RESEARCH ARTICLE:

The Effect of Innate and Discretionary Components of Earnings Quality Properties on Stock Return Volatility in South Africa

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Abstract

Previous studies reported that the quality of financial reports, measured by earnings quality properties, is associated with changes in stock return volatility (SRV). However, the properties of earnings quality in previous studies have been examined without separating them into their innate and discretionary components. This study examined the effect of innate and discretionary components of earnings quality properties on the SRV of companies listed in the Johannesburg Stock Exchange (JSE) in South Africa (SA). Using Multilevel linear regression to analyse a sample of 800 firm-year observations, obtained from 80 non-financial companies for the period 2009-2018, the study found that the innate component of each earnings quality property has a greater impact on the SRV (measured by idiosyncratic volatility) than the discretionary component. These findings imply that, in SA, the stock return volatility is mostly driven by the earnings quality properties that emanate from the operating environment and the business model of the companies. The findings may assist investors in the factors to consider when assessing the risks of their investments. In addition, the findings could be useful to regulators in SA in the review or formulation of policies that may make the business environment more stable as these policies influence the operating environment of the companies.

Keywords*: earnings quality; stock return; JSE listed companies; South Africa*

Introduction

The reasons that explain the volatility of stock return at the firm's level have always been of great interest to investors. In the past, investors were only considering the systematic risks in their investment decisions although idiosyncratic risk is the most predominant in explaining stock return volatility (Domingues, 2016). Campbel *et al*. (2001) reported that, in the US market, stock return volatility increased between 1962 and 1997. But surprisingly, the authors found that the increase was not attributable to market risks but to idiosyncratic risks. Since the publication of these findings, idiosyncratic risks have received considerable attention in accounting and finance research. Several studies have investigated the reasons for the upward trend in idiosyncratic volatility. Possible reasons include the increase in market competition, increase in leverage, the firm's age and size, and the financial reporting quality (Campbell *et al*., 2001; Liu and Iorio, 2006; Irvine and Pontiff, 2009; Rajgopal and Venkatachalam, 2011). Rajgopal and Venkatachalam (2011) reported that the increase in idiosyncratic volatility in the US context was related to the deterioration of earnings quality (measured by accrual quality); in fact, the earnings numbers they used did not convey accurate firm-specific information. A similar finding was reached by Domingues (2016) using UK stock market data. In the South African context, a study by Fonou-Dombeu *et al*. (2022) provided evidence of the association between various properties of earnings quality and stock return volatility. However, none of the related studies have separated the properties of earnings quality into its innate and discretionary parts

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and investigated how each component affects the stock return volatility of companies. Innate earnings qualities properties refer to the part of earnings that is affected by the business model of the firm. The discretionary earnings quality properties relate to a portion of earnings that is influenced by the manager's choice of accounting policy.

This study extended the work by Fonou-Dombeu *et al*. (2022) and partitioned each property of earnings quality into its innate and discretionary components and examined the effect of each component on the stock return volatility of JSE-listed companies. Such a partition is important because the separation of each earnings property into innate and discretionary parts reduces errors in the measurement of earnings quality (Athanasakou, 2016). In addition, Athanasakou (2016) noted that the separation of earnings quality into innate and discretionary components allows for consideration of all possible factors that may influence earnings quality. The partition provides information on how earnings quality influences the volatility of stock return, depending on its sources (innate or discretionary sources). Cohen (2008) documented that, studies investigating the link between earnings quality and accounting outcomes such as cost of equity capital, stock return, etc., have produced inadequate results since they failed to control the innate factors such as market competition and growth. The authors presented evidence that accounting quality is influenced by both innate and discretionary factors.

Therefore, this paper complements prior studies and contributes to knowledge by showing how managers' actions and factors outside the control of the managers influence the volatility of stock return of JSE-listed companies in South Africa. Specifically, this study examined the effect of innate and discretionary components of earnings quality properties (EQP), including accrual quality, earnings persistence, earnings predictability, and earnings smoothness on the stock return volatility of JSE-listed companies. The stock return volatility is proxied by idiosyncratic volatility because the focus of the study is on the firm's private information and not on market information. International studies reported that idiosyncratic volatility predominantly explains the portion of stock return volatility that is related to a firm's specific information (Rajgopal and Venkatachalam, 2008. In South Africa, Fonou-Dombeu *et al*. (2022) found that the variation in stock return volatility is explained by certain firm's characteristics such as accounting quality. Therefore, idiosyncratic volatility is affected by firm-specific risks and plays an essential role in the variation of stock return volatility in the South African capital market.

The rest of the paper is organized as follows. Section 2 presents the theoretical review and the hypotheses of the study. Section 3 describes the methodology used to conduct the study including the sample and data analysis technique, the measurement of the variables of the study, models used to test the hypotheses, and descriptive statistics. Section 4 presents the empirical analysis and discussion. Section 5 concludes the study.

