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Research Article

Value Relevance of Selected IFRS-Accounting Numbers on core capital allocation decision of Listed Firms in Ghana

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Abstract

Notwithstanding the IFRS adoption's demerits, its relevance remains not only a challenge for adherence in developing economies, but also research in the core capital allocation decision is still under-researched. This study examines the impact of relevant accounting information on the core capital allocation decision of Ghana Stock Exchange-listed firms in the context of IFRS adoption. The data of the study is obtained from the respective firms' websites from 2013 to 2023 of 176 year-observations, and using panel cointegration with the FGLS and PCSE estimators after testing for spatial dependence and heterogeneity. According to the findings, IFRS adoption, free cash flow from operations, and firm size have a considerable positive influence on the core capital allocation efficiency. There is evidence that bidirectional causation relationships prevailed between return on capital employed and core capital allocation in the long run, and a similar relationship exists between free cash flow and core capital allocation decisions in the short run, using the pooled mean group estimator technique. We apply panel cointegration of the second-generation technique, which serves as a novelty. Amidst the ascribed merits, the effect of IFRS adoption on core capital allocation in Ghana remains limited, pointing to a significant lacuna in the existing literature, as it has received broader attention in current research paradigms.

Keywords: *Value Relevance; Core capital allocation decision; Agency theory, institutional Theory; Emerging Economies.*

1. Introduction

International Financial Reporting Standards impact on Ghana's listed firms has been studied in areas like financial reporting, corporate governance and accounting quality. These critical areas are underscored by value relevant, transparency and comparability which necessitate for efficient capital markets and reduction in information asymmetries. Ever since Ghana has mandatory adopted IFRS in 2007, the Institute of Chartered Accountants, Ghana has been putting pressure on the matter of regulatory efforts on the local accounting practices to align with IFRS aiming to improve investor confidence and to arouse cross-border investments (Agyei-Mensah, 2016; Houcine, 2017). Prior studies assert that the implementation of IFRS contribute to enhanced disclosure quality and assurance of financial reporting quality of listed firms (Agyei-Mensah, 2013; Ahinful et al., 2012). Given these inherent benefits, this study ascertains the pivotal role of IFRS accounting numbers in the core of capital allocation decision of listed firms in Ghana. It is of the view that this study could directly influence stakeholders' valuable insights decisions and investor's expectation about returns on investment (Biddie et al., 2013). Amidst the ascribed merits, the effect of IFRS adoption on core capital allocation in Ghana still remains limited, pointing to a significant lacuna in existing literature (Tawiah & Boolaky, 2019; Amissah et al., 2020; Yeboah & Claudio, 2021). It is noted that prior studies have highlighted on compliance and disclosure quality, earnings management and analyst following with limited attention to the extent IFRS influences capital allocation

decision within Ghana's listed firms' financial statements numbers. Furthermore, findings on earnings management, financial reporting quality of IFRS's effect achieved a conflicting view, especially in developing economies where enforcement and monitoring supervisions vary (Amissah et al., 2020; Agana et al., 2023; Anggraeni, 2023; Atanasko & Marina, 2019). This issue highlights the pressing need for firm-specific analyses to comprehend the complex impacts of IFRS adoption on capital allocation and financial decision-making (Tawiah & Boolaky, 2019; Tawiah, 2019). Lack of comprehensive studies into these related areas about Ghana poses risks of effectiveness of IFRS in ameliorating capital allocation decisions and resource redeployment (O'Connell et al., 2019).

This study recognizes both agency theory and institutional theory as conceptual frameworks underpinning the discussion. This is due to the fact that both theories integrate financial reporting quality, IFRS adoption and capital allocation efficiency (Amissah et al., 2020). The relationship between IFRS adoption and capital allocation decision is hinged on financial reporting quality, which is embedded on enhancement, leading to reduce information asymmetry of managers and investors in capital allocation of agency theory (Amissah et al., 2020). Moreover, with Ghana's regulatory and cultural environment, institutional theory is contextualized, pinpointing the enforcement and professionals' roles (Yeboah & Claudio, 2021).

Against this background, this study evaluates IFRS implementation influence on the core capital allocation decision of listed firms in Ghana. this study aims to fill the identified research gap by providing an in-depth analysis of the extent IFRS influences core capital allocation decision in Ghana's capital market.

This study contributes to the IFRS adoption in the areas of core capital allocation decisions in developing economy like Ghana in the literature. First, we demonstrate how the switch to IFRS associated with its value relevance have largely supported the investment context under the shed light of agency and institutional theories. Second, there is the wide application of IFRS in accounting and finance, empirical research on the merits of IFRS in the core capital allocation in developing economy like Ghana are currently gaining research interest (Amissah et al., 2020; Qzil, 2016).

