | -0.0097559 | -0.0141445 | 0.0043152 |
| GRWTH | 0.0032659 | 0.0133037 | -0.0100378 | - |
| ASSTURN | -0.0129611 | -0.0174369 | 0.0044758 | 0.0150554 |
| CFO | -0.6096977 | -0.568857 | -0.0408407 | - |

Source: Output from STATA Software.

b = consistent under Ho and Ha; obtained from xtreg.

B = inconsistent under Ha, efficient under Ho; obtained from xtreg.

Test: Ho: difference in coefficients not systematic.

chi2 (7) = (b-B)'[(V_b-V_B) ^ (-1)] (b-B).

= 28.08.

Prob > chi2 = 0.0002.

(V_b-V_B is not positive definite).

Table 8. Ordinary least square regression results.

| DA | | | | |
|--------------------|--------|-------|--------|------------|
| Variable | Coef. | P> t | T | Std. Error |
| Constant | -1.088 | 0.000 | -3.82 | 0.285 |
| CFO | -0.609 | 0.000 | -14.48 | 0.041 |
| FRS | -0.076 | 0.003 | -3.09 | 0.024 |
| PROF | 0.501 | 0.000 | 7.54 | 0.665 |
| LEV | -0.024 | 0.008 | -2.71 | 0.088 |
| SIZE | 0.165 | 0.003 | 4.21 | 0.039 |
| GRWTH | 0.033 | 0.679 | 0.42 | 0.007 |
| ASS_TURN | 0.038 | 0.571 | -0.57 | 0.022 |
| R-squared = 0.3252 | | | | |
| Prob > F = 0.0000 | | | | |

Source: Output from STATA Software.

agrees with that of Barth et al. (2006, 2008), and demonstrates further that, under post-IFRS adoption period, the relationship between discretionary accruals and cash-flows from operations inches more towards zero, compared with results from the pre-IFRS period. This, in turn suggests that, IFRS adoption tends to reduce the extent of earnings management practices of listed firms.

The study also used the Hausmann test to examine the appropriateness of either the random effects model or the fixed effects model for the study's regression analysis. Hausmann test examines the various estimation methods in order to determine the one which is consistent and efficient under the null and the alternative hypotheses. The Hausmann test run suggested fixed effects model as the model that comes closer to the true data generating process, and therefore more suitable for the study's analysis (see Table 7).

4.3. Regression results

Table 8 presents regression results that seek to determine the effect of IFRS adoption on FRQ (proxied by DA) along with other control variables. This was done through

an OLS regression of DA on cashflows (CFO), financial reporting system (FRS), profitability (PROF), leverage (LEV), firm size (SIZE), growth (GRWTH) and asset turnover (ASS_TURN).

From the regression analysis, FRS which represents the Financial Reporting System in use is significantly negative. This suggests that firms reporting under IFRS tend to exhibit lower accruals, and are thus less likely to be prone to earnings management. In other words, the IFRS-regime seems to reduce the earnings management practices of such firms. The contrary can be suggested about firms reporting under the pre-IFRS adoption era, as they seem to show higher accruals, indicating their likelihood or proneness to earnings management. This finding tends to support the Public Interest Theory which argues that, the regulatory regime, in this case, IFRS enforcement, act as a “watch dog” whenever the Public interest is about to be sacrificed. The enforcement agencies such as the SEC can step in as a regulator to avoid a firm acting in a natural monopoly market, or managers acting to prejudice consumers and investors. These findings are consistent with results reported in the works of Iatridis (2010), Liu et al. (2011), Hao et al. (2019), as well as Key and Kim (2020). With the exception of Iatridis (2010) whose study was based in the UK, the rest of these studies were carried out in Asia, and all of the studies used as proxy, the magnitude of discretionary accruals (DA), in investigating whether IFRS significantly lowers the accrual aggressiveness.

Also, the study's results show that, the effect of DA on CFO is significantly negative. This implies that, firms operating under IFRS still engage in earnings management practices, although, the extent of earnings management practices reduces with the adoption of IFRS (crosscheck with Tables 5 and 6). The results can be explained from the perspective of Positive Accounting Theory which suggests that, management would opt for a particular accounting method or standard (in this case, IFRS) when they perceive a likely positive outcome from the adoption of IFRS in reducing the extent of earnings management practices, thereby placing the firm on the good books with investors and other stakeholders. This result is also consistent with studies by Leuz et al. (2003), Tendeloo and Vanstraelen (2005) and Iatridis (2010). For instance, Tendeloo and Vanstraelen (2005) revealed a negative correlation between accruals and operating cashflows as indication of the use of accruals to smooth the variability in operating cashflows. They added that, while a negative correlation between accruals and operating cashflows is inherent to accrual accounting, differences in the magnitudes of the correlation indicate, *ceteris paribus*, variation in the extent of income smoothing.