Literature Review

The interaction between accounting information and aspects of capital market such as share price, and stock return volatility, is a continuous debate in academia. Different theories, such as the capital need theory and the decision usefulness theory, have been used to explain accounting information and its effect on capital markets. The capital needs theory has been used to assess the changes in the quality of the accounting information provided to the market. It explains the reasons why companies choose to provide high-quality accounting information to the market (Choi, 1973). The theory states that firms with high-quality information easily obtain financing (both debt and equity) in the market since the investors believe that these companies are less risky (Shehata, 2014). Firms communicate information to the market to assist investors in investment decisions (Choi, 1973). For instance, a company may communicate that it has achieved stable earnings over time; this information may attract risk-averse investors since they prefer to transact with firms that display stable earnings. Shehata (2014) asserted that high-quality financial reports allow capital market participants to predict accurately the prospects of firms. Furthermore, it is assumed that a firm can attract capital at a lower cost if it presents high-quality information to the market. Moreover, transparency in financial reporting increases with the delivery of high-quality reports; this in turn reduces information asymmetry between stakeholders and lowers a company's cost of equity capital (Eliwa *et al*., 2016; Yeh *et al*., 2014). Furthermore, the accurate determination of share prices depends on the quality of accounting information. Subsequently, because investors are interested in companies with high share prices due to their high returns, companies with high-quality accounting information may raise capital easily. Like capital needs theory, the decision usefulness theory also emphasizes the quality of accounting information. The decision usefulness theory is based on the International Accounting Standards Board (IASB) and the Financial Accounting Standard Board (FASB) conceptual frameworks. These frameworks state the purpose of financial reports as the provision of useful information about the financial position, performance, and changes in the financial position of an entity, to investors, lenders, and other users (IFRS, 2010).

Accounting information is useful if it is relevant and reliable. IFRS (2010) emphasizes that such information should facilitate the decision-making process of the users. Accounting information is used for different purposes and is useful if it allows users to achieve their goals. For instance, useful information may allow investors to accurately assess the risk and return on their investments, to decide whether to invest or disinvest in a particular entity. Furthermore, information is useful if its communication to the market leads to reactions from users (Fonou-Dombeu *et al*., 2022). Such reactions can be observed through changes in security prices or trade volumes. Therefore, it can be concluded that the provision of useful accounting information facilitates the efficient allocation of resources in the capital market. The decision usefulness theory further stresses that useful accounting information supplies knowledge about the past performance of a company and allows for an accurate forecast of its future performance. This highlights the two main roles of financial reporting, namely, stewardship and usefulness (Sodan, 2015). The stewardship focuses on management's accountability and diligence in the preparation of financial statements; such responsibility by management is assessed using a company's past information. Its usefulness lies in the use of accounting information to accurately predict future economic events. These two roles of financial reporting are aligned with the information needs of investors and other users. In a nutshell, capital need theory and decision usefulness theory stress the relevance of accounting information to capital market participants. While the capital needs theory provides reasons for firms to produce high-quality information for users, the decision usefulness theory focuses on the purpose of accounting information. High-quality accounting information reduces stock return volatility at the firm level (Fonou-Dombeu *et al*., 2022). Corollary, the deterioration in earnings quality leads to an increase in stock return volatility (Rajgopal and Venkatachalam, 2011).

The separation of each earnings quality into innate and discretionary components is derived from the fact that accounting information is affected by the business environment in which the firm operates as well as by the accounting choice of the firm (Athanasakou, 2016; Dechow and Dichev, 2002). Fields *et al*. (2001) defined accounting choice as a decision that affects the output of an accounting system. Therefore, accounting choice is related to the actions of the managers, since they are the ones who make decisions in a firm. On the one hand, the discretionary component of earnings quality property refers to the influence of a manager's actions on the output of the accounting system employed by the firm. Such actions can be the choice of inventory policy, the exercise of judgment and estimate in the application of accounting policy, and the intentional and unintentional errors made in the implementation of the accounting policies (Francis *et al*., 2004). On the other hand, the innate component of earnings quality property is linked to the firm's fundamental characteristics, business activity, and economic environment; as such, managers have no control over these factors. These factors include the size of the firm, the volatility of operations, the capital intensity, the length of the operating cycle, the industry competition, and the firm's maturity stage (Francis *et al*., 2004, Athanasakou, 2016). Siladjaja (2020) examined the impact of the innate portion of accrual quality on the future market value of the firms and found that there is a positive relationship between these two variables. This finding suggests that a high innate quality is an indication that the firm's level of accruals is low, which leads to high earnings quality, with the subsequent increase in the market value of the firm. The author concluded that high accrual quality provided useful information to investors about a firm's reported earnings that is used to make predictions of the prospects of the company.

Razaee and Tuo (2019) examined the link between sustainable disclosure and innate and discretionary earnings quality. Sustainable disclosure is measured in terms of whether a firm issues a sustainability report or follows a Global Reporting Initiative (GRI) guideline to communicate its non-financial information to stakeholders. Innate and discretionary earnings quality was measured using the model developed by Francis *et al*. (2005). The study revealed a positive association between sustainable disclosure and innate earnings quality and a negative association between sustainable disclosure and discretionary earnings quality. This suggests that firms with high sustainable disclosure practices display an increase in innate earnings quality but a low discretionary earnings quality. Therefore, high sustainability disclosure does not alleviate the adverse effect of managerial actions on earnings quality. In examining the drivers of earnings quality, the study of Dichev *et al*. (2013) found that earnings quality is mostly driven by innate factors rather than discretionary factors. This suggests that the firm's business model and operating environment have a greater impact on earnings quality than the accounting standards applied by management. Using the modified Jones model as a proxy for discretional accrual, the study of Dermerjian *et al*. (2013) also found that discretionary factors are related to earnings quality.

