

# **Stock Return Effects of Accounting Information and Institutional Quality**

**William Coffie**  
**University of Ghana Business School**

**Esi Kraba Brandful**  
**University of Ghana Business School**

**Mohammed Amidu**  
**University of Ghana Business School**

**Samuel Fosu**  
**University of Sussex Business School**

*This paper examines the implications of accounting information quality (AIQ) and institutional quality (INQ) for stock return. We sample 39,490 listed firms across 45 countries and employ System GMM estimator as a methodological approach to shed further light on the accounting information quality-stock return nexus by examining the complex interaction between three key variables: AIQ and INQ and stock return. The results show that INQ improves AIQ which in turn impacts on stock returns in countries with high bureaucratic quality and legislative strength. Our analysis further shows that firm cash flows are more persistent than earnings showing that cash flows provide better indication of long-term sustainability of a firm than earnings. There is evidence to suggest that conservative accounting results in reversal of reported losses in future periods.*

*Keywords: stock return, accounting information quality, institutional quality*

## **INTRODUCTION**

Accounting information quality has been the subject of much accounting research (Xie, 2001; Dechow & Schrand, 2004; Lambert et al, 2007; Dechow et al., 2010; Ewert & Wagenhofer, 2011). Threads of research argue that accounting information is related to institutional quality which may take the form of quality of accounting standards, corporate governance structures, transparency, law and investor protection among others.

On one hand some research examine the effect of legal and disclosure environment on accounting information quality (Korutaro Nkundabanyanga et al., 2013; Dayanandan, Donker, Ivanof, & Karahan, 2016). On this issue, they find that accounting quality is improved post-IFRS in French and Scandinavian (not German) civil law countries and not for common law countries. A further look at other factors of institutional quality examines firm-specific incentives such as strong monitoring mechanisms and find that

reporting quality is enhanced by stronger monitoring mechanisms and stronger institutions (Isidro & Raonic, 2012).

On the other hand some studies analyse accounting information quality in respect of the capital market. McInnis (2010) attempts to establish whether smoothness of earnings affects cost of equity capital or average realized stock return, while Callen et al. (2013) venture a step further to inculcate price delay in accounting information quality research. They find no relationship between earnings smoothing and stock returns and a negative relationship between accounting information and price delay. Cahan et al. (2009) reason that while accounting information is impounded into stock price, the extent to which this information is reflected in stock price may differ from country to country. Furthermore, research has established a relationship between institutional quality and stock market performance (Winful, Sarpong, & Agyei-Ntiamoah, 2016) and shows that institutional quality is integral to the development of the stock market (Gani & Ngassam, 2008). The question of whether greater accounting information quality and quality of institutions improves stock returns remains a puzzle.

This paper argues that institutional quality improves accounting information quality which in turn impacts on stock return. There is a striking body of theory and evidence in the financial economics literature that supports the assertion that capital markets are efficient and that asset return quickly adjust to new information. Our approach of linking the joint effect of accounting information and institutional environment to stock return builds upon this theory and evidence (see for example, Ball & Brown, 1968).

Thus, in this paper, we examine stock return effects of accounting information and institutional quality. Specifically, the paper evaluates two related hypotheses: First, institutional quality improves accounting information quality. Secondly, improved accounting information quality and institutional quality increases stock return. Whilst a few studies have examined the effect of accounting information quality on stock return (Dechow et al., 2014; Callen et al., 2013; Mc Innis, 2010), to the best of our knowledge, the joint effect of AIQ and INQ remains an empirical question which this paper seeks to address. Consequently, this paper contributes to the literature on stock return, accounting information quality and institutional quality by shedding more light on how accounting information and institutional quality jointly affect stock return. The System Generalized Method of Moments estimator (System GMM) is used to simultaneously analyse the sensitivity of stock return to accounting information and institutional quality. Accounting information quality is measured using earnings persistence, accounting conservatism and earnings management. A number of indices are employed to assess the institutional and political environment of selected countries while stock returns are measured by taking the log return of stocks. This method takes into account the inter-temporal changes in stock returns.

Our results suggest that earnings are persistent. This measure of earnings quality indicates that current earnings are positively influenced by earnings of the previous year. However, on a regional basis, cash flows of firms in Australia, Europe and North America are more persistent than earnings of the same firms. This suggests that in predicting a firm's future performance in these regions, cash flows provide more information than earnings. On conservatism, our analysis provides evidence to support the hypothesis of timeously recognised earnings being reverted to gains in future periods. Investigating the effect of AIQ and INQ on stock return, the result shows that transparency, legislative strength and law quality significantly improve stock return. Furthermore, the combination of AIQ and bureaucratic quality and AIQ and legislative strength significantly improves stock return while that of AIQ and transparency does the opposite.

The rest of the paper is organized as follows: Section 2 presents a review of the relevant theoretical literature while section 3 reviews the empirical literature. Section 4 describes the data and variables used for the study as well as discussing the empirical estimation methods. The empirical results are presented in Section 5, whilst Section 6 concludes.

## **THEORETICAL REVIEW**

The theoretical literature underlying accounting information quality, institutional quality and stock return of firms stems from information asymmetry theory, institutional theory and efficient market

hypotheses. The information asymmetry theory posits that partakers of a market will behave or make decisions based on the information available to them. Information asymmetry exists when one party has more information than another and can take advantage of such information to influence an outcome. Akerlof (1987) concludes that making the distinction between a product of good quality and one of poor quality is an innate difficulty in the world of business. This highlights the need for the establishment of institutions that regulate the behaviour of market participants in order to reduce information asymmetry. Richardson (2000) hypothesizes that the level of information asymmetry relates positively to the level of earnings management. This is because the lack of information and accountability allows managers to apply their discretion and manipulate earnings to their advantage. Consequently, share prices may react to the manipulated earnings thereby affecting returns to shareholders. Therefore, if managers are not sufficiently motivated or broader mechanisms are not instituted to monitor them, they may manage earnings which would affect the quality of accounting information being produced. While it is difficult to completely eradicate information asymmetry, the presence of standards and regulators help enhance the credibility of management disclosures (Healy & Palepu, 2001). Managers are obliged to comply with these regulations and, as such, their discretionary powers are limited.

Secondly, institutional theory is examined in an attempt to explain firm behaviour. Institutional theory addresses the phenomenon whereby structures, rules, norms and routines become entrenched in society as sources of authority for guiding behaviour (Scott, 2008). DiMaggio and Powell (1983) argue that while organizations behave differently from one another in the initial stages of operations, the more they become established the more they become homogenous. This is because the environment within which the firm operates becomes more structured and thus they begin to behave more similarly to one another. This phenomenon is known as isomorphism. It is the process that compels one member of a population to reflect other members given the same environmental circumstances (Hawley, 1968). This study investigates how institutional structures such as bureaucracy, legal environment and transparency affect earnings management.

Finally, efficient market hypothesis addresses the extent to which securities in a market reflect available information. In an efficient market, prices of securities always rapidly and fully adjust to reflect their true value (Fama, 1970). Therefore under such conditions no investor who has the same information available to other market participants will be able to identify wrongly valued securities (Saari, 1977). According to Deegan (2002) this is most pertinent to market research in accounting as it relates to publicly available information. Finally, under strong form efficiency, prices reflect all information – past, public and private. It assumes that all information possessed by anyone at any point in time is incorporated in prices. There exists an economic temptation to uncover and trade on any information that is not already impounded into prices. Accounting information quality is important because if markets are efficient, every piece of information such as earnings will be exploited in predicting future earnings and thus current price. This is especially true since accounting figures are a major source of information to investors (Novak, 2008).

## **EMPIRICAL LITERATURE**

This section reviews the relevant existing empirical literature relating to accounting information quality (AIQ), institutional quality (INQ) and stock returns.

### **AIQ and Stock Return**

According to Dechow et al. (2014), earnings announcements have been found to explain majority of the cross-sectional variations in stock returns. This is not surprising as these announcements are prime means of communicating financial information to investors. Stock returns have been found to react in the periods immediately following earnings announcements. Studies suggest that stock price is equal to the present value of future cash flows. In congruence with this, Kormendi & Lipe (1987) find that the relationship between earnings and stock returns is stronger when earnings are persistent, that is, when current earnings can predict future earnings. Cahan et al. (2009) reason that the difference in the returns-earnings association across countries is due to differences in earnings quality and differences in the

countries' institutional quality. Their study shows a stronger relationship between earnings and returns in environments with high investor protection and low opacity. This implies that the usefulness of accounting information in the capital markets is more pronounced when institutions are stronger. Winful et al. (2016) reveal that stronger institutions such as control of corruption is positively associated with stock market performance.