Furthermore, in the quest to achieve robust results, the study employed FGLS and PCSE to obtain long-run estimates, while the pooled mean group (PMG) is used to discover the direction of the nexus. It also used panel cointegration estimator to assess the long-run correlation between variables. This pathway of the study also contributes novelty in research design into knowledge in accounting and finance.

2. Literature Review and Hypotheses Development

2.1 IFRS and core capital allocation decision

Within the empirical stands, the adoption of IFRS has become the global benchmark for improving financial reporting quality, which influences core capital allocation decision (Chen et al., 2013). IFRS adoption aims to enhance financial reporting quality, transparency, and comparability globally (Yeboah & Pais, 2021; Mensah, 2020). In Ghana, the shift to IFRS by listed firms was intended to minimize weaknesses in the Ghana National Accounting Standards (GNAS) and improve the reliability of accounting information (Yeboah & Pais, 2021). Enhanced financial reporting quality, as a result of IFRS adoption, can positively influence several aspects relevant to core capital allocation. For instance, better financial reporting reduces information asymmetry between firms and investors, which is crucial for efficient capital markets (Mi et al., 2023) and better investment returns (Chen et al., 2013). When financial reporting is of higher quality, investors can make more informed decisions, potentially leading to a lower cost of equity capital for firms (Hoque et al., 2015). There are contrast findings as well (Hoque et al., 2015). This study hypothesis that:

H1: IFRS quality implementation has a positive effect on core capital allocation decision.

2.1 Core capital allocation and ROCE relationships

Core capital allocation refers to the strategic deployment of a firm's primary financial resources towards various investment opportunities, including operational assets, research and development (R&D), and expansion projects. The effectiveness of these allocation decisions directly influences a firm's profitability and, consequently, its ROCE. The relationship between capital investment efficiency and return on capital employed (ROCE) can exhibit both positive and negative pathways. A positive relationship emerges when firms efficiently allocate capital, generate free cash flow that enhances earnings capacity and minimizes investment losses (Ramallingegowda et al., 2013). In such cases, firms benefit from optimized investments to support sustainable growth and profitability. Conversely, a negative relationship may occur when firms underperform, that leads to inefficient capital utilization and poor returns. Khan et al. (2019) found that Canadian firms with efficient capital allocation experienced a direct positive impact on ROCE, which in turn leads to yield higher shareholder returns and better in meeting short-term financial obligations. In another path, O'Connell et al. (2019) affirmed the similar findings of Spanish companies. We make the hypothesis from this discussion as:

H2: ROCE in IFRS has a positive effect on core capital allocation decision.

2.2 Core capital allocation and free cash flow causal relationship

The adoption of IFRS gives reasonable assurance of financial reporting quality to pave the way for attaining free cash flow for encouraging the core capital allocation decision that reduces uncertainty associated with investors' asset's return (Ramalingegowda et al., 2013). This scene aligns with the both agency and institutional theories, which emphasizes the integration of financial reporting quality, IFRS adoption and capital allocation efficiency (Amissah et al., 2020; Sun, 2005) to enhance value relevant growth. Efficient core capital allocation helps to generate sustainable free cash flow that is crucial for long-term success which leads to increase revenue, expanding market share, and enhancing working capital management, particularly in cross-border of IFRS applications (Chen et al., 2013). Prior studies (Chen et al., 2013; Beatty et al., 2010) confirm that IFRS adoption has improved reporting quality, which, in turn enhances higher free cash flows (Richardson, 2006). Ramalingegowda et al. (2013) revealed similar finding with Kenya studies. Similarly, Beatty et al. (2010) revealed that Korean firms with optimized core capital allocation attained substantial free cash flow, leading to affirm a positive link between core capital allocation efficiency and liquidity. Based on these insights, the following hypothesis is formulated:

H3: Free cash flow of IFRS has a positive effect on core capital allocation decision.

2.3 Core capital allocation and firm growth relationship

The relationship between core capital allocation decision and firm growth is a key area in corporate financial management, as it can drive sustainable growth for profitability (Airuwailli et al., 2023). Strategic core capital allocations embedded in strong accounting frameworks in IFRS, tend to facilitate firm's long-term success. Empirical studies confirm that efficient core capital allocation foster firm growth in multiple contexts. For instance, Bouzgarrou et al. (2018) found that efficient core capital allocation positively impacted growth of Tunisian firms to aid expansion of firms. Similarly, Liu et al. (2021) confirmed that Korean firms with higher capital allocation efficiency drive greater corporate growth amidst higher debt levels, but growth relationships may not be universally positive. Therefore, we hypothesize as:

H4: The firm's size (total assets) under IFRS has a positive effect on core capital allocation decision.