Both the innate and discretionary components of earnings quality properties can lead to the improvement and/or deterioration of earnings quality (Herly, 2015). Consequently, both components may affect the economic outcomes of the company's operational activities, such as the share price, stock return, cost of equity capital, and so on. For

instance, the studies by Francis *et al*. (2005) and Eliwa *et al*. (2016) showed that the innate component of earnings quality property impacts the equity capital more than the discretionary components, using the US and UK data, respectively. Similarly, the Australian data was used to find that the innate earnings quality property is the main driver of the link between information risk and cost of equity capital (Gray *et al*., 2009). Since innate earnings quality property is related to the uncertainty in the firm's economic environment, it is expected that the innate component of earnings quality properties impacts the stock return volatility of the company more than the discretionary component. Therefore, the following hypotheses were formulated:

H_1: *Innate accrual quality impacts the stock return volatility more than discretionary accrual quality*.

H_2: *Innate earnings persistence impacts the stock return volatility more than discretionary earnings persistence*.

H_3: *Innate earnings predictability impacts the stock return volatility more than discretionary earnings predictability*.

H_4: *Innate earnings smoothness impacts the stock return volatility more than discretionary earnings smoothness*.

Methodology

The methodology applied in the study is discussed in terms of the sample, data analysis techniques, variables measurements, and descriptive statistics of the variables of the study. The sample consisted of non-financial companies listed in the JSE. As in Domingues (2016), financial companies are excluded from the sample because they are well-regulated industries with accounting rules that differ from that of other industries; as such the assessment of their earnings quality is certainly different from that of other industries. The initial sample consists of 225 non-financial companies. The companies included in the final sample were chosen based on the following conditions: (1) The financial statements were available for 10 years from 2009 to 2018 and (2) The financial statements displayed the accounting information needed to compute the variables of the study. The financial statements of these companies were obtained from the IRESS Research Domain database. The final sample has 800 observations obtained from 80 companies for the period from 2009 to 2018. The data were retrieved from the financial statements of these companies to compute the variables of the study. All the variables of the study were winsorized to the first and 99th percentile to alleviate the effect of extreme value. Multilevel linear regression (MLR) was used to analyse the data. MLR is a more powerful estimating technique for the analysis of longitudinal data compared to traditional estimating models such as ordinary least squares (Field, 2013). MLR does not require the assumption of autocorrelation (Field, 2013). The assumptions of regression analysis were checked, including homoscedasticity, multi-collinearity, normality, and linearity. The SPSS statistic software version 27 was employed to obtain all statistics.

The variables of the study were measured following previous studies. These variables and their measurements are summarised in Table 1. In Equation 1 of Table 1, $RET_{i,t}$ is the monthly return for the firm *i* on the month *t*; Rm_t is the market return for the month *t*. In Equation 2 in Table 1, ΔWC_t is the change in the working capital in the year *t* ; CFO_t the cash flow from the operation in the year *t*; $\Delta SALES_t$ is the change in sales in the year t ; PPE_t is the property, plant, and equipment in the year t ; μ the prediction error, i,t the firm and year, respectively. In Equation 3 in Table 1, Earnings are income before extraordinary items. In Equations 2 and 3 of Table 1, all variables are scaled by total assets at the beginning of year t.

As shown in Table 1, the stock return volatility is proxied by idiosyncratic volatility. Idiosyncratic volatility was chosen as a proxy of stock return volatility because Zhang *et al*. (2016) argued that idiosyncratic volatility is a good measure of the company's stock return volatility as it can be used in an improved or worse information environment, unlike the asynchronicity which can only be used in an improved information environment. Worse information environments are characterised by firms with high levels of liquidity and illiquidity, high price delay, and a high probability of informed trading and bid-ask spread (Li *et al*., 2014). The natural logarithm of IDIO was used to conduct the analysis.

Table 1: Measurement of the variables

Variables	Variable symbol	Measurements	References
Stock return volatility			
Idiosyncratic volatility	IDIO	$IDIO = \sigma^2(\mu_{i,t})$ obtained from the regression Equation 1 $RET_{i,t} = \alpha + \beta Rm_t + \mu_{i,t}$ (1)	Kelly (2014) and Wang *et al*. (2016)
Earnings quality properties			
Accrual quality	AQ	$AQ_{i,t} = \sigma(\mu)_{i,t}$ obtained from the regression Equation 2 $\Delta WC_{i,t} = \beta_0 + \beta_1 CFO_{i,t-1} + \beta_2 CFO_{i,t} + \beta_3 CFO_{i,t+1} + \Delta SALES_{i,t} + PPE_{i,t} + \mu_t$ (2)	McNichols (2002) and Francis *et al*. (2008)
Earnings persistence	PERSISTENCE	PERSISTENCE= β_1 of the regression Equation 3 $Earnings_{i,t} = \beta_0 + \beta_1 Earnings_{i,t-1} + \mu_{i,t}$ (3)	Dechow *et al*. (2010)
Earnings predictability	PREDICT	$PREDICT_{i,t} = \sqrt{\sigma^2}(\mu_{i,t})$ obtained from regression equation 3	Perotti and Wagenhofer (2014)
Earnings smoothness	SMOOTHNESS	$EM_{i,t} = \sigma Earnings_{i,t} / \sigma CFO_{i,t}$ (4)	Perotti and Wagenhoffer (2014)
Control variables			
Size	SIZE	SIZE= Log total assets	
Leverage	LEVER	LEVER= total debts/total assets	Wang *et al*. (2016) and Ahmed and Hla (2019)
Growth	GROWTH	GROWTH= Market value of equity/book value of equity.	Wang et al. (2016)
Cash flow volatility	CFV	CFV= Variance of cash flow from operation scaled by total assets, calculated over a rolling five-year window	Rajgopal and Venkatachalam (2011)
Operating performance	OPF	OPF= earnings before extraordinary/total assets	Dutt and Jenner (2013)
Stock return performance	SRP	SRP= Annual buy and hold returns	Rajgopal and Venkatachalam (2011)