While one school of thought suggests that the manipulation of accounting information by managers is misleading to investors and will result in misguided stock return effects, others believe that it is a way to convey managers' own inside information about the firm (Salehi & Manesh, 2011). This therefore, reconciles the information asymmetry between managers and other users of financial information, particularly, capital market participants. A study of non-financial firms showed that income smoothing resulted in higher level of information reflected in stock prices (Salehi & Manesh, 2011; Whelan, 2004). This enables market participants to make better-informed decisions about resource allocation. There is empirical evidence to suggest that managers who engage in income smoothing are rewarded with higher returns on the stock market. This gives managers the impression that investors perceive firms with smoother earnings to be less risky. On the other hand, Mc Innis (2010) suggests no association between earnings smoothing and stock returns. Rather, results suggest that optimism on the part of investors resulting from smoother earnings is what drives higher stock returns.

The importance of timeliness cannot be over-emphasised when dealing with accounting information. Users require that information be received at a point when they can actually benefit from basing a decision on it. In that vein, the issue of conservative accounting is brought to the fore. This is because it relates directly with the timeliness of accounting information. In fact, Basu (1997) attempts to explicate the impact of conservative accounting on the link between earnings and prices. He shows that conservatism results in asymmetric timeliness between stock returns and earnings. In that, while large negative earnings realisations move in the same direction as negative stock returns, the positive earnings realisations that are positively associated with positive stock returns are small prompting further investigation on the effect of conservatism on stock returns. Zhu & Xia (2011) show that accounting conservatism is significantly and positively associated with cumulative abnormal returns, suggesting that more conservative accounting will result in an inflow of surpluses to help achieve higher growth. Similarly, Penman and Zhang (2002) find that conservative accounting results in earnings increases, albeit such increases are unsustainable and, hence, not priced by the market.

Earlier studies also tried to establish the link connecting persistence to stock returns. Kormendi and Lipe (1987) show that the extent of stock returns reaction to earnings news is positively associated with the persistence of earnings. A further analysis of other components of earnings, which are less persistent individually, shows weaker stock return responsiveness (Fairfield, Sweeney & Yohn, 1996; Burgstahler, Jiambalvo & Shevlin, 2002). Francis et al. (2004) find that persistence is strongly associated with cost of equity capital. Consequently, this paper suggests a relationship between accounting information quality and stock returns however, it is distinguished from the studies cited previously by the use of earnings management as an alternative measure of accounting information quality.

## **INQ and Stock Returns**

As stock markets developed, the question of the effect of institutional environment on stock returns rose to prominence. As such Core, Hail, and Verdi (2015) investigate the relationship between disclosure quality, ownership and cost of capital. The variable rule of law, adopted from (La Porta et al., 1998) rule of law index, measures the effectiveness of the legal system. Their results show that disclosure regulation is negatively related to realised returns while legal quality is positively related to realised returns.

Gani and Ngassam (2008) perform a similar investigation in Asian stock markets. Among the various institutional factors examined, they find that rule of law is positively and significantly associated with stock market development. An examination of corruption, however, provides results which indicate that the control of corruption does not aid in the development of stock markets. Additionally, Pellegrini, Sergi, & Sironi (2015) performed a similar study and their results suggest that the control of corruption has a negative impact on stock returns. A low level of corruption typically suggests a high governance index and such

environments are deemed more reliable than those with lower governance scores. As such investors in such areas require a lower return in exchange for the low level of risk they take on. This however, is true for in the long run. When the effect of recessions is excluded by considering the short run, less risky investments will offer a higher return.

Another strand of literature examines the effect of bureaucratic systems on stock returns. Governments enact various policies in order to aid the achievement of goals and to further economic development (Brogaard & Detzel, 2015). Naturally, changes in government may result in reversals of previous policies, especially if those policies are not in congruence with the new government's purposes. Lam and Zhang (2015) investigate how policy instability is incorporated into interest rates. Specifically, they refer to policy instability as how prone current policies are to change in light of shift in political power. This leads to increased volatility in firms' cash flows and subsequently increases the risk premium on equity instruments (Perotti, 1995; Pástor & Veronesi, 2013). Their results suggest that depending on investors' view of the policy reversal, it may lead to an increase or a decrease in interest rate spread and volatility. In particular, policy reversals that are credible, predictable and timely are better received and result in reductions in interest rate spread and volatility and subsequently, higher stock returns, vice versa.

Another dimension of research also examines economic policy uncertainty and its effect on returns. Brogaard and Detzel (2015) suggest that economic policy uncertainty is useful in forecasting excess log returns on stock markets. Specifically, they find that the extent to which the effect of a policy is unknown commands a negative risk premium on stock returns. This is likely to occur when the risk associated with the unexpected consequence of the policy outweighs its benefits. This is in line with the suggestion of Pástor and Veronesi (2013) that higher exposure of a firm to economic policy uncertainty increases expected returns however, this is state dependent and may have the opposite effect.

## **METHODOLOGY**

This section describes the data, variables used for the study and discusses the empirical estimation methods.

### **Data Description**

This paper employs both micro-firm-level and macro-country-level data. The sample includes industrial, healthcare, consumer services, consumer goods, technology, basic materials, oil and gas and telecommunications firms across 45 countries for the period from 1995 to 2013. The period was carefully selected to cover a five-year period right after the global economic crisis in 1990/1991 and 2007/2008, where stabilisation is anticipated to have been attained in stock markets. According to Aikman, Haldane, Hinterschweiger and Kapadia (2019); as well as Chatzis, Siakoulis, Petropoulos, Stavroulakis and Vlachogiannakis (2018), after the occurrence of global economic crisis, stock markets take about five years to adequately attain stabilisation.

The firm level data is taken from the most recent DataStream. Macro-economic data are sourced from the World Bank: World Development Indicators Database. The World Development Indicators are compiled from officially recognised international sources to present the most up to date and precise global development data with national, regional and global estimates. A number of indices are used to assess the institutional environment of the selected countries. These indices are obtained from the International Country Risk Guide (ICRG). The ICRG is designed to analyse potential risks faced by international organizations. Since share-issuing companies share these risks, it provides an appropriate source of institutional data to analyse stock market behaviour (Lehkonen & Heimonen, 2015). Appendices 1 and 2 provide the summary statistics of the variables employed in the paper.

### **Variable Measurements**

Accounting information quality is measured using earnings persistence, accounting conservatism and earnings management. We discuss and define these variables in detail in what follows.

### *Earnings Persistence*

The persistence of accounting earnings is useful for evaluating the performance of a company. According to Dechow and Schrand (2004), earnings persistence will only meaningfully represent earnings quality, or in this case, accounting information quality if current performance is accurately represented in earnings and additionally recurs in future periods. Investors particularly view the ability of a company's earnings to persist into future periods as indicative of a stable environment. Furthermore, it is assumed that earnings that are persistent tend to provide superior input for equity valuation purposes (Dechow et al, 2010). It is important, however to draw distinctions between earnings and cash flows. Variation in earnings persistence across various firms is a function of accruals. These accruals tend to amortize cash flow variances, resulting in a more relevant figure to investors than cash flows (Dechow and Skinner, 2000). The main distinction between earnings and cash flow is the presence of accruals. Similar to earnings, an item of cash flow is considered persistent if previous figures can be used in predicting it effectively.

The following models are used to analyse persistence where the current year values are regressed on the previous year values.

$$X_{it} = \beta_0 + \beta_1 X_{it-1} + \varepsilon_{it} \quad (1)$$

$$CF_{it} = \beta_0 + \beta_1 CF_{it-1} + \varepsilon_{it} \quad (2)$$

Here,  $X_{it}$  represents earnings of firm  $i$  at year  $t$  while  $X_{it-1}$  represents the lag of operational earnings of the same firm  $i$  at year  $t$ .  $CF_{it}$  shows operational cash flows of firm  $i$  at year  $t$  and  $CF_{it-1}$  shows the lag of operational cash flows of the same firm  $i$  at year  $t$ . The coefficient of the lag of earnings and operational cash flows is the indicator of persistence. It is included to show the extent to which previous earnings or cash flows will be repeated in current earnings or cash flows. A higher coefficient therefore, indicates higher persistence.