2.4 Combined effect of IFRS and ROCE (IFRSROCE) and core capital allocation decision

The adoption of IFRS has been associated with improved financial reporting quality to enhance comparability of accounting figures. ROCE and core capital allocation decision are critical drivers of profitability and long-term firm success. Li and Wang (2010) found that Chinese firms adopting IFRS achieved better ROCE that assures stable earnings. Similarly, Houcine (2017) reported that Tunisian companies that adopt IFRS achieve high ROCE and strong liquidity. Liu et al. (2021) asserted that enhanced core capital allocation decision yields positive ROCE by Turkish firms. Li and Wang (2010) study affirmed a negative effect of IFRS adoption on ROCE under the core capital allocation decision of Chinese construction firms. They attributed the negative effect to the cyclical nature of the industry and intense inherent competitions. We can therefore hypothesize that:

H5: IFRSROCE under the new standards has no impact on core capital allocation efficiency.

3. Materials, methods, and data collection

This study examines the relationship between IFRS adoption and core capital allocation using panel data econometric models. Due to complexities of ordinary least squares (OLS) in areas of presence of serial correlation, and inconsistent of OLS estimates, this study employs Feasible Generalized Least Square (FGLS) and Panel-Corrected Standard Error (PCSE). Panel data offers significant advantages by accommodating time-variant and firm-specific characteristics, allowing the use of methods such as unit root tests, Pesaran CD for cross-sectional dependence, slope homogeneity tests, panel cointegration, and autoregressive models (Cameron & Trivedi, 2009). The heteroskedastic nature of firm data across time justifies the use of FGLS and PCSE techniques to ensure reliable estimates. This paper dealt with 16 mining and manufacturing firms in Ghana for 176 year-observations. The selection for these sectors was due to the aspects of capital intensity and operational complexity associated with capital allocation decisions.

This research focuses on the interactions between IFRS and ROCE, free cash flow, firm size, and core capital allocation among listed companies in the Ghana Stock Exchange (GSE). Data for the analysis, spanning the period 2013–2023, was obtained from audited financial statements available on the firms' websites. The key interest variable is the interaction term of IFRSROCE to capture the combined effect of IFRS and return on equity of core capital allocation decisions.

This study employs quantitative approach to investigate the impact of IFRS adoption on core capital allocation decisions. The use of FGLS and PCSE ensure robust estimations of elasticities, yielding more precise long-term parameter estimates. These econometric techniques account for cross-sectional heterogeneity and serial correlation, which are crucial for accurately modeling financial panel data. Table 1 provides further details on the data collection and variable definitions used in the study.

Table 1: Definition of variable notation

Notation	Variable name	Unit	Source	Expected sign
Dep var: INVEST	Core capital allocation = total assets-cash and Short-term investments	GHs amount	Use accounting values to derive	+/-
Ind Vars.				
IFRS	International Financial Reporting Standards	Accounting standards applied	Selected firm's accounts records	+
CFW	Free cash flow= cash- operating expenses-capital expenditures	GHs amount	Selected firms accounts records	+
SIZ	Natural logarithm of total assets	GHs amount	Selected firms accounts records	+
ROCE	Return on Capital Employed =earnings before interest and tax/capital employed (total assets – current liabilities)	GHs amount	Selected firms accounts records	+
IFRSROCE	Combined effect of IFRS and ROCE	GHs amount	Selected firms accounts records	+

Source(s): Author computation, 2025

3.1 Descriptive analysis

Statistics of the study variables are shown in Table 2, displaying in the model estimation. It further reveals the entire elements of descriptive summary and variability of them. Kurtosis measures the cohesiveness of the distribution, which includes a platykurtic distribution result within a discrete uniform dispersion. The skewness values explain that IFRS and CFW achieved a long right tail as compared to the static nature of INVEST, ROCE, and SIZ. The normality test of Jarque-Beta depicts that all the variables are normally distributed to achieve a meaningful inference. The core capital allocation (INVEST) variable measures the highest result before free cash flow value; therefore, it is a critical variable for consideration. However, the rate of variation of the standard deviation is not much wider, resulting in less volatility.

The mean (standard deviation) value for INVEST is 19.1(38.9), indicating that the sample companies invest an average of 19.1% of their total assets in core capital allocation. The mean value for IFRS is 0.50(0.50), indicating that the standard deviation of the sample companies' stock returns is 0.50. The mean value for ROCE is -0.034(-0.03), indicating that the sample companies have a negative average return on capital employed. The mean value for CFW is -2.11(1.26), indicating that the sample companies have negative average free cash flows. The mean value for SIZ is 9.93(2.14), indicating that the sample companies have an average size of 9.93 million cedis in total assets. The mean value for IFRSROCE is -0.11(2.17), indicating that the average return on capital employed under IFRS is negative.