Source: Authors' compilation

As indicated in Table 1, the earnings quality properties (EQP) examined are accrual quality, earnings persistence, earnings predictability, and earnings smoothness. The four properties were chosen because they provide useful information to the users. Accrual quality, earnings persistence, earnings predictability, and earnings smoothness are accounting-based properties of earnings quality (Francis *et al*., 2004); they capture specific objectives of earnings and are based on accounting information (Francis *et al*., 2004). Furthermore, Dechow *et al*. (2010) and Gutierez and Rodriguez (2017) reported that earnings properties are unrelated and that it would be useful to combine several properties to evaluate a firm's reported earnings. These properties are used later to compute their respective innate and discretionary portions.

The control variables are variables that were found in previous studies to be related to the stock return volatility and include: the size, leverage, growth, cash flow volatility, operating performance, and stock return performance. All the variables of the study presented in Table 1 were measured following the literature.

Models used for hypotheses testing

The testing of hypotheses H_1, H_2, H_3, and H_4 requires the partition of each earnings quality property into its innate and discretionary components. This was achieved with a model developed by Francis *et al*. (2005) in Equation 5.

$$EQP_{i,t} = \beta_{0,i} + \beta_{1,i} size_{i,t} + \beta_{2,i}\sigma(CFO)_{i,t} + \beta_{3,i}\sigma(sales)_{i,t} + \beta_{4,i} opercycle_{i,t} + \beta_{5,i} NegEarn_{i,t} + \beta_{6,i} CI_{i,t} + \mu_{i,t} \quad (5)$$

where $EQP_{i,t}$ represents the earnings quality properties including accrual quality, persistence, predictability, and earnings smoothness (as defined in Table 1); $\sigma(CFO)_{i,t}$ the standard deviation of the cash flow from the firms'

operations, calculated over a rolling five-year period; $\sigma(Sales)_{i,t}$ the standard deviation of sales, calculated over rolling five years period; $Opercycle_{i,t}$ the operating cycle, computed as the log of the sum of account receivables days and inventory days; CI the capital intensity; $NegEarn_{i,t}$ the negative earnings; $\mu_{i,t}$ the residual, which measures the discretionary component of earnings quality property and i,t the firm and year, respectively. The predicted or estimated values, obtained from Equation 5, represent the innate component of earnings quality property. Equation 6 is used to test the effect of innate and discretionary components of earnings quality properties on the stock return volatility of JSE-listed companies.

$$SRV_{i,t+1} = \beta_0 + \beta_1 InnateEQP_{i,t} + \beta_2 DiscretionaryEQP_{i,t} + \beta_3 Size_{i,t} + \beta_4 Leverage_{i,t} + \beta_5 GROWTH_{i,t} + \beta_6 CFV_{i,t} + \beta_7 OPF + \beta_8 SRP_{i,t} + \mu_{i,t} \quad (6)$$

where, *SRV* is the stock return volatility measured by idiosyncratic volatility (IDIO); *InnateEQP* is either the innate accrual quality, innate persistence, innate predictability, or innate smoothness; *DiscretionnaryEQP* is either the discretionary accrual quality, discretionary persistence, discretionary predictability or discretionary smoothness; *GROWTH* is the growth rate in revenue; *CFV* the cash flow volatility; OPF the operating performance; SRP the stock return performance. The size, leverage, growth, cash flow volatility, and operating and stock return performance are control variables. Equation 6 is used to test the hypotheses H_1 to H_4. Equation 6 is estimated using multilevel linear regression.

Descriptive statistics

The descriptive statistics of the variables used in the study are presented in Table 2. Table 2 shows a mean value of 0.0089 and a standard deviation of 0.0126 for IDIO, indicating a high variation in IDIO. The descriptive statistics of earnings quality properties shown in Table 2 that accrual quality (AQ) has a mean value of 0.0725 and a standard deviation of 0.0563. The fact that the standard deviation is low compared to the mean indicates that there is a low variability in the sample data for AQ. For earnings persistence (PERSISTENCE), the mean and standard deviation are 0.5814 and 0.5782, respectively, in Table 2; this indicates that average earnings seem to be persistent in South African companies. Concerning earnings predictability (PREDICTABILITY), the mean and standard deviation in Table 2 is 0.3746 and 0.3020, respectively; this implies that on average, earnings are more predictable in South African companies, as indicated by a low value of the mean for PREDICTABILITY. It is believed that more persistent earnings are more predictable. Finally, the mean and standard deviation of 1.2715 and 1.1915, respectively, are shown for the smoothness property in Table 2; these findings suggest that, on average, there is more earnings smoothness practice in South African companies. In other words, South African companies adjust reported earnings to avoid too many fluctuations in earnings.