### *Accounting Conservatism*

Accounting conservatism has been described in research as the predisposition to acknowledge bad news more speedily than good news (Ball & Shivakumar, 2005). One result of this is that the reported value of net assets of a firm tend to be lower than its economic value (Ruch & Taylor, 2015). This reflects the view that firms adopt a worst-case scenario approach to financial reporting which invariably results in the understatement of assets and the overstatement of liabilities. However, the bias in giving priority to bad news over good news may result in revenue shifting and, hence, may affect the persistence of earnings or cash flows. Indeed some studies find evidence to this effect (see Bandyopadhyay et al., 2010; Chen, Folsom, Paek, & Sami, 2014).

The econometric model proposed by Ball & Shivakumar (2005) is utilized to compute accounting conservatism. This is based on Basu (1997) piecewise linear regression.

$$\Delta NI_{it} = \alpha_0 + \alpha_1 D\Delta NI_{it-1} + \alpha_2 \Delta NI_{it-1} + \alpha_3 (D\Delta NI_{it-1} * \Delta NI_{it-1}) + \varepsilon_{it} \quad (3)$$

where  $\Delta NI_{it}$  represents change in net income of firm  $i$  at year  $t$ , and is measured as the change from the previous period ( $t-1$ ) to the current period ( $t$ );  $D\Delta NI_{it-1}$  is earnings and measured as a dummy variable with a value of 1 if the change in income in the previous period is negative and 0 otherwise. Lag of change in net income,  $\Delta NI_{it-1}$  represents the change in income between previous period ( $t-1$ ) and last two periods ( $t-2$ ) of the same firm  $i$  at year  $t$ . ( $D\Delta NI_{it-1} * \Delta NI_{it-1}$ ) reflects the lagged interaction term between earnings and change in net income. It is of importance to note that all variables are scaled by the total assets at the commencement of the accounting period.

The hypothesis underlying this model is that conservative firms that report negative earnings tend to experience a reversal of those negative earnings in future periods. Hence, timely recognition of losses should result in a coefficient of the interaction term being less than 0 implying that negative earnings resulting from conservative accounting practice are not persistent and will therefore revert in future periods.

Furthermore, the sum of the coefficients of change in net income and the interaction term is expected to be less than zero.

### *Earnings Management*

Accounting standards provide managers with discretion in choosing accounting policies. Exercising this discretion allows them to influence earnings in order to meet stated objectives. Earnings management is a response to company incentives (Burgstahler et al., 2006). Accounting manipulation is considered a method of distorting communication to interested parties. This paper employs the Pae (2005) model to analyse discretionary accrual. This model is favoured above the others since it circumvents the measurement error and interpretation difficulties arising from omitted correlated variables and subsequently improves the explanatory ability of the Jones model (Pae, 2005). First, we derive Discretionary Accruals (DA) as the difference between Total Accruals (TA) and Non-Discretionary Accruals (NDA):

$$DA_{it} = TA_{it} - NDA_{it} \quad (4)$$

where  $TA_{it}$  is the Total Accrual of firm  $i$  in year  $t$ , which, in turn, is calculated as follows:

$$TA_{it} = (\Delta CA_{it} - \Delta Cash_{it}) - (\Delta CL_{it} - \Delta CD_{it}) - DEP_{it} \quad (5)$$

where  $DCA_{it}$  represents the change in current assets, and  $\Delta Cash_{it}$  measures the change in cash and cash equivalents. Conversely,  $\Delta CL_{it}$  and  $\Delta CD_{it}$  capture the change in current liabilities and the change in debt in current liabilities respectively. Finally,  $DEP_{it}$  measures the depreciation and amortization expense of a firm. The subscripts  $i$  and  $t$ , indicate firm and time period.

Next, we substitute the values derived from Eq. (5) into in Eq. (6) as follows:

$$\frac{TA_{it}}{A_{it-1}} = \alpha \left( \frac{1}{A_{it-1}} \right) + \beta_1 \left( \frac{\Delta REV_{it}}{A_{it-1}} \right) + \beta_2 \left( \frac{PPE_{it}}{A_{it-1}} \right) + \beta_3 \left( \frac{CFO_{it}}{A_{it-1}} \right) + \beta_4 \left( \frac{CFO_{it-1}}{A_{it-1}} \right) + \beta_5 \left( \frac{TA_{it-1}}{A_{it-1}} \right) + \varepsilon_{it} \quad (6)$$

where  $A_{it-1}$  is the total assets of firm  $i$  at year  $t$ ,  $\Delta REV_{it}$  shows the change in revenue of the same firm  $i$  at year  $t$ ,  $PPE_{it}$  is gross property, plant and equipment of the same firm  $i$  at year  $t$ .  $CFO_{it}$  represents current cash flow of the same firm  $i$  at year  $t$ .  $CFO_{it-1}$  shows the lagged cash flow of the same firm  $i$  at year  $t$  and  $TA_{it-1}$ , the lagged total accrual of the same firm  $i$  at year  $t$ . This may also be referred to as the Jones model with cash flow and lagged accruals.

We then derive Non-Discretionary Accruals ( $NDA_{it}$ ) as the fitted values from Eq. (6). Finally, we substitute the ( $NDA_{it}$ ) into Eq. (4) to obtain the Discretionary Accrual which we use as a proxy for AIQ.

Our measure of accounting information quality in the manner described above is intuitive and from the capital markets perspective. Managers engage in the manipulation of earnings to elicit a certain response on the stock market and possibly drive the value of their firms' stocks upwards. Furthermore, Dechow and Skinner (2002) find that managers whose compensations are based on stock performance are highly motivated to manage earnings. By using the measurement of earnings management as a proxy for accounting information, the paper shows whether earnings management is rewarded in the form of higher returns.

### *Institutional Quality*

The power of policy enterprises to detect various types of exploitative conduct among firms and appropriately impose sanctions is determined by the strength and quality of a country's institutions. The paper employs four indices obtained from the International Country Risk Guide (ICRG). These indices are transparency, law quality, bureaucratic quality and legislative strength. Transparency represents the inverse of corruption found within the political system of a country. It encompasses corruption in the form of excessive patronage, financial corruption, nepotism, job reservations, close connections to political parties and so on. Countries with higher levels of corruption tend to exhibit lower earnings quality (Treisman,

2000; Picur, 2004; Malagueño et al., 2010). This variable captures the magnitude of private gain derived from the exercise of public authority. Law quality represents the quality of the judicial system and how the law is observed and enforced in terms of neutrality and strength. In countries with low transparency (or high corruption) a lower level of adherence to accounting systems and processes can be expected. To understand bureaucratic quality, the characteristics of administrative infrastructure and the level of expertise exhibited by bureaucrats are examined. It also includes the strength of policies to withstand reversals in times of changes in government. Policy instability leads to lower stock returns and higher volatility among stocks in underdeveloped economies. Legislative strength focuses on the laws that have been enacted. It examines the relevance of the laws to the circumstances in the country and their quality. These indices are measured using values. Higher values indicate higher levels of institutional quality in a country. To measure transparency and law quality the values range from zero to six whereas bureaucratic and legislative strength values range from zero to four.

### *Stock Return*

Stock returns are measured by taking the log return of stocks. This method takes into account the inter-temporal changes in stock returns. Therefore:

$$SR_{it} = \ln \left( \frac{SP_{it}}{SP_{it-1}} \right) \quad (7)$$

where  $SR_{it}$  is the stock return of firm  $i$  in year  $t$ ,  $SP_{it}$  is the stock price of firm  $i$  in year  $t$ ,  $SP_{it-1}$  is the one period lagged stock price of firm  $i$ .

### *Control Variables*

Firm level variables are included in the model to explain variation in accounting information and quality and stock return. Firm size controls for the effect of size on accounting quality as size is believed to negatively affect discretionary accruals (Pham et al., 2017). This is measured as the natural logarithm of total assets at the year end. The leverage of the firm is also included as a control variable and is calculated as the ratio of debt to equity. A measure of the quality of accounting standards is also included in the analysis as this is believed to positively influence accounting information quality. This is a dummy value of 1 if International Financial Reporting Standards (IFRS) are adopted by the firm and 0, otherwise.

The control variables included in the paper to explain variations in macroeconomic environments are GDP growth, inflation and interest rates. GDP growth encapsulates the potential influence of the business cycle. The business cycle has been seen to influence stock returns (Hamilton & Lin, 1996). Economic recessions explain over 60 per cent of disparity in stock returns. Inflation is defined as the annual rate of growth of the consumer price index (CPI). This is usually higher in relatively illiquid and smaller capital markets. Where inflation rates are higher, the real rate of return on money and other assets tends to be lower (Njindan Iyke & Ho, 2017). Interest rates have also been seen to play a key role in the determination of stock market prices. However, extant literature has been inconclusive on the direction of the relationship (Njindan Iyke & Ho, 2017).