Table 2: Descriptive statistics

	INVEST	IFRS	ROCE	CFW	SIZ	IFRSROCE
Mean	19.1	0.50	-0.034	-2.11	9.93	-0.11
Std. dev	38.9	0.50	-0.03	1.26	2.14	2.17
Min	158	0.00	-27.93	-6.22	0.00	-27.93
Max	211	1.00	5.00	4.02	13.30	5.00
Skewness	0.00	0.96	0.00	0.22	0.00	0.00
Probability	0.00	--	0.00	0.00	0.00	0.00

The minimum and maximum values provide information on the range of values for each variable. For example, the minimum value for ROCE is -27.93, indicating that some companies in the sample have very low or negative returns on capital employed. The maximum value for SIZ is 13.30, indicating that some companies in the sample are very large in terms of total assets. The skewness values indicate the degree of symmetry in the distribution of each variable. A skewness of 0.00 indicates a symmetrical distribution. The probabilities of each variable indicate the rejection of the null hypothesis of normality for all variables, suggesting non-normal distributions.

3.2 Empirical model

It is noted that not so many studies are related to this research design in accounting for a single-country study. In the case of several countries, Wang and Li (2019), and Appiah et al. (2019) used a panel approach. The cointegration and unit root tests highlight the significance of spatial dependence and homogeneity or heterogeneity among the variables utilized in the analysis, taking into consideration their normality. The study determines the cross-section dimension (X) to be 27 more than the time (P) dimension of 10 to verify the uniformity of homogeneity-adjusted delta tilde tests (Pesaran & Yamagata, 2008). The study then tests the stationarity of the variables to permit investigating the long-run relationship between core capital allocation and IFRS and combined IFRSROCE. Our empirical and theoretical possibilities were based on the usage of multiple regression specifications, bearing in mind the variables employed as follows in (eq1):

$$INVEST_{it} = f(IFRS, ROCE, CASHFLOW, SIZ, IFRSROCE)_{it} \quad \text{eqn 1}$$

Where INVEST implies core capital allocation efficiency; IFRS is the accounting standards; ROCE denotes return on investor fund; CASHFOW (CFW) is the free cash flow from operation; and IFRSROCE is the interaction of accounting standards and return on capital employed (eq2).

$$INVEST_{it} = \alpha_{it} + \psi_1 IFRS_{it} + \psi_2 ROCE_{it} + \psi_3 CASHFLOW_{it} + \psi_4 SIZ_{it} + \psi_5 IFRSROCE_{it} + \varepsilon_{it} \quad \text{eqn2}$$

In the model, i represents each firm (i = 1,...X) and t represents the time period (t = 1,...P). The data estimation recognizes both intercept () and error term () for proper representations and understandability of the equations. Marginal effects were used to explain the elasticities of the variables employed for the study.

3.3 Statistical analysis

Pesaran CD (or Pesaran cross-sectional dependence) is an econometric methodology design that accounts for cross-sectional dependence in panel data when there is a large cross-sectional dimension but a small number of firms (Pesaran, 2006). This method estimates the common factor structure of the data, accounting for the presence of shared factors that impact all companies in the sample. This approach can improve the efficiency of the estimators and produce more accurate inferences. However, it can be computationally demanding and may require a large amount of data to identify the common factors accurately (Bai & Ng, 2008). The panel data under this state evidence the merits, as a large cross-section dimension, provides more variation in the data and increases the precision of the estimates, and a small number of firms can reduce potential heterogeneity in the data and for recognizing any other drivers influencing dependent variable. A few demerits can include: with a small number of firms, there may not be enough degrees of freedom to estimate complex models or test for certain hypotheses, and a small number of firms may lead to reduced precision and low ability for identifying true effects, existing in the data (Wooldridge, 2010). The study employed mathematical notations to test for cross-sectional dependence using Pesaran CD (2004) and Yamagata (2008), expressed as:

$$\text{CD}= \sqrt{\frac{2P}{X(X-1)}}\left(\sum_{i=1}^{X-1}\sum_{j=i+1}^{X} Dij\right) \Rightarrow Z(0,1)$$

The equation for measuring sample correlation of firm-level residuals (Dij) in i and j as follows, where P represents the time period and X represents the sample size:

$$P'ij = P'ji = \frac{\sum_{t=1}^{T} u_{it}u_{jt}}{\left(\sum_{t=1}^{T} u_{it}^2\right)^{1/2}\left(\sum_{t=1}^{T} u_{jt}^2\right)^{1/2}}$$

As the sample size (X) increases, counting the potential pairings (u_{it}, u_{jt})) also increases. So, it establishes cross-sectional independence of the null hypothesis as opposed to the alternative one of cross-sectional. In addition, we employed slope homogeneity to examine the causality of the panel, besides the attainment of the unit root test at the first difference (see Table 4) under IP, ADF, and PP estimators.