Again, the study also ascertained the effect of discretionary accruals on profitability (PROF) which shows a positive significant result. This implies that, firms with low profitability after the adoption of IFRS do not tend to increase accruals and thus, reduce their scope of earnings management practices. On the other hand, a more profitable company is more likely to engage in earnings management, as it makes the performance of the companies look even better, which consequently might result in managers getting bigger bonuses. That is to say, the higher the profitability ratio of the firm, the more the extent in earnings management practices. This result is consistent with studies conducted by Amertha (2013), Gunawan et al. (2015), and Nico and Hengky (2017).

Further, the study shows a positively significant effect of discretionary accruals on firm size (SIZE). This connotes that, larger firms under IFRS adoption period display higher evidence of earnings management practices, and smaller firms display lower evidence of earnings management practices. This may be due to the argument that, larger firms are more exposed to public attention (i.e. political cost hypothesis) and therefore, would be predisposed to have larger variations in earnings compared to smaller firms. In addition, larger firms may face more pressure to manipulate earnings to show stability and stronger management power as compared to their smaller firm counterparts.

Finally, leverage (LEV) is reported to be negatively related to discretionary accruals. This implies that, firms exhibiting high leverage would not be inclined to increase their accruals. This is because; the increased debt of a firm might reduce the level of management's discretionary spending, and in turn, reduce earnings management. This result is consistent with studies conducted by Norhayati et al. (2013) indicating that, high leverage firms have lower levels of earnings management practices which could in turn affect the quality of accounting earnings.

5. Conclusion

In conclusion, the study which set out to examine the extent of earnings management practices within the manufacturing industry emerged with evidence that suggests that, earnings management practices have existed both in pre-IFRS and post-IFRS adoption periods. Again, the extent of earnings management practices was higher in pre-IFRS adoption period than in the post-IFRS adoption period, suggesting that, IFRS adoption tends to reduce earnings management practices, and consequently, improves FRQ by reducing the extent of income smoothing of firms. Hence, the study concludes that, the adoption of IFRS is effective in improving the quality of financial statements. In spite of this conclusion emanating from the study's findings, care must be taken when making generalisations as a result of the study's findings since only manufacturing firms were used in the analysis.

Again, although IFRS adoption have proven to be effective in reducing or minimising the practice of earnings management of firms, this was albeit, found to be at a slow rate. The study therefore recommends the tightening of the loopholes within the IFRS Framework that allows more subjective judgements in the making of estimates by preparers of financial statements. Furthermore, strengthening corporate governance regulations, as Proimos (2005) affirms, would help in preventing corporate malfeasance as well as maintaining integrity within the stock market. Further studies should consider expanding the sample scope, as well as the possible inclusion of other variables, as the proportion of explained variations in FRQ by the study's model is quite low (i.e. $r\text{-squared} = 0.3252$), although not uncommon with studies such as this. This, nonetheless, does not negate the models predictive ability, as it is significant. Moreover, in view of the fact that, effective corporate governance regulations aims among other things, at curtailing the activities of illegal earnings management practices within the corporate and business landscape, it would be illuminating to look at the moderating role that corporate governance regulations can play in helping

to limit earnings management practices of firms, together with their other attendant effects.

Notes

1. See for example: (Hasan et al., 2014; Keefe, 2013; and Khan, n.d. on Discretionary Accruals); (Keefe, 2013; and Iatridis, 2010 on Operating Cash flows); (Gunawan et al., 2015; and Kallunki & Martikainen, 2003 on Profitability); (Moses, 1987; and Myers & Skinner, 2002 on Firm Size); (Ma'ruf, 2006 as cited in Guna & Herawaty, 2010 on Leverage); (Nozarpour & Norouzi, 2015; and Zouari et al., 2012 on Growth); (Warrad & Al Omari, 2015 on Asset Turnover).
2. See Table 1 for the measurements and discussion of the study's variables.

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