### **Model Development and Estimation Strategy**

The relationship between accounting quality and institutional quality is tested using a panel model. The model is expressed as:

$$AIQ_{it} = \alpha_0 + \alpha_1 INQ_{jt} + \sum_{j=2}^k \alpha_j X_{ij} + \varepsilon_{it} \quad (8)$$

where  $AIQ$  measures accounting information quality of firm  $i$  at period  $t$ ,  $INQ_{jt}$  represents the proxies for the institutional and political climate of country  $j$  at period  $t$ .  $X_{ij}$  is a group of ( $K$ ) macroeconomic variables.

To test the relationship between stock return and accounting information quality and institutional quality, the following models are used:



$$SR_{it} = \alpha_0 + \alpha_1 SR_{it-1} + \alpha_2 AIQ_{it} + \alpha_3 INQ_{jt} + \sum_{j=3}^k X_{ij} + \varepsilon_{it} \quad (9)$$

where  $SR_{it}$  measures Stock Returns of firm  $i$  at time  $t$ .  $AIQ_{it}$  measures Accounting Information Quality of firm  $i$  at time  $t$ ,  $INQ_{jt}$  is the institutional and political environment of country  $j$  at period  $t$ .  $X_{ij}$  is a group of ( $k$ ) variables to control for firm characteristics and individual countries' macroeconomic settings.

To determine the sensitivity of stock return to accounting information and institutional quality, the following model is tested:

$$SR_{it} = \alpha_0 + \alpha_1 SR_{it-1} + \alpha_2 AIQ_{it} + \alpha_3 INQ_{jt} + \alpha_4 (AIQ_{it} * INQ_{jt}) + \sum_{j=3}^k X_{ij} + \varepsilon_{it} \quad (10)$$

The paper employs the System Generalised Method of Moment estimator (System GMM). This is because Ordinary Least Square (OLS) will provide a dynamic panel bias in estimating equation (8), (9) and (10) since the dependent variable  $SR_{it}$  causes a correlation between prior observations  $SR_{it-1}$  and the error term. Furthermore, evidence suggests that in an effort to control for heterogeneity, OLS produces bias. Moreover, if substantial occurrences are not unequivocally specified, they will persistently be captured in the error. This will affect successive contemporaneous observations. This autocorrelation violates an assumption that is necessary for the dependability of OLS.

For these reasons, the proposal to use System Generalised Method of Moments as a substitute estimator suggested by Blundell and Bond (1998) is accepted. This addresses the sustained bias relating to endogeneity. Moreover, by introducing lagged observations as instruments rather than as regressors, using System GMM produces results that are more robust to missing data. System GMM also creates the opportunity to include time-invariant repressors, for instance, specific regulators which would have otherwise disappeared in the first-difference GMM and is more appropriate given the number of countries in the paper. In addition, System GMM uses a Windmeijer correction to the standard errors which improves robustness to heteroskedasticity.

### Descriptive Statistics

Appendices 1 and 2 present the descriptive statistics of the major variables employed in the paper. The firm-specific variables (appendix 1) are averaged across the firms for the period 1995–2013, whereas the variables representing country-level characteristics (appendix 2) are averaged by the country over the same period. With respect to stock return, Latin American firms appear to record the highest returns with an average of 8.8% while North American firms record the lowest returns of -12%. This means that investors in firms operating in Latin America earn up to approximately 9% while investors in North American firms make losses on their investments to the tune of 11%. The volatility of stock return as measured by the standard deviation averages between 50% to 60 % across all regions except North America. The volatility of stock return for North American firms is 84.7% showing that returns are at a higher risk than in other regions.

The average values of earnings management show that Latin American firms record the largest negative discretionary accruals with an average of -0.597. This indicates that managers in such firms tend to manipulate earnings in such a way as to reduce income. One reason for managing earnings downwards could be to record losses for tax purposes in order to reduce a firm's income tax liability. Conversely, Afro-Asian firms on average record a positive discretionary accrual of 0.175 indicating that managers make decisions that tend to increase earnings. This gives an impression of strong performance and managers with compensation packages tied to performance enjoy rewards as a result. In terms of size, Afro-Asian firms are the largest with total assets averaging 1,687,607.28 thousand US dollars. With respect to leverage, appendix 1 shows that Afro-Asian firms are more highly geared than firms in other regions having an average debt to equity ratio of approximately 90%. On the other hand, European firms show an aversion to debt with a debt to equity ratio of about 40%.

Appendix 2 shows the average values of country-specific variables. These variables include bureaucratic quality (BQ), transparency (TR), law quality (LQ) and legislative strength (LS), which reflects

the quality of a country's institutional environment, as well as macroeconomic factors such as interest rate, inflation and GDP growth. The table indicates that on average Australia and North America show strong institutional quality in respect of bureaucratic quality with a score of 4 and law quality with average score of 5.696 and 5.534 respectively. While Afro-Asia leads with regards to legislative strength with a score of 2.419, Australia closely follows with a score of 2.323. In relation to Transparency, as the inverse of corruption, Australia and North America have the highest scores, 4.751 and 4.389 respectively, indicating lower incidence of corruption within the financial and political system. These countries are therefore more transparent. On the other hand, Latin America and Afro-Asia score the least indicating higher corruption and less transparency. On average interest rates are higher for Latin American countries with an average of 13.723% over the period from 1995 to 2013 while it is lowest for North America over the same period. This indicates that the cost of borrowing money is higher in Latin American countries while it is relatively low in North American countries. The statistics are similar for inflation, with Latin American countries recording an average of 5.937% annually while North America records 2.129%. On GDP growth, Afro-Asian countries show the highest average annual growth in of 4.364.

Appendix 3 presents the correlation coefficients on which an initial evaluation of the relationship among the main variables is made. The results suggest that there exists a negative relationship between stock return and earnings management. This shows that managers' manipulation of earnings to meet or beat a target or achieve some desired result is not rewarded in the form of higher returns to their stocks. It suggests that the market is able to see through manipulated earnings to reflect the quality of the accounting information being reported since earnings management results in poor quality accounting information. In relation to institutional quality, the results show a negative relationship between bureaucratic quality and legislative strength and between transparency and legislative strength. On the other hand, there is a positive relationship bureaucratic quality and law quality and bureaucratic quality and transparency. The highest correlation is between bureaucratic quality and law quality. The positive coefficient of above 0.70 indicate that high quality administrative systems in a country are positively associated with the country's ability to enact laws that are relevant to the country's peculiar situation and its ability to enforce those laws and administer justice.

All the institutional quality measures appear to have negative relationship with stock returns, suggesting that strong institutions make it difficult for investors to earn abnormal returns. Higher institutional quality is indicative of low risk areas which may not fetch high returns on the stock market. The results also indicate a negative relationship between the institutional quality variables and earnings management. This suggests that in jurisdictions characterised by high transparency, efficient administrative structures, relevant laws and effective enforcement of laws, managers are less able to engage in earnings management practices. This results in higher accounting information quality in those jurisdictions.

Turning to the firm level variables, it appears that larger firms have higher stock return and lower earnings management, suggesting that these firms are less opaque and have better performance. Similarly, high-leverage firms have higher stock return which underscores the risk premium that stock markets attach to debt in the sense of Modigliani & Miller (1963). Unsurprisingly, it appears that high-leverage firms tend to indulge more in earnings management practices. This is perhaps to disguise their leverage position in order to satisfy certain conditions such as debt covenants or convey favourable signals to stakeholders and analysts.

The relationship between interest rate, inflation and growth in gross domestic product and stock returns are all positive with the highest correlation being with the growth in gross domestic product. This indicates that higher interest rates, higher level of inflation and increased economic development result in higher returns on the stock market. In relation to earnings management, the results show that apart from interest rate which has a negative relationship with earnings management, the other macroeconomic indicators, inflation and growth in gross domestic product are positively associated with earnings management. Thus, periods of higher interest rate are associated with poor accounting information whereas periods of higher inflation and increased gross domestic production are associated with better accounting information quality.

## REGRESSION RESULTS

This section presents the regression results in three parts. The first part measures and analyses AIQ. The second part employs the results of the first part to investigate the relationship between INQ and AIQ while the third part investigates the effect of AIQ and INQ on stock return.