3.4 Panel cointegration tests

In this study, cointegration tests were conducted to verify the presence of long-term correlation among variables using residual-based tests and combined individual tests. The study utilized both Kao and Westerlund cointegration tests, and the validity of these methods was confirmed using the latter (Wooldridge, 2010; Baltagi, 2013; Cameron & Reivedi, 2013; Davidson & MacKinnon, 2004; Westerlund, 2005). We conducted Kao's (1999) ADF-type residual-based panel cointegration test assuming a homogenous cointegrating vector on the null hypothesis.

$$ADF \frac{{}^{t}TF + (\frac{\sqrt{6X\vartheta_q}}{2\vartheta_{0q}})}{\sqrt{(\frac{\vartheta_{0q}^2}{2\vartheta_q^2}) + (10\vartheta_{0q}^2)}}$$

Where $\vartheta_q^2 = \sum_{u\varepsilon} - \sum_{u\varepsilon}\sum_{\varepsilon}^{-1}, \vartheta_{0q}^2 = \Omega_u - \Omega_{u\varepsilon}\Omega_{\varepsilon}^{-1}, \Omega$ is measuring joint variability of variables within the cointegration regression of the t-statistic (ADF) in the TF. We used the Pedroni panel cointegration test due to its flexibility in dealing with heterogeneity in error terms, and spatial dependence of multiple independent variables. Pedroni test allows for heterogeneous intercepts and slope coefficients in the cross-sections. Seven test statistics are included for both intra-panel and inter-panel relationships. Pedroni design drives this notation as:

$$INVEST_{i,t} = \alpha_i + \kappa_{i,t} + \beta_{i,t}X_{Mi,t} + \varepsilon_{i,t}$$

Where:

i = 1,…..(X) is for each firm;

t = 1, …,(P) period.

α_i and $\kappa_{i,t}$ = Parameters (individual & trend effects).

$\kappa_{i,t} = 1$, residual

ε_i = error terms

The regressions assisted in estimating both the residuals and their stationarity. The Kao and Pedroni panel cointegration tests initially enforced collective factor restrictions in first differences, thus reducing the cointegration technique's power in the short term. In this view, the Westerlund panel estimation technique was introduced as a robustness check. The group mean statistics technique (VR) imposes a limited number of restrictions, making it suitable. Westerlund has an acceptable hypothesis that variables are cointegrated in some panels, as referred to in the alternative theory. Westerlund panel cointegration has a regression equation as follows:

$$VR = \sum_{i=1}^{X}\sum_{t=1}^{P} \hat{E}_{it}^{\,2}\, \hat{R}_i^{-1}$$

Where $\hat{E}_{it} = \sum_{j=1}^{t} \hat{e}_{ij,} = \sum_{t=1}^{T} \hat{e}_{it,}^{2}$ and $\hat{e}_{it}$ are the residuals from the panel-data regression model. The distribution of all test statistics after standardization, converges to X (0, 1). Next, we compute the predictor variables' long-term impact on the outcome variable.

3.5 Long-run estimation techniques

The long-run estimation of this study employed the FGLS and PCSE techniques to predict elasticities. These design techniques become suitable for efficient application as the period (P) is more than or equal to the cross-section of firms (X) and can also relatively display few observations per error co-variance with fewer inaccuracies. Hence, FGLS is suitable for addressing panel dataset structure like heterogeneity, serial correlation and dependence in this study. Besides, FGLS has a severe shortfall in underestimating standard errors within the finite samples and tends to exhibit weak analytical performance at known true error variance-covariance matrices. To mitigate the FGLS shortcomings, the study applied the PCSE of Beck & Katz (1995) as an efficient corrective technique for ordinary least squares. PCSE considers weighting the observations to correct autocorrelation and therefore performs better than the FGLS estimator. We employed the marginal effect on all explanatory variables to provide an easily and directly explicable explanation of coefficients in terms of the average probability effect of change in them.

4. Empirical Interpretations

4.1 Cross-section dependence test results

The test findings for cross-sectional dependence and homogeneity are shown in Table 3. The results indicated no evidence of spatial dependence. The findings present the outcomes of the cross-sectional dependence and homogeneity tests conducted on the study variables. The panel Pesaran's test is used to test for cross-sectional dependence among the variables. The test statistic is 9.562 with a p-value of 0.00, suggesting that there is significant cross-sectional dependence of the variables.

