Does Accruals Quality Improve Capital Assets Pricing Model Predictive Power?

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Abstract
This Paper Provides empirical evidence that the Capital Assets Pricing Model can be extended by including accruals quality which is a firm-specific (idiosyncratic) accounting information to improve asset returns prediction accuracy. The idiosyncratic information was proxied by the accruals quality. Analyzing financial data on 42 listed firms in Nigeria within Fama and Macbeth's (1973) regression approach, this paper finds evidence that total accruals quality significantly affects the cost of equity. However, contrary to expectation, the effect of discretionary Accruals Quality was found to be larger than innate Accruals Quality in Nigeria. The paper determines that idiosyncratic information is a priced factor, with the implication that investors price securities in a manner that reflects their awareness of idiosyncratic accounting information. Emanating from the findings, the study recommends that policy makers, lenders and academicians, and all others who wish to predict expected returns (cost of equity) for the economic decision should use the extended CAPM presented in this study to improve the predictive accuracy of expected returns.

Keywords: *Accruals quality, CAPM, cost of equity, expected returns, idiosyncratic information, Nigeria.*

1. Introduction

There are several methods of determining the appropriate cost of equity in the finance literature. However, the Capital Assets Pricing Model (CAPM) is the most widely used method in practice[1] (Bruner, Eades, Harris & Higgins, 1998). In academic research, there is an upsurge in interest in how information (both specific and systematic) is imputed into expected returns and, therefore, market valuation, with studies reaching parallel results. The theoretical foundation of this research agenda is asset pricing and market microstructure theories. The fundamental of the assets pricing theory is the CAPM and the Arbitrage Pricing Theory (APT hereafter). Both CAPM and APT argued that only the systematic risk is priced by the market and that all firm-specific risks are diversified away by the investors. On the one hand, the CAPM postulates that there is only one systematic risk factor called the market risk that is priced. On the other hand, APT assumes that there are several economic factors that the market priced but fails to specify such factors. The idea in asset pricing theory contradicts the market microstructure theory, which recognises the role of information precision and asymmetry in the explanation of price adjustment to new information and the effect of trading mechanisms on asset prices. The market microstructure theory postulates that it does not matter whether the information is systematic or idiosyncratic. What matters is the degree of information precision and level of information asymmetry between providers of information and users of it. If the information is less precise, lenders will demand a high cost of capital (required rate of return) to compensate for the transaction cost that might be spent to verify information, or

[1] 80 anHd 81% of financial advisers and corporations respectively use CAPM to estimate the cost of equity.

they will require a higher rate of return to compensate for their distrust due to information asymmetry.

Irrespective of any theoretical proposition, stock market regulators strongly believe that accruals quality affects the cost of equity. Indeed, empirical research on the firms' idiosyncratic information and cost of equity was triggered by Arthur Levitt, the former chairman of the U.S. Securities and Exchange Commission, who states that low-quality accounting information can cause panic in the capital market, which could lead to investors demanding a larger risk premium and hence raise firm's cost of capital (Levitt, 1998). The academic debate was pioneered by Easley and O'Hara (2004), who presented a coherent framework in which the effect of information precision on the cost of equity was conceptualized. Lambert et al. (2011) later extended the Easley and O'Hara (2004) model. They show that if markets are perfectly competitive, information asymmetry has no impact on the cost of equity over and above its impact on information precision; however, if markets are imperfectly competitive, information asymmetry might constitute a separate cost of equity effect. Taken together, both models make a strong stance as to why, how, and when firm-specific information should have a direct effect on the cost of equity and, therefore, support the notion of accounting information being priced by the stock market despite its idiosyncratic nature.

An extension of CAPM by information quality risk enjoys acceptability in the literature. For instance, Francis, Lafond, Olsson, and Schipper (2004, 2005) and Barth Konchitchki and Landsman (2013) investigated the information risk and cost of capital in the U.S. and found that information risk affects the cost of equity. Core, Guay, and Verdi (2008) later examined the effects of information risk on the cost of capital in Australia and found a contrary result, while Eliwa, Haslam, and Abraham (2016) examined the association between earnings quality and cost of equity in the U.K and reported a significant negative relationship. Some studies were also conducted in developing markets like Kenya and Nigeria. In Kenya, Oluoch, Namusonge, and Onyango (2015) interrogated the nexus between accruals quality and security market returns and found that both the innate and discretionary accruals quality components have no statistically significant effect on market returns. Similarly, Adegboye (2017) tested the performance of CAPM in Nigeria by including the consumption factor-beta and found that the consumption growth factor does not improve the predictive power of CAPM. Despite having robust literature, it is still important to pursue this objective in a developing country like Nigeria, at least for two reasons. Firstly, existing literature arrived at contradictory results indicating that the matter is not yet resolved. Secondly, Eliwa et al. (2016) posited the need for country-specific evidence since the effect is likely to be affected by jurisdiction-specific factors.

The paper aims to provide evidence from Nigeria on a new cost of equity estimation approach which extends CAPM by considering firm-specific accounting information. The study answer a fundamental question "do accruals quality improve CAPM predictive powered?" This question was answered through two specific objectives; firstly, this study investigated whether investors in Nigeria demand significantly higher equity returns from firms with low accruals quality than firms with high accruals quality. Where this is the case, it is prima facie evidence that accruals quality might be a risk price factor like market risk. Thus, the second specific objective was to conduct standard capital assets pricing test following Fama and Macbeth's (1973) approach, which is the most favored in the finance literature, to find out whether accruals quality is indeed a risk-priced factor. This study contributes to the existing literature by providing empirical evidence that CAPM can be expanded to include a firm's specific accounting information risk (proxied by accruals quality) in the determination of a firm's expected returns (implied cost of equity).

Following the preceding section, the rest of the paper is organized as follows. Section 2 presents a review of related literature to develop the hypothesis and also shows the prevailing theoretical framework and methodological approaches on the topic. Section 3 explained the paper's methodological procedures and source of data. Section 4 presents and discusses the results of the analysis. Finally, Section 5 presents the conclusion and recommendations based on the results and suggests some areas for future research.

2.0 Literature Review

2.1 Concept of Capital Assets Pricing Model (CAPM)

The Capital Assets Pricing Model (CAPM) is the commonest method for estimating the cost of equity of companies (Abbasi, Kaviani & Farbod, 2017; Chen, 2021). CAPM asserts that the opportunity cost of equity of a given company is equal to the sum of the risk-free rate of return at a given time and additive term that reflects the price of systematic risk (Chen, 2021). Equation (1) shows the details of the CAPM.

$$k_e = R_f + \beta_i(R_m - R_f) \quad (1)$$

where:

k_e Is the cost of equity of a firm

R_f Is the risk-free rate of return;

β_i Is the beta value measuring market risk

R_m Is the market return

According to Fama (1968), CAPM is a static, linear, mono-factorial model which assumes that the opportunity cost of equity is determined by the level of exposure of the firm to the financial market risk (measured by the beta coefficient, specific for that company). CAPM is based on two important assumptions: First, assets betas are linearly related to their expected returns, and no other variable has marginal explanatory power, therefore, no idiosyncratic risk is important. Second, the premium is positive, suggesting that the