### Measurement and analysis of AIQ

#### *Persistence*

The empirical results from which we derive a measure of earnings and cash flows persistence as proxies of accounting information quality are analysed in this sub-section. Table 1 presents the regression results. The first column relates to the earnings while the second column relates to cash flow from operations. The regressions are estimated by employing dynamic the Two-step System GMM estimation approach. As with all other section, our inference is based on Windmeijer (2005) finite-sample corrected standard errors. The diagnostic tests reported are (1) the instrument count, (2) number of observations, (3) the Hansen test for over identifying restrictions, (4) the Arellano-Bond test for second order autocorrelation Residual AR (2) in the residuals and (5) the F-test to show the joint significance of instruments. The Hansen test statistic is insignificant, indicating that instruments used in the estimation are valid and our model do not suffer from instrument proliferation. There is also no evidence of second-order autocorrelation as the test statistic is insignificant.

The results show that the coefficient of lag earnings is positive and statistically significant, suggesting that previous year's earnings positively and significantly affect current year's earnings. In fact, a \$1 increase in earnings in the previous year results in a \$0.292 increase in current year earnings. This means earnings are persistent and they are sustainable across periods. However, the coefficient of cash flow from operations was positive but statistically insignificant, leaving us without enough evidence to draw any conclusion on the persistence of a firm's cash flow from operations. Thus, consistent with Dechow et al. (2014), our results suggest that earnings contain more information about the future performance of a firm than cash flows.

**TABLE 1**  
**PERSISTENCE OF FIRMS' EARNINGS AND CASH FLOWS**

Variables	Earnings (1)	Cash Flow From Operations (2)
Earnings Lag	0.29200* (0.16500)	
Cash Flow Lag		0.00135 (0.00183)
Constant	-0.49900*** (0.19000)	-0.13800** (0.05750)
Observations	385,561	358,592
No. of instruments	171	51
Residual AR(2) test	1.130	0.129
Hansen's Test	178.2	61.31
F-test	3.131*	0.548

Table 1 presents the dynamic two-step system GMM regression result for earnings and cash flow persistence. The dependent variables are firm earnings (*Earnings*) and cash flow from operations (*Cash Flow*). *Earnings Lag* and *Cash Flow Lag* are the first lags of the dependent variables. Windmeijer (2005) finite-sample corrected standard error are in parentheses; \*\*\*, \*\* and \* indicate statistical significance at 1%, 5% and 10% respectively.

### Conservatism

This sub-section analyses the empirical results with the aim of assessing the extent to which firms adopt conservative accounting practices. Basu (1997) explains conservatism as an accountant's propensity to demand a greater level of certainty before recognising good news than that required to recognise bad news. This implies that conservatism primarily results in a downward movement in earnings. It also treats losses as large but transitory and gains as small but persistent over time. Basu (1997) therefore hypothesise that negative earnings changes have a greater tendency to reverse in future periods in comparison to positive earnings changes.

The results presented in table 2 indicate that previous year's change in net income positively and significantly affect current year's change in net income at 1% significance level. The coefficient of the lag of net income is statistically different from zero 1% level. The dummy variable, which takes a value of 1 to indicate a negative change in net income has a positive coefficient of 0.388. This indicates that a negative change in net income in any given year is followed by a positive change in the following year, thus, suggesting that bad news is transitory. This further indicates that firms do not delay the recognition of losses. However, the coefficient of the dummy term is not statistically significant. Furthermore, the coefficient of the interaction term of dummy change in net income and change in net income is negative and statistically significant at the 1% level. This indicates that the firms do in fact acknowledge bad news on a more timely basis than good news. Basu (1997) suggests that this would result in transitory negative earnings which will revert in future periods.

**TABLE 2**  
**CONSERVATISM**

Variables	Change in Net Income (1)
$DDNI_{it-1} (a_1)$	0.38800 (0.38900)
$DNI_{it-1} (a_2)$	3.02E-6*** (5.92E-7)
$DDNI_{it-1} \times DNI_{it-1} (a_3)$	-3.66E-6*** (3.40E-7)
Constant	0.10500 (0.35400)
$a_2 + a_3$	-6.4E-7
Observations	385,435
No. of instruments	37
RESIDUAL AR (2)	1.279
Hansen's Test	34.11
F-test	40.87***
Wald test	1.5

Table 2 presents the two-step system GMM regression result, Windmeijer-corrected standard error, small sample adjustment and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is the measure of a firm change in net income (*Change Net Income*).  $DDNI_{it-1}$  is a dummy variable included to indicate negative net income which takes the value 1 if so and 0 otherwise,  $DNI_{it-1}$  is *change in net income lag* and  $DDNI_{it-1} \times DNI_{it-1}$  is the interaction of the dummy variable and change in net income lag. Standard errors are in parentheses; \*\*\*, \*\* and \* indicate statistical significance at 1%, 5% and 10% respectively.

To further confirm whether these firms actually practice conservative accounting the sum of the coefficient of the lag of change in net income and the interaction term is computed. Studies show that this sum should be less than zero to verify a firm's conservatism status (Basu, 1997; Paulo, Martins & Girao,

2014). From the results, there is evidence to show that the firms practice conservatism since the sum of the coefficient of the lag of net income and the interaction term ( $a_2 + a_3$ ) is less than zero. This also indicates that although for these firms good news is not recognised on a timely basis; bad news is more speedily recognized than good news and negative changes in earnings are less persistent than positive changes and are more likely to revert in future periods (Basu 1997; Dechow et. al, 2010). However, the Wald test performed on the  $a_2 + a_3$  shows that their joint effect on change in net income is not statistically significant.

### The Effect of Institutional Quality on Accounting Information Quality

This section presents the results of the determination of the relationship between institutional quality and accounting information quality<sup>1</sup>. Table 3 presents the regression results where the dependent variable is accounting information quality. Column 1 presents the effect of bureaucratic quality, column 2 presents the effect of transparency and columns 3 and 4 show the effects of legislative strength and law quality respectively.

The results show that across all specifications, the various measures of institutional quality are positively related to accounting information quality as measured by earnings management. However, the results are significant only for bureaucratic quality and transparency. This shows that the strength and administration of policies and the level of expertise of policy formulators and executors impacts positively on accounting information quality. Furthermore, the absence of corruption as represented by transparency also impacts positively on accounting information quality. The institutional quality measures represent the political risk of a country and give an indication of its creditworthiness.

**TABLE 3**  
**THE EFFECT OF INSTITUTIONAL QUALITY ON ACCOUNTING INFORMATION QUALITY**

Variables	(1)	(2)	(3)	(4)
AIQ Lag	-0.35600*** (0.11300)	0.19900 (0.12100)	-0.34200*** (0.12100)	-0.25800 (0.18600)
BQ	0.10300** (0.04890)			
TR		0.06870** (0.03070)		
LS			0.00553 (0.00973)	
LQ				0.02760 (0.02490)
Size	-0.03130 (0.02850)	-0.04430 (0.0624)	-0.03870 (0.03850)	-0.12600** (0.04940)
Leverage	0.00826 (0.01570)	0.02380 (0.06370)	-0.00148 (0.04160)	0.00007 (0.00007)
IFRS	-0.01740 (0.10700)	0.08000 (0.06760)	0.17900 (0.12000)	0.62800*** (0.19800)
Inflation	0.00058 (0.00583)	0.00130 (0.00829)	0.00934 (0.00745)	-0.01030 (0.00785)
GDP Growth	0.00162 (0.00419)	0.02350* (0.01300)	0.00355 (0.00545)	-0.01090** (0.00449)
Constant	-0.27700 (0.27000)	0.06500 (0.7920)	0.08780 (0.46200)	1.17400* (0.60700)

Observations	271,605	271,605	271,605	271,605
No. of instruments	86	75	87	59
RESIDUAL AR (2)	-1.212	1.400	-1.170	-0.825
Hansen's Test	71.51	60.39	86.16	46.03
F-test	2.422**	1.597	2.915***	2.452**

The table 3 presents the two-step system GMM regression result, Windmeijer-corrected standard error, small sample adjustment and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is *Accounting information quality (AIQ)*. *Bureaucratic quality (BQ)* and *legislative strength (LS)* values range from 0 to 4 while *corruption* and *law quality (LQ)* values range from 0 to 6. *Transparency (TR)* is the inverse of *corruption*. The firm specific controls are *AIQ lag*; *size*, measured as the natural logarithm of total assets; *leverage*, measured as debt to equity; and *IFRS*, a dummy taking the value of 1 if the firm has adopted IFRS and 0 otherwise. *GDP growth*, the annual economic growth rate and *Inflation*, the annual change in price account for the macroeconomic environment. Standard errors are in parentheses; \*\*\*, \*\* and \* indicate statistical significance at 1%, 5% and 10% respectively.