Table 3: Cross-sectional dependence and homogeneity results

Variable	**Statistic**	**p-value**
INVEST	18.88	0.00
IFRS	59.02	0.00
ROCE	59.24	0.00
CFW	4.39	0.00
SIZ	19.60	0.00
IFRSROCE	18.80	0.00
Panel Pesaran's test	9.562	0.00
Homogeneity tests (H_0: uniform slope coefficients)		
Test	**Statistics**	**p-value**
Delta tilde	0.945	0.345
Delta tilde adj	1.733	0.083

* 5% cross-sectional dependency and homogeneity tests of rejection

Homogeneity estimation tests the uniformity of slope coefficients across variables. The null hypothesis is that the slope coefficients are homogeneous across the variables. The results show two tests: delta tilde and delta tilde adj. The Delta tilde test achieved a value of 0.945 with a p-value of 0.345, suggesting that slope homogeneity is plausible. The Delta tilde adj test has a test statistic of 1.733 with a p-value of 0.083, indicating weak insufficient evidence to reject slope homogeneity.

Overall, the findings suggest cross-sectional dependence among the variables; however, the evidence for rejecting the null hypothesis of slope homogeneity is weak. Thus, while the assumption of homogeneous slope coefficients is generally valid, it's important to consider cross-sectional dependence in the analysis.

4.2 Panel unit root test

The panel unit root tests examine the time-invariant properties of the variables for stationarity on the restrictive cross-sectional assumptions (Levin et al., 2002). The results of the IPS, ADF, and PP tests are presented for each variable in both at-level and first-difference forms. For the variables in level form, the results show non-stationary, as their p-values are greater than the significance level of 0.05 in all three tests (IPS, ADF, & PP), except ROCE at IPS and ADF.

Table 4: Test results: Unit root

Variables	IPS		ADF		PP	
	Level	1st diff	Level	1st diff	level	1st diff
INVEST	1.51(0.93)	-9.38(0.00)*	59.93(0.26)	126.93(0.00)*	46.69(0.74)	145.47(0.00)*
IFRS	2.76(0.99)	-0.56(0.28)	16.14(1.00)	64.09(0.16)	15.48(1.00)	75.76(0.02)*
ROCE	-2.46(0.01)	-6.94(0.00)*	83.36(0.01)	158.05(0.00)*	86.76(0.03)	176.09(0.00)*
CFW	-0.71(0.23)	-6.53(0.00)*	70.41(0.06)	153.63(0.00)*	83.05(0.06)	176.09(0.00)*
SIZ	1.39(0.91)	-15.5(0.00)*	57.05(0.36)	197.04(0.00)*	62.87(0.19)	199.35(0.00)*
IFRSROCE	1.92(0.97)	-6.44(0.00)*	49.96(0.63)	158.55(0.00)*	41.13(0.90)	198.21(0.00)*

For the variables in first difference form, all variables are found to be stationary as their p-values are less than 0.05 in all three tests, except IFRS at IPS and ADF. Therefore, it is appropriate to use the first difference variables in the subsequent analysis to prevent spurious regression outcomes. The data permitted only the application of prime unit root calculation test.

Both the unit root test and cointegration regression were carried out between the study variables in terms of Kao 1999, Pedroni (2004), and Westerlund (2005) panel cointegration (see Table 5). The Kao panel cointegration test shows a statistic of 3.706 and a probability value of 0.0001, indicating that there is evidence of cointegration among the variables in the panel data, suggesting non-acceptance of the null hypothesis.

Table 5: Test results: panel cointegration

Description	Pedroni panel cointegration tests						
	Common AR coefficients (within-dimension)				Individual AR coefficients (between-dimension)		
	Panel v-statistics	Panel rho-statistics	Panel PP-statistics	Panel ADF-statistics	Group rho-statistic	Group PP-statistic	Group-ADF statistic
Statistic	-1.821(0.965)	5.894(1.000)	-5.613(0.000)*	-2.205(0.013)*	7.568(1.000)	-10.747(0.000)*	-5.630(0.000)*
Weighted	-2.803(0.997)	5.255(1.000)	-7.094(0.000)*	-4.063(0.000)*			
	Kao panel cointegration test				Westerlund test for cointegration		
Statistic	3.707	Prob	0.0001		Variance ratio =2.306, Prob. = 0.010*		

Bracket figures explain probability amounts, and *denotes a 5% significance level

The Pedroni panel cointegration tests is of two different statistics in common and individual dimensions. The results of the Pedroni test affirm only six out of eleven outcomes of within- and between-dimension statistics as cointegrated. Both outcomes are significant but negative, indicating that there is cointegration exhibiting in the variables of the firms. The panel v-statistics and panel rho-statistics for common AR coefficients are not significant, indicating weak evidence of cointegration. The Westerlund test for cointegration also affirms a variance ratio statistic of 2.306 and a probability value of 0.010, which supports the evidence of cointegration among the variables (see Table 5). Overall, all the tests indicate strong panel data association format of the results, signifying a long-term relationship between core capital allocation decision and the accounting information variables used under IFRS.