Table 2: Descriptive statistics on SRV, EQP, and control variables

Variables	N	Minimum	Maximum	Mean	Std. Deviation
IDIO	800	0.0004	0.0665	0.0089	0.0126
AQ	800	0.0015	0.2752	0.0725	0.0563
PERSISTENCE	800	-1.3282	2.6840	0.5814	0.5782
PREDICTABILITY	800	0.000038	0.9998	0.3746	0.3020
SMOOTHNESS	800	0.0283	6.7816	1.27150	1.1915
SIZE	800	10.39	19.9	15.6269	1.8898
LEVERAGE	800	0.01	1.23	0.4995	0.1946
GROWTH	800	0.01	35.4	6.8044	7.3605
CFV	800	0.0085	0.2225	0.0543	0.0393
OPF	800	-0.31	0.59	0.1104	0.1029
SRP	800	-1.76	1.26	0.0297	0.4005
Valid N (listwise)	800				

See Table 1 for the definition of variables
Source: Authors' compilation

Concerning the control variables, Table 2 depicts that the mean and standard deviation for SIZE are 15.6269 and 1.8898, respectively, whereas, LEVERAGE values are 0.4995 and 0.19464 for the mean and standard deviation, respectively. The SIZE and LEVERAGE display a low variability in the data. Similarly, it is shown in Table 2 that the growth (GROWTH) displays a high variation in the data due to the high mean and standard deviation of 6.8044 and 7.3605, respectively. On average, the companies in the sample have a cash flow volatility (CFV) of 0.0543, an operating performance (OPF) of 0.1101, and a stock return performance (SRP) of 0.0297. For CFV and OPF, there is a small variation in the data as displayed by the low values of their standard deviation compared to their mean, whereas, the SRP shows a high variation in the data.

Empirical Analysis and Discussion

In this section, the results of correlation and regression analyses are presented and discussed. The correlation between the stock return volatility (measured by IDIO) and the innate and discretionary components of each earnings quality property is reported in Table 3.

Table 3 shows a largely negative and statistically significant correlation between IDIO and the innate and discretionary components of earnings quality properties. Specifically, IDIO correlates negatively with innate and discretionary AQ, innate and discretionary persistence, and innate and discretionary predictability. However, IDIO displays a positive correlation with innate and discretionary smoothness. The insignificant correlation is between IDIO and discretionary predictability and discretionary smoothness. These results suggest that there is an association between IDIO and both the innate and discretionary components of earnings quality properties. In most cases, the association is indirect due to the negative correlation.

The exception applies to innate and discretionary smoothness; the components of this earnings quality property exhibit a direct association with IDIO.

Table 3: Correlation between stock return volatility, and innate and discretionary earnings quality

	IDIO	Innate AQ	DISCRE AQ	Innate PERSISTENCE	DISCRE PERSISTENCE	Innate PREDICT	DISCRE PREDICT	Innate SMOOTHNESS	DISCRE SMOOTHNESS
IDIO	1	-0.007	-.154**	-.301**	-.074*	-.298**	-0.066	.209**	0.031
Innate AQ	-0.007**	1	-0.008	-.330**	-0.001	-0.035	-0.003	-.441**	-0.052
DISCRE AQ	-.154**	-0.008	1	0.018	.119**	0.010	.093**	-0.007	-.124**
Innate PERSISTENCE	-.301**	-.330**	0.018	1	0.006	.928**	0.005	-.169**	-0.044
DISCRE PERSISTENCE	-.074*	-0.001	.119**	0.006	1	-0.001	.642**	0.002	-.101**
Innate PREDICT	-.298**	-0.035	0.010	.928**	-0.001	1	0.000	-.370**	-.083*
DISCRE PREDICT	-0.066	-0.003	.093**	0.005	.642**	0.000	1	0.000	-.096**
Innate SMOOTHNESS	.209**	-.441**	-0.007	-.169**	0.002	-.370**	0.000	1	0.016
DISCRE SMOOTHNESS	0.031	-0.052	-.124**	-0.044	-.101**	-.083*	-.096**	0.016	1

Source: Authors' compilation

** denote correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed). The sample consists of 800 firms' year observations for the period 2009-2018. Innate AQ is an innate component of accrual quality. DISCRE AQ is a discretionary component of accrual quality. Innate Persistence and DISCRE Persistence are the innate and discretionary components of earnings persistence, respectively. Innate PREDICT is the innate component of earnings predictability and DISCRE PREDICT is the discretionary component of earnings predictability. Innate and DISCRE SMOOTHNESS are the innate and discretionary components of earnings smoothness, respectively. The description of the rest of the variables is provided in Table 1.

From the results in Table 2 and the above discussion, three inferences can be drawn:

First, the correlation coefficients amongst each component of earnings EQP is low, indicating that each component of EQP is distinct; this consistent with prior studies (Fonou-Dombeu and Nomlala, 2023; Perotti and Wagenhofer,

2014) and Dechow *et al*. (2010) that argued that each EQP captures a specific aspect of the firm accounting earnings.