The results presented in table 3 show that the previous values of accounting information quality are negatively associated with current values of accounting information. This implies that firms are not likely to engage in earnings management behaviour consistently thereby improving accounting information quality. Bureaucratic quality has a positive relationship with accounting information quality and this is significant at 5%. This shows that entrenched policies that are not easily reversed or changed encourage earnings management and therefore result in lower accounting information quality. This may result when policies already in place do not curb earnings management behaviour. In such situations managers are not encouraged to desist from such activities since it is unlikely that policies that facilitate such behaviour will be reversed or changed. Transparency has a similar relationship with accounting information quality. The absence of corruption and the availability of information do not curb earnings management behaviour. Law quality and legislative strength are also positively related to accounting information quality. Earnings management is not illegal and as such, while it is frowned upon by the Securities and Exchange Commission as being misleading, there are no laws prohibiting managers from exercising discretion in the preparation of financial information. In view of this the institutional environment in which a firm operates may not be able to deal with it effectively.

The coefficient of firm size is negative and significant at 5% in the presence of bureaucratic quality, legislative strength and law quality. This means that larger firms tend to engage less in earnings management and vice versa. In other words, larger firms produce high quality accounting information whereas the opposite is true for smaller firms. Jiang and Kim (2004) find that larger firms face more scrutiny and are therefore less able or less inclined to engage in manipulative behaviour with regards to financial reporting. Kim et al. (2016) also find that small firms are more likely to engage in earnings management and therefore produce accounting information which is of less quality than that of larger counterparts.

The introduction of IFRS was aimed at enhancing the quality of financial information. As such, it is expected that firms that have adopted IFRS engage less in earnings management and therefore produce high quality accounting information. However, the results indicate that IFRS and accounting information quality are positively related at a 1% significance level and that firms that adopt IFRS do engage in earnings management. These results are corroborated by Ebaid (2016) who finds no significant increase in accounting information quality with the introduction of IFRS. It contradicts Barth et al. (2008) whose study suggest an improvement in accounting information quality with the adoption of IFRS.

The results also show that inflation has a positive impact on earnings management in the presence of bureaucratic quality, transparency and legislative strength. Periods of inflation are normally accompanied by higher interest rates. This causes investors to liquidate shares and rather invest in other instruments. Managers therefore feel compelled to present earnings that indicate string performance to maintain shareholder confidence. This is done through earnings management. With regards to GDP growth, the results show that growth in GDP negatively affects accounting information quality. In that, economic

development serves as a disincentive for managers to manipulate accounting figures and therefore improves accounting information quality.

### The Effect of AIQ and INQ on Stock Return

This section presents the results from investigating the effect of accounting information quality and institutional quality on stock returns. The results are presented in table 4. From the table, the lag of stock return has a positive relationship with stock return. This shows that past performance has an impact on current performance of stocks and provides further support for the choice of our dynamic GMM estimation.

**TABLE 4**  
**THE EFFECT OF ACCOUNTING INFORMATION AND INSTITUTIONAL QUALITY ON STOCK RETURN**

Variables	(1)	(2)	(3)	(4)
SR Lag	0.30600* (0.16900)	0.36800* (0.19800)	0.28100*** (0.07120)	0.40100* (0.23300)
AIQ	0.02730** (0.01330)	0.01360 (0.02140)	0.02860** (0.01320)	-0.04710 (0.03290)
BQ	0.06050 (0.07000)			
TR		0.30900** (0.13700)		
LS			0.03150** (0.01430)	
LQ				0.03810** (0.01910)
Size	0.26500** (0.12100)	0.18800** (0.08650)	-0.03530*** (0.01230)	-0.00886 (0.01940)
Leverage	-0.03650 (0.03800)	-0.02420 (0.02580)	-0.00844 (0.00635)	0.02580* (0.01460)
Interest Rate	0.01570* (0.00806)	0.02170* (0.01250)	-0.01860*** (0.00295)	-0.01850*** (0.00522)
Inflation	0.14700 (0.12000)	-0.07520** (0.02920)	0.00118 (0.01040)	0.06980** (0.03100)
GDP Growth	0.12800*** (0.04520)	0.11200*** (0.03700)	0.03610*** (0.00708)	0.02040 (0.01290)
Constant		0.30900** (0.13700)		
Observations	212,560	212,560	212,560	212,560
No. of instruments	10	13	10	14
RESIDUAL AR (2)	1.601	1.230	1.517	1.312
Hansen's Test	2.631	3.026	0.434	4.393
F-test	6.106***	11.55***	42.10***	3.420***

The table 4 presents the two-step system GMM regression result, Windmeijer-corrected standard error, small sample adjustment and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is *Stock Return (SR)*. *Accounting information quality (AIQ)*, *bureaucratic quality (BQ)*, *legislative strength (LS)*, *transparency (TR)* and *law quality (LQ)* form the independent variables. The firm specific controls are *Stock Return Lag*; *size*, measured as the natural logarithm of total assets and leverage, measured as debt to equity. *GDP growth*, the annual economic growth rate, *Inflation*, the annual change in price and *Interest rate* account for the macroeconomic environment. Standard errors are in parentheses; \*\*\*, \*\* and \* indicate statistical significance at 1%, 5% and 10% respectively.

This implies that investors can rely on the performance of stocks in the previous year as an indicator of what to expect in the current year. In respect of accounting information quality, the results show that in the presence of bureaucratic quality and legislative strength, accounting information quality positively influences stock return. This is in line with Dechow et al who suggest that investors can be deceived by earning management when it results in positive returns to them. The results also suggest that transparency, law quality and legislative strength all have a significant and positive effect on stock return. The implication is that in countries with stronger institutions, capital market participants may be rewarded in the form of higher returns. Institutional quality is another measure of a country's risk with stronger institutions representing less risk. According to the risk-return theory, less risky regions fetch lower returns on stocks. The results therefore, contradict the risk-return theory and Core et al. (2015) who find evidence that high risk corresponds with high reward on the stock markets.

When controlling for bureaucratic quality and transparency, size has a positive and significant effect of stock return. This shows that larger firms are expected to generate higher returns in countries with stronger bureaucracies and less corruption than smaller firms. The opposite is true when controlling for legislative strength indicating that larger firms generate lower returns when operating in countries with higher legislative strength. The results are similar for interest rates with a positive effect when controlling for bureaucratic quality and transparency and a negative relationship when controlling for legislative strength and law quality. With regards to GDP growth, the results show the as a country's economy develops, it attracts foreign investments which results in increased production and higher returns on stocks.

**TABLE 5**  
**THE SENSITIVITY OF STOCK RETURN TO AIQ AND INQ**

Variables	(1)	(2)	(3)	(4)
SR Lag	-0.03310* (0.01780)	-0.05460*** (0.01690)	0.12900 (0.27400)	0.19500 (0.28800)
AIQ	-0.16100* (0.09170)	-0.21300 (0.14100)	-0.28600 (0.18100)	0.11800 (1.84300)
BQ	-0.21600*** (0.04980)			
AIQ*BQ	0.05590** (0.02470)			
TR		0.05130*** (0.01190)		
AIQ*T		0.05760 (0.03560)		
LS			0.15700** (0.06720)	
AIQ*LS			0.10100* (0.06010)	
LQ				0.21000 (0.38400)
AIQ*LQ				-0.02400 (0.39000)
Size	0.08980** (0.03720)	0.06460 (0.03950)	0.08720** (0.03690)	0.24200 (0.24500)
Leverage	0.00351 (0.01000)	0.02130 (0.01760)	0.029000 (0.03520)	-0.07550 (0.05960)
Interest Rate	-0.00422 (0.00401)	-0.00605 (0.00439)	0.01380** (0.00580)	0.02660 (0.01990)



Inflation	-0.00186 (0.00502)	-0.01860*** (0.00587)	-0.04870*** (0.01480)	0.07490** (0.03380)
GDP Growth	0.05730*** (0.00422)	0.04740*** (0.00499)	0.01630 (0.01170)	0.09680*** (0.02940)
Constant	-0.49300 (0.48500)	-1.09700** (0.52100)	-1.50500*** (0.48200)	-4.45400 (4.76100)
Observations	190,885	190,885	190,885	190,885
No. of instruments	12	12	13	12
RESIDUAL AR (2)	1.111	1.039	0.883	0.825
Hansen's Test	1.252	1.477	0.513	1.932
F-test	134.1***	69.55***	12.92***	3.789***

Table 5 presents the two-step system GMM regression result, Windmeijer-corrected standard error, small sample adjustment and orthogonal deviation. All regressions are conducted using dynamic panel data estimation. The dependent variable is *Stock Return (SR)*. *Accounting information quality (AIQ)*, *bureaucratic quality (BQ)*, *legislative strength (LS)*, *transparency (TR)* and *law quality (LQ)* form the independent variables. The firm specific controls are *Stock Return Lag*; *size*, measured as the natural logarithm of total assets and *leverage*, measured as debt to equity. *GDP growth*, the annual economic growth rate, *Inflation*, the annual change in price and *Interest rate* account for the macroeconomic environment. Standard errors are in parentheses; \*\*\*, \*\* and \* indicate statistical significance at 1%, 5% and 10% respectively.