4.3 Long-run results

The FGLS and PCSE regression results (see Table 6) show the relationship between the core capital allocation and IFRS, ROCE, CFW, SIZ, and IFRSROCE. The results show that ROCE and IFRSROCE has no remarkable influence on the core capital allocation, as indicated by the high p-values in support of H5, but not H2. These findings are inconsistent with Khan et al. (2021), O'Connel et al. (2019) and Houcine (2017). However, the IFRS, CFW, and SIZ variables have a statistically significant effect on core capital allocation (see Table 6, $p<0.001$). H1, H3, and H4 are verified under both FGLS and PCSE estimators and in support of Amissah et al (2020), Sun, (2005) and Beatty et al. (2010). This result implies that earnings and larger firm size may induce resource improvement, which will enhance the core capital allocation of firms in the long-run. This finding supports the agency and institutional theories in financial reporting quality and capital allocation decisions in support with Chen et al. 2013 study in H4 support. Wald chi2 statistic is higher for the PCSE estimator, indicating that it depicts a better fit for the data.

Table 6: FGLS and PCSE estimators results (Dep. variable: INVEST)

Variable	FGLS		PCSE	
	Marginal effect (dy/dx)	P-value	Marginal effect dy/dx	P-value
IFRS	0.501	0.066	0.501	0.001
ROCE	-0.034	0.841	-0.034	0.837
CFW	-2.107	0.000	-2.107	0.000
SIZ	9.936	0.000	9.936	0.000
IFRSROCE	-0.114	0.838	-0.114	0.834
Constant	-558405.5	0.000	-558405.5	0.000
Wald chi^2	111.72		191.26	
R-squared			0.293	

Author, 2025

4.4 Causality analysis

Pooled Mean Group (PMG) estimation can be used as a causality test for ascertaining any causal association between core capital allocation and IFRS adoption for both varying periods. The PMG estimator is a statistical approach utilized to estimate the relationships between variables in both short and long-term seasons. Additionally, it accounts for the cross-sectional dependence and heterogeneity present in the data. Therefore, causality test serves as resilient estimation

for establishing such associations in the study variables. The PMG estimator adjusts for individual heterogeneity when estimating the parameters for each firm, thus accounting for simultaneous correlation among the sample group.

Table 7 depicts the results of PMG (SR and LR causality) and FMOLS long-run results for the study variables. Long-run bidirectional causation results show that from IFRS and ROCE to core capital allocation decision, and from free cash flow to ROCE. The results of FMOLS show that except IFRS, all other variables correspondingly explain core capital allocation at negatively significant levels of 1%, suggesting a reduction in core capital allocation, except firm size (SIZ) of a positive effect in support of H4. The interest variables of ROCE and IFRSROCE achieved a negative relationship with core capital allocation in support of H2 and H5 respectively. These findings do not support the information asymmetry theory of quality accounting information under IFRS adoption in relation to core capital allocation decision.

Table 7: PMG results of causality and Fully Modified OLS (FMOLS) results

PMG			**Dep: INVEST (Panel FMOLS)**			
SR causality	LR causality		Variable		dy/dx	P-value
IFRS →INVEST	INVEST↔ IFRS		IFRS		0.501	0.117
CFW↔ INVEST	INVEST↔ ROCE		ROCE		-0.034	0.000
IFRSROCE →INVEST	CFW→ INVEST		CFW		-2.107	0.000
CFW→ IFRS	ROCE→ IFRS		SIZ		9.936	0.000
ROCE →IFRS	CFW→ IFRS		IFRSROCE		-0.114	0.000
SIZ→ INVEST	IFRS→ ROCE		Adj R-square			0.879
	ROCE↔ CFW		LR variance			2.39E+10
	ROCE →SIZ					
	CFW→ SIZ					
	IFRSROCE→ SIZ					

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However, there are unidirectional causation results, such as from free cash flow to core capital allocation and IFRS, from return on capital employed to IFRS, from firm size and free cash flow to IFRS, and from IFRS to return on capital employed in the long run. Similarly, short-run causality tests reveal a bidirectional effect between free cash flow and core capital allocation and achieving unidirectional causation from the IFRS combined effect of return on capital employed and the firm's size, free cash flow to core capital allocation, and free cash flow and ROCE IFRS.