Secondly, the significant correlation between stock return and innate and discretionary components of some EQP (accrual, earnings persistence, and earning predictability) illustrates that these variables are related to each other; More specifically, it is a preliminary indication that both management reporting choices and firm's characteristics and operational environment can cause volatility of stock returns.

Thirdly, the correlation between stock return and each innate and discretion EQP is generally negative, except for earnings smoothness.

Regression Analysis Results and Discussion

Table 4 displays the outputs of the estimation of Equation (6) which was used to test hypotheses 1 to 4. Recall that Equation (6) tests the effect of the innate and the discretionary portion of each earnings quality property under investigation and each property is added individually to Equation (6) as explained in the methodology section. The discussion of the results of H1 to H4 is provided below.

Results of testing H_1

The first column of Table 4 presents the results of the regression of stock return volatility on innate and discretionary AQ. Column 1 of Table 4 shows that the coefficients of innate and discretionary AQ are negative, with respective values of -28.341 and -1.6129. These coefficients are different from zero as illustrated by the t-statistics of -6.973 for innate AQ and -2.478 for discretionary AQ.

These results indicate that the innate component of accrual quality has a substantial effect on the volatility of stock return than the discretionary component of accrual quality. Furthermore, companies with poor earnings quality (high value of AQ) due to innate factors, exhibit a lower stock return volatility than the companies with poor earnings quality emanating from accounting discretion. This indicates that the discretionary component of accrual quality contributes more to the volatility of stock return relative to the innate component for firms with poor earnings quality. This finding is aligned with the study of Dermerjian *et al*. (2013) who reported that through the application of accounting standards and judgment, management influences a firm's reported earnings quality, and Simpson (2013) who found that earnings are of poor quality during high market sentiment since it is during these periods that managers have a high tendency to use accruals to opportunistically alter the financial report.

The overall results suggest that the exercise of discretion by managers in the compilation of financial statements influences the volatility of stock returns. The results also suggest that factors beyond the control of the firms' manager, that is factors related to the firm operational environment contribute as well to the volatility of stock returns. Nevertheless, for accrual quality as a property of earnings, innate factors have a greater effect on SRV than discretionary factors.

Results of testing H_2

The results of testing hypothesis H_2 are displayed in Table 4 Column 2 which shows that the estimated coefficient of the innate persistence of -1.1597, is eleven times higher than the coefficient of discretionary persistence of -0.1053. In addition, the association is considerably significant (1% level) for innate persistence, whereas, the significance level is weak (10% level) for discretionary persistence.

These results imply that the stock return volatility (idiosyncratic volatility) is lower for companies with worse earnings quality (less persistent earnings), which emanates from innate factors compared to the discretionary actions of managers. Furthermore, discretionary persistence is inversely associated with stock return volatility; this suggests that the discretionary actions of managers, reflected in earnings persistence, lead to a decrease in the stock return volatility. This is consistent with Bowen *et al*. (2008) who argued that accounting discretion benefits the shareholders by increasing the operational performance, which in turn leads to a decrease in information risk and consequently, a decrease in the volatility of stock return.

Table 4: Regression results of the effect of innate and discretionary components of EQP on the stock return volatility

	Column 1		Column 2		Column 3		Column 4	
	Estimate	**t-statistic**	**Estimate**	**t-statistic**	**Estimate**	**t-statistic**	**Estimate**	**t-statistic**
Intercept	2.7035***	2.65	-4.0799***	-12.607	-3.4246***	-9.895	-5.7374***	-14.168
SIZE	-0.3871***	-7.466	-0.0046	-0.225	-0.0358*	-1.856	-0.0202	-1.055
LEVERAGE	-0.4497***	-2.661	-0.3451**	-2.001	-0.3570**	-2.022	-0.437***	-2.565
GROWTH	0.005	1.058	0.0037	0.772	0.0023	0.465	0.0024	0.521
CFV	7.8726***	6.628	-0.1815	-0.2	0.9344	1.08	7.6748***	6.592
OPF	-2.3803***	-6.595	-2.7721***	-7.828	-2.8310***	-7.813	-2.3567***	-6.466
SRP	-0.2843***	-3.39	-0.2691***	-3.196	-0.3246***	-3.779	-0.2772***	-3.302
Innate AQ	-28.341***	-6.973						
DISCRE AQ	-1.6129***	-2.478						
Innate PERSISTENCE			-1.1597***	-5.623				
DISCRE PERSISTENCE			-0.1053*	-1.785				
Innate PREDICT					-2.3547***	-5.109		
DISCRE PREDICT					-0.0447	-0.396		
Innate SMOOTHNESS							0.8329***	6.95
DISCRE SMOOTHNESS							0.0162	0.555
N	800		800		800		800	

Source: Author's compilation

***, ** and * denote significance at 1%, 5% and 10%, respectively. The sample consists of 800 firms' year observations for the period 2009-2018. Innate AQ is an innate component of accrual quality. DISCRE AQ is a discretionary component of accrual quality. Innate Persistence and DISCRE Persistence are the innate and discretionary components of earnings persistence, respectively. Innate PREDICT is the innate component of earnings predictability and DISCRE PREDICT is the discretionary component of earnings predictability. Innate and DISCRE SMOOTHNESS are the innate and discretionary components of earnings smoothness, respectively. The description of the rest of the variables is provided in Table 1.