### Is Stock Return Sensitive to AIQ and INQ?

The results presented in Table 5 show that the coefficient on the accounting information quality (AIQ) remains negative but insignificant as previously whilst the interaction term between AIQ and bureaucratic quality is positive and statistically significant. This shows that when managers engage in earnings management, as long as it is beneficial to shareholders, policies are unlikely to be reversed or changed to discourage earnings management. On the other hand, the combined effect of accounting information quality and transparency on stock return is negative. A revelation of the private gains accruing to investors through earnings management shows shareholders that financial statements are not reliable. This causes them to withdraw their investments from such firms putting a downward pressure on stock prices. Consequently, stock return also falls.

The interaction of accounting information quality and legislative strength has a negative effect on stock return. This implies that in the presence of quality legal structures, earnings management results in higher returns. In such environments, investors' confidence in the legal system overrides any misgivings about earnings management. Moreover, managers are aware that any actions that put investors' interest at undue risk will be met with appropriate sanctions. This makes them manage firms more responsibly. Conversely, the sensitivity effect of stock return to accounting information quality and law quality is negative. This effect is not statistically significant. The results also show that size, leverage, interest rate and GDP growth improve stock return. The results show that where bureaucratic quality and legislative strength are high, accounting information quality positively influences stock return. This means that in such environments, managers who engage in manipulative behaviour in financial reporting actually receive higher rewards on their firms stocks implying that stock return increases with decreases in accounting information quality. However the effect of transparency is negative.

### CONCLUDING REMARKS AND POLICY IMPLICATIONS

This paper contributes to literature by providing empirical evidence on how accounting information and institutional quality affect stock return. In particular, using a panel dataset of 39,490 listed firms across 45 countries during 1995-2013 and employing systems generalised methods of moment estimator (system GMM) the paper measures accounting information quality and how this measure and institutional quality affect stock return. As there is no consensus in the literature regarding how best to measure accounting information quality, three different specifications of AIQ are constructed: persistence, conservatism and

earnings management. The empirical analyses are conducted in four parts: The first part measures and analyses accounting information quality. The results of the first part are then employed in the second part to examine the relationship between accounting information quality and institutional quality. The third part examines the effect of accounting information quality and institutional quality on stock return. The final part then tests the sensitivity of stock return to accounting information and institutional quality.

The paper provides the following key results: On the three measures of accounting information quality, the paper provides empirical evidence to suggest that cash flows are more persistent than earnings and thus provide better information about a firm's future performance and confirms that firms practice conservative accounting. The evidence of earnings management as measured by discretionary accruals and the implication of conservative accounting on earnings provide some explanation as to why earnings appear less persistent in relation to cash flows. The results also show that current institutional systems do not curb earnings management behaviour among firms. This implies that there is still room for judgment in financial reporting and listed firms are able to take advantage of discretion allowed in current reporting rules to influence reported earnings. With regards to the determinants of stock return, the paper provides evidence that accounting information quality significantly influences stock return when controlling for bureaucratic quality and legislative strength. Furthermore, institutional quality positively influences stock return with transparency, legislative strength and law quality having significant effects. The interaction terms of accounting information quality and bureaucratic quality and accounting information quality and legislative strength have a positive significant relationship with stock return. On the other hand, the interaction of accounting information quality and legislative strength has a negative effect on stock return.

On policy implications, the paper provides evidence of earnings management among listed firms and shows that current institutional mechanisms contribute to this behaviour. It is therefore recommended that policies and regulations are formulated to target this behaviour in order to reduce the freedom provided by current reporting requirements that allow earnings management. Furthermore, since investors rely heavily on this information, they should supplement it with other sources of information about firms which are not subject to judgment and manipulation by managers. Additionally, the paper provides evidence that firms' stocks respond to the institutional environment in which it operates. Therefore, policy makers, lawmakers and others who shape the environment in which firms operate should be mindful of this when formulating policies. Specifically, those charged with setting accounting standards should review standards in order to improve the reporting quality of accounting information produced. Moreover, investors should consider the institutional environment in which a firm operates to help shape their expectation of the level of return their investments may bring. Furthermore, the paper highlights the systematic effect of institutional factors on a firm's stock behaviour. Therefore, to truly be protected against such risks, investors should diversify their portfolio across countries and not just across industries.

## ENDNOTE

- <sup>1</sup> To examine the relationship among stock return, institutional quality and accounting information quality, earnings management is used as the proxy for accounting information quality. Higher engagement in earnings management implies lower accounting information quality.

## REFERENCES

- Akerlof, G.A., & Yellen, J.L. (1987). Rational models of irrational behavior. *The American Economic Review*, 77(2), 137–142.
- Ball, R., & Brown, P. (1968). An empirical evaluation of accounting income numbers. *Journal of Accounting Research*, pp. 159–178.
- Ball, R., & Shivakumar, L. (2005). Earnings quality in UK private firms: Comparative loss recognition timeliness. *Journal of Accounting and Economics*, 39(1), 83–128.
- Bandyopadhyay, S.P., Chen, C., Huang, A.G., & Jha, R. (2010). Accounting conservatism and the temporal trends in current earnings' ability to predict future cash flows versus future earnings:

- Evidence on the trade-off between relevance and reliability. *Contemporary Accounting Research*, 27(2), 413–460.
- Barth, M.E., Landsman, W.R., & Lang, M.H. (2008). International accounting standards and accounting quality. *Journal of Accounting Research*, 46(3), 467–498.
- Basu, S. (1997). The conservatism principle and the asymmetric timeliness of earnings. *Journal of Accounting and Economics*, 24(1), 3–37.
- Beaver, W., Lambert, R., & Morse, D. (1980). The information content of security prices. *Journal of Accounting and Economics*, 2(1), 3–28.
- Beaver, W.H. (1968). The information content of annual earnings announcements. *Journal of Accounting Research*, pp. 67–92.
- Blundell, R., & Bond, S. (1998). Initial conditions and moment restrictions in dynamic panel data models. *Journal of Econometrics*, 87(1), 115–143.
- Brogaard, J., & Detzel, A. (2015). The Asset-Pricing Implications of Government Economic Policy Uncertainty. *Management Science*, 61(1), 3–18.
- Burgstahler, D., Jiambalvo, J., & Shevlin, T. (2002). Do stock prices fully reflect the implications of special items for future earnings? *Journal of Accounting Research*, 40(3), 585–612.
- Burgstahler, D.C., Hail, L., & Leuz, C. (2006). The importance of reporting incentives: Earnings management in European private and public firms. *The Accounting Review*, 81(5), 983–1016.
- Cahan, S.F., Emanuel, D., & Sun, J. (2009). The effect of earnings quality and country-level institutions on the value relevance of earnings. *Review of Quantitative Finance and Accounting*, 33(4), 371–391.
- Callen, J.L., Khan, M., & Lu, H. (2013). Accounting quality, stock price delay, and future stock returns. *Contemporary Accounting Research*, 30(1), 269–295.
- Chaney, P.K., Faccio, M., & Parsley, D. (2011). The quality of accounting information in politically connected firms. *Journal of Accounting and Economics*, 51(1–2), 58–76.
- Chen, L.H., Folsom, D.M., Paek, W., & Sami, H. (2014). Accounting conservatism, earnings persistence, and pricing multiples on earnings. *Accounting Horizons*, 28(2), 233–260.
- Core, J.E., Hail, L., & Verdi, R.S. (2015). Mandatory Disclosure Quality, Inside Ownership, and Cost of Capital. *European Accounting Review*, 24(1), 1–29.
- Dayanandan, A., Donker, H., Ivanof, M., & Karahan, G. (2016). IFRS and accounting quality: Legal origin, regional, and disclosure impacts. *International Journal of Accounting & Information Management*, 24(3), 296–316.
- Dechow, P., & Schrand, C. (2004). Earnings Quality. *CFA Digest*, 34(4), 82–85.
- Dechow, P., Ge, W., & Schrand, C. (2010). Understanding earnings quality: A review of the proxies, their determinants and their consequences. *Journal of Accounting and Economics*, 50(2–3), 344–401.
- Dechow, P.M., & Dichev, I.D. (2002). The quality of accruals and earnings: The role of accrual estimation errors. *The Accounting Review*, 77(s–1), 35–59.
- Dechow, P.M., & Skinner, D.J. (2000). Earnings management: Reconciling the views of accounting academics, practitioners, and regulators. *Accounting Horizons*, 14(2), 235–250.
- Dechow, P.M., Sloan, R.G., & Zha, J. (2014). Stock Prices and Earnings: A History of Research. *Annual Review of Financial Economics*, 6(1), 343–363.
- Deegan, C. (2002). Introduction: The legitimising effect of social and environmental disclosure: A theoretical foundation. *Accounting, Auditing & Accountability Journal*, 15, 282–311.
- DiMaggio, P., & Powell, W.W. (1983). The iron cage revisited: Collective rationality and institutional isomorphism in organizational fields. *American Sociological Review*, 48(2), 147–160.
- Ebaid, I.E.-S. (2016). International accounting standards and accounting quality in code-law countries. *Journal of Financial Regulation and Compliance*, 24(1), 41–59.
- Ewert, R., & Wagenhofer, A. (2011). *Earnings quality metrics and what they measure*. Working Paper, University of Graz.
- Fairfield, P.M., Sweeney, R.J., & Yohn, T.L. (1996). Accounting classification and the predictive content of earnings. *Accounting Review*, pp. 337–355.