The findings of two-way causality in the long run implied that the return on capital employed and IFRS application symbolically explain the core capital allocation of the firm's understudy. Just as in the short run, free cash flow and core capital allocation occur at the same time. The results of bidirectional relationships for the short run (CFW↔INVEST) support the hypothesis that IFRS adoption would enhance core capital allocation, which in turn promotes the realization of free cash flow to augment the earnings capacity of the firms. The long-run bidirectional results give reasonable assurance of sustaining core capital allocation decisions for the firm's growth. This result paves the way for positively improving efficient core capital allocation decisions, improving shareholders' wealth, efficiency in IFRS adoption, and increased free cash flow earnings to sustain the growth trajectory of their business strategies.

The result of FMOLS marginally confirms the extent to which independent variables contribute in explaining core capital allocation in the long run. From Table 7, the results reveal that, except IFRS, all other variables statistically explain the core capital allocation at a 1% significant level. However, instantaneous changes in return on capital employed, free cash flow, and the combined effect of IFRS and return on capital employed (IFRSROCE) have a negative probability outcome on core capital allocation decision in the long run. FMOLS achieves an adjusted r-squared of 87.9% and realistically measures a low long-run variance of 2.39E+10 (see Table 7).

5. Discussion and concluding remarks

This paper explores to understand how the implementation of IFRS influence the core capital allocation of GSE listed firms from 2013 to 2023. The study employs FGLS and PCSE estimators to assess the sensitivity of variables, alongside the PMG causality technique to analyze causal relationships. Cross-sectional dependence, slope homogeneity, and unit root tests were conducted to select appropriate long-term estimation techniques. Panel cointegration tests (Kao, Pedroni, and Westerlund) indicated that the variables are integrated, suggesting long-term relationships among them. Regarding the finding, the study affirm evidence that IFRS adoption, free cash flow and firm size have a significantly positive influence on the core capital allocation, suggesting an indicative of strong value relevance to explain prioritization projects with high returns, facilitating more informed capital allocation, optimal capital allocation, judicious capital

allocation to core business segments and accrued earnings to implement risk-taking strategies (Amissah et al., 2020; Beatty et al., 2010; Agyei-Mensah, 2016). However, return on capital employed and combined effect of IFRS and return on capital employed do not affirm evidence to support the core capital allocation decision of IFRS adoption in Ghana listed firms in contrast with Yardakul et al. (2022) and Houcine (2017). IFRS adoption is recognized for improving financial reporting quality, which directly affects core capital allocation decisions. The short-term causality analysis found directional causality from IFRS to core capital allocation, from free cash flow to IFRS, and from return on capital employed to IFRS. Over time, one-way causality was noted from free cash flow to core capital allocation and ROCE to IFRS, among other relationships. Interestingly, bidirectional causality emerged between core capital allocation and IFRS, as well as between ROCE and free cash flow in the short term, highlighting the dynamic interactions between financial indicators and capital allocation outcomes. The results imply that efficient core capital allocation enhances the quality of IFRS implementation, which in turn drives sustainable returns for shareholders. Free cash flow also plays a vital role in short-term core capital allocation decisions. The result on free cash flow showed a negative relationship with core capital allocation efficiency at a 1% significance level. This study demonstrates unique contribution to agency and institution theories within the integration of financial reporting quality of IFRS adoption to the core capital allocation (Amissah et al., 2020).

Based on these findings, we conclude that the switch to IFRS policy of accounting presentation does not support core capital allocation in relation to return on capital employed and combined effect of IFRSROCE, while the same condition affirms positive effect in free cash flow, IFRS switch, and large firm size on the core capital allocation efficiency.

5.1 Policy implications and avenue for further study

This study underscores the importance of IFRS adoption in shaping firms' core capital allocation strategies and emphasizes the role of reliable financial reporting in guiding investor behavior. It also highlights the relevance of agency and institutional theories in explaining how firms leverage value relevant of accounting information for efficient core capital allocation. From a practical standpoint, the findings inform business performance strategies tied to core capital allocation under IFRS.

Nevertheless, common problem in such kinds of panel studies is insufficient data to perform insightful analysis. So, to mitigate this problem, future research could employ adequate dataset to incorporate statistical methodology design to deal with the core capital allocation efficiency and IFRS adoption in the Africa settings. Given the limitations of cross-sectional design, longitudinal studies using Driscoll and Kraay's estimation techniques could provide more robust findings to affirm IFRS influence on the core capital allocation. Moreover, future research could focus on both adopted and non-adopted firms to introduce the application of the difference-and-indifference estimation technique for policy directions.

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