Results of testing H_3

The results of testing hypothesis H_3 are presented in Table 4 Column 3. These results portray that, only the innate component of earnings predictability is significantly related to the stock return volatility. The estimated coefficients for the innate and discretionary predictability are -2.3547 and -0.0447, respectively. These results imply that only innate predictability affects the stock return volatility. It can be inferred that, although the earnings predictability is affected by both accounting factors (managerial reporting choices) and economic factors (firm's operational activities and business environment), these results indicate that only the economic factors have an impact on the stock return volatility.

Results of testing H_4

Table 4, Column 4 presents the results of testing hypothesis H_4, which is concerned with the effect of innate and discretionary smoothness on the stock return volatility of the companies. Table 4 Column 4 reports that the stock return volatility is positively related to innate and discretionary smoothness, with respective coefficients of 0.8329 and 0.00162. However, the association is only significant for the innate smoothness. These results mean that a unit increase in earnings smoothness stemming from the innate factors leads to an 83% increase in the stock return volatility. These results suggest that earnings smoothness which affects the volatility of stock return of South African listed companies, does not emanate from the discretionary actions of managers, but from other factors such as the firms' economic environment, for which the managers have no control over. The robustness check of the above results was performed using bootstrapping regression and yielded the same results.

In a nutshell, from the results obtained in Table 4 and the preceding discussion, it can be concluded that for the SA-listed companies, the volatility of stock return is explained by the quality of the firm's reported earnings. Specifically, the stock return volatility is mainly driven by earnings quality properties that emanate from the operating environment and the business model of the company. Therefore, the stock return volatility is likely to increase in less predictable operating environments. Furthermore, the accounting discretion has a slight or no

impact at all, on the volatility of stock return compared to the innate factors; this suggests that the accounting standard applied in SA companies may have contributed to the improvement of the quality of the financial reports. These findings are useful information that may assist investors in the assessment of the risks of their investments and improve their resource allocation decisions.

Conclusion

This study examined the effect of innate and discretionary components of earnings quality properties, including accrual quality, earnings persistence, predictability, and smoothness, on the SRV of JSE-listed companies. The study found that the volatility of stock return is explained by the quality of the firm's reported earnings. Specifically, the study reveals that the stock return volatility is driven mostly by the innate component of earnings quality properties, which emanate from the operating environment and the business model of the company. Therefore, the stock return volatility is likely to increase in less predictable operating environments. Furthermore, it was found that accounting discretion has a slight or no impact at all, on the volatility of stock return compared to the innate factors. This suggests that the accounting standard applied in SA companies may have contributed to the improvement of the quality of the financial reports. The findings of the study have implications for investors and regulators in SA. The findings inform investors on how the quality of earnings impacts the SRV depending on its sources (innate factor or accounting discretion) and therefore guide what factors to consider when assessing the risk related to investment. In addition, the findings could also assist accounting standard setters or regulators in SA, to review and or formulate policies that will make the business environment more stable as their policies influence the operating environment of the company.

Declarations

Interdisciplinary Scope: This paper integrates concepts from financial accounting and finance to examine how the components of earnings quality impact stock return volatility, highlighting the interplay between accounting information and investors' risk assessment and market stability at the firm level.

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References

Ahmed, Z. and Hla, S. T. 2019. Stock Return Volatility and Capital Structure Measures of Non-Financial Firms in a Dynamic Panel Model: Evidence from Pakistan. *International Journal of Finance and Economics*, 24(1): 604-628.

Athanasakou, V. and Olsson, P. 2016. Managerial Discretion and Firm Fundamentals. Available: https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2715636 (Accessed 22 June 2024).

Bowen, R. M., Rajgopal, S. and Venkatachalam, M. 2008. Accounting Discretion, Corporate Governance and Firm Performance. *Contemporary Accounting Research,* 25(2): 351-405.

Campbell, J. Y., Lettau, I., Malkiel, B. G. and Xu, Y. 2001. Have Individual Stocks Become More Volatile? An Empirical Exploration of Idiosyncratic Risk. *Journal of Finance*, 56: 1-43.

Choi, D. S. 1973. Financial Disclosure and Entry to the European Capital Market. *Journal of Accounting Research*, 11(2): 159-175.

Cohen, D. A. 2006. Does Information Risk Really Matter? An Analysis of the Determinants and Economics Consequences of Financial Reporting Quality. *Asia-Pacific Journal*, 15(2): 1-57.

Dechow, P. and Dichev, I. 2002. The Quality of Accruals and Earnings: The Role of Accrual in Estimating Errors. *The Accounting Review*, 77: 35-59.

Dechow, P., Ge, W. and Schrand, C. 2010. Understanding Earnings Quality: A Review of the Proxies, their Determinants and their Consequences. *Journal of Accounting and Economics*, 50(2): 344-401.

Dermerjian, P. R., Lev, B., Melissa, F. and McVay, E. 2013. Managerial Ability and Earnings Quality. *The Accounting Review*, 88(2): 463-498.

Dichev, I., Graham, J., Harvey, C. R. and Rajgopal, S. 2013. Earning Quality: Evidence from the Field. *Journal of Accounting and Economics*, 56(2-3): 1-33.

Domingues, A. 2016. Idiosyncratic Volatility and Earnings Quality: Evidence from United Kingdom. Master's Dissertation, University of Porto.