- Fama, E.F. (1970). Efficient Capital Markets: A Review of Theory and Empirical Work. *The Journal of Finance*, 25(2), 383–417.
- Francis, J., Lafond, R., Olsson, P.M., Schipper, K., Francis, J., Lafond, R., & Schipper, K. (2004). Costs of Equity and Attributes. *The Accounting Review*, 79(4), 967–1010.
- Gani, A., & Ngassam, C. (2008). Effect of Institutional Factors on Stock Market Development in Asia. *American Journal of Finance and Accounting*, 1(2), 103–120.
- Hamilton, J.D., & Lin, G. (1996). Stock market volatility and the business cycle. *Journal of Applied Econometrics*, pp. 573–593.
- Hawley, A. (1968). Human ecology. In D.L. Sills (Ed.), *International Encyclopedia of the Social Sciences*. New York, NY: Macmillan.
- Healy, P.M., & Palepu, K.G. (2001). Information asymmetry, corporate disclosure, and the capital markets: A review of the empirical disclosure literature. *Journal of Accounting and Economics*, 31(1–3), 405–440.
- Isidro, H., & Raonic, I. (2012). Firm incentives, institutional complexity and the quality of “harmonized” accounting numbers. *International Journal of Accounting*, 47(4), 407–436.
- Jiang, L., & Kim, J.B. (2004). Foreign equity ownership and information asymmetry: Evidence from Japan. *Journal of International Financial Management & Accounting*, 15(3), 185–211.
- Kim, J.B., & Zhang, L. (2016). Accounting conservatism and stock price crash risk: Firm-level evidence. *Contemporary Accounting Research*, 33(1), 412–441.
- Kormendi, R., & Lipe, R. (1987). Earnings Innovations, Earnings Persistence, and Stock Returns. *The Journal of Business*, 60(3), 323–345.
- Korutaro Nkundabanyanga, S., Tauringana, V., Balunywa, W., & Naigo Emitu, S. (2013). The association between accounting standards, legal framework and the quality of financial reporting by a government ministry in Uganda. *Journal of Accounting in Emerging Economies*, 3(1), 65–81.
- La Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R.W. (1998). Law and Finance. *Journal of Political Economy*, 106(6), 1113–1155.
- Lam, S.-S., & Zhang, W. (2015). The moderating effect of bureaucratic quality on the pricing of policy instability. *China Finance Review International*, 5.
- Lambert, R., Leuz, C., & Verrecchia, R.E. (2007). Accounting information, disclosure, and the cost of capital. *Journal of Accounting Research*, 45(2), 385–420.
- Lehkonen, H., & Heimonen, K. (2015). Democracy, political risks and stock market performance. *Journal of International Money and Finance*, 59, 77–99.
- Malagueño, R., Albrecht, C., Ainge, C., & Stephens, N. (2010). Accounting and corruption: A cross-country analysis. *Journal of Money Laundering Control*, 13(4), 372–393.
- Mc Innis, J. (2010). Earnings smoothness, average returns, and implied cost of equity capital. *Accounting Review*, 85(1), 315–341.
- Miller, M.H., & Modigliani, F. (1961). Dividend policy, growth, and the valuation of shares. *The Journal of Business*, 34(4), 411–433.
- Modigliani, F., & Miller, M.H. (1963). Corporate Income Taxes and the Cost of Capital: A Correction. *The American Economic Review*, 53(3), 433–443.
- Njindan Iyke, B., & Ho, S.Y. (2017). Exchange rate uncertainty and domestic investment in Ghana. *Cogent Economics and Finance*, 5(1), 1–12.
- Novak, J. (2008). *On the Importance of Accounting Information for Stock Market Efficiency* (Unpublished Doctoral dissertation). University of Ghana, Accra, Ghana.
- Pae, J. (2005). Expected accrual models: The impact of operating cash flows and reversals of accruals. *Review of Quantitative Finance and Accounting*, 24(1), 5–22.
- Pástor, L., & Veronesi, P. (2013). Political uncertainty and risk premia. *Journal of Financial Economics*, 110(3), 520–545.

- Paulo, E. (2007). *Manipulação das informações contábeis: Uma análise teórica e empírica sobre os modelos operacionais de detecção de gerenciamento de resultados* (Doctoral dissertation, Universidade de São Paulo).
- Pellegrini, C.B., Sergi, B.S., & Sironi, E. (2015). Comments on “The parting gift.” *Thunderbird International Business Review*, 49(5), 630–631.
- Penman, S.H., & Zhang, X. (2002). The Quality of Earnings, and Stock Returns. *The Accounting Review*, 77(2), 237–264.
- Perotti, E.C. (1995). Credible privatization. *American Economic Review*, 85(4), 847–859.
- Pham, H.Y., Chung, R.Y.M., Roca, E., & Bao, B.H. (2017). Discretionary accruals: Signalling or earnings management in Australia? *Accounting & Finance*.
- Picur, R.D. (2004). Quality of accounting, earnings opacity and corruption. *Review of Accounting and Finance*, 3(1), 103–114.
- Richardson, V.J. (2000). Information asymmetry and earnings management: Some evidence. *Review of Quantitative Finance and Accounting*, 15(4), 325–347.
- Ruch, G.W., & Taylor, G. (2015). Accounting conservatism: A review of the literature. *Journal of Accounting Literature*, 34, 17–38.
- Saari, C.P. (1977). The Efficient Capital Market Hypothesis, Economic Theory and the Regulation of the Securities Industry. *Stanford Law Review*, pp. 1031–1076.
- Salehi, M., & Manesh, N.B. (2011). The effect of income smoothing on the informativeness of stock price: Evidence from the Tehran Stock Exchange. *Asian Journal on Quality*, 12(1), 80–90.
- Treisman, D. (2000). The causes of corruption: a cross-national study. *Journal of Public Economics*, 76(3), 399–457.
- Vuolteenaho, T. (2002). What drives firm-level stock returns? *Journal of Finance*, 57(1), 233–264.
- Whelan, C. (2004). *Impact of Earnings Management on the Value-Relevance of Earnings and Book Value: A Comparison of Short-Term and Long-Term Discretionary Accruals*.
- Windmeijer, F. (2005). A finite sample correction for variance of linear efficient two step GMM estimators. *Journal of Econometrics*, 126(1), 25–51.
- Winful, E.C., Sarpong, D., & Agyei-ntiamoah, J. (2016). Relationship between institutional quality and stock market performance: Evidence from emerging economies. *African Journal of Business Management*, 10(19), 469–484.
- Xie, H. (2001). The mispricing of abnormal accruals. *Accounting Review*, 76(3), 357–373.
- Zhu, S., & Xia, D. (2011). Accounting conservatism and stock pricing: An analysis based on China’s split-stock reform. *Nankai Business Review International*, 2(1), 23–47.