Dutt, T. and Jenner, M. H. 2013. Stock Return Volatility, Operating Performance and Stock Return: International Evidence on Drivers of the Low Volatility Anomaly. *Journal of Banking and Finance*, 37(3): 999-1017.

Eliwa, Y., Haslam, J. and Abraham, S. 2016. Earnings Quality and the Cost of Equity Capital: Evidence from the UK. *International Review of Financial Analysis*, 48: 125-139.

Field, A. 2013. *Discovering Statistics Using IBM SPSS Statistic*. Sage: Los Angeles.

Fields, T., Lys, T. and Vincent, L. 2001. Empirical Research on Accounting Choice. *Journal of Accounting and Economic*, 31(1-3): 255-307.

Fonou-Dombeu, N. C. and Nomlala, B. C. 2023. Earnings Quality Research: Trend, Recent Evidence and Future Direction. *International Review of Management and Marketing*, 13(5): 1-8.

Fonou-Dombeu, N. C., Mbonigaba, J., Olarewaju, O. M. and Nomlala, B. C. 2022. Earnings Quality Measures and Stock Return Volatility in South Africa. *Future Business Journal*, 8(1): 1-15.

Francis, J., LaFonf, R., Olsson, P. and Schipper, L. 2005. The Market Pricing of Accrual Quality. *Journal of Accounting and Economics*, 39(2): 295-327.

Francis, J. Nanda, D. and Olsson, P. 2008. Voluntary Disclosure, Earnings Quality and Cost of Capital. *Journal of Accounting Research*, 46(1): 53-99.

Francis, J., LaFond, R., Olsson, P. M. and Schipper, K. 2004. Costs of Equity and Earnings Attributes. *The Accounting Review*, 79(4): 967-1010.

Gray, P. Koh, P. S. and Tong, Y. H. 2009. Accrual Quality, Information Risk and the Cost of Equity Capital: Evidence from Australia. *Journal of Business, Finance and Accounting*, 36(1): 51-72.

Gutierez, A. L. and Rodriguez, M. C. 2017. Measuring Earnings Quality: A Proposal for a Theoretical Framework and an Empirical Method. Available: Link (Accessed 22 May 2023).

Herly, M. 2015. Empirical Studies of Earnings Quality. PhD Dissertation, Aarhus University.

International Financial Reporting Stadards (IFRS). 2010. Conceptual Framework for Financial Reporting. Available: https://www.ifrs.org/content/dam/ifrs/publications/pdf-standards/english/2021/issued/part-a/conceptual-framework-for-financial-reporting.pdf (Accessed 17 May 2023).

Irvine, P. and Pontiff, J. 2009. Idiosyncratic Return Volatility, Cash Flow and Product Market Competition. *Review of Financial Studies*, 22: 1149-1177.

Kelly, P. J. 2014. Information Efficiency and Firm-Specific Return Variation. *Quarterly Journal of Finance*, 4(4): 1-44.

Leuz, C., Nanda, D. and Socki, P. D. 2003. Investor Protection and Earnings Management: An International Comparison. *Journal of Financial Economics*, 69(3): 505-527.

Li, B., Rajgopal, S. and Venkatachalam, M. 2014. R^2 and Idiosyncratic Risk are Not Interchangeable. *The Accounting Review*, 89(6): 2261-2295.

Liu, B. and Iorio, D. 2006. The Pricing of Idiosyncratic Volatility: An Australian Evidence. *Australian Journal of Management*, 41: 353-375.

McNichols, M. F. 2002. Discussion of the Quality of Accruals and Earnings: The Role of Accrual Estimation Errors. *The Accounting Review*, 77: 61-69.

Perotti, P. and Wagenhofer, A. 2014. Earning Quality Measures and Excess Return. *Journal of Business, Finance and Accounting*, 41(5): 545-571.

Rajgopal, S. and Venkatachalam, M. 2011. Financial Reporting Quality and Idiosyncratic Return Volatility. *Journal of Accounting and Economics*, 51(1-2): 1-20.

Rezaee, Z. and Tuo, L. 2019. Are the Quantity and Quality of Sustainability Disclosures Associated with the Innate and Discretionary Earnings Quality? *Journal of Business Ethics*, 155: 763-786.

Shehata, N. 2014. Theories and Determinants of Voluntary Disclosure. *Accounting and Finance Research*, 3(1):18-26.

Siladjaja, M. 2020. The Impact of Innate Accruals Quality on the Future Market Value Moderated by Dividend Policy. *Asian Journal of Accounting Research*, 5(2): 269-283.

Simpson, A. 2013. Does Investor Sentiment Affect Earnings Managament? *Journal of Business Finance and Accounting*, 40(7-8): 869-900.

Sodan, S. 2015. The Impact of Fair Value Accounting on Earning Quality in Eastern European Countries. *Journal of Economic and Finance*, 32: 1769-1786.

Yeh, Y. M. C., Chen, H. and Wu, M. 2014. Can Information Transparency Improve Earnings Quality Attribute? Evidence from an Enhanced Disclosure Regime in Taiwan. *Emerging Market Finance and Trade*, 50(4): 237-253.

Zhang, W., Li., X., Shen, D. and Teglia, A. 2016. R2 and Idiosyncratic Volatility: Which Capture the Firm Specific Return Variation. *Economic Modelling*, 55: 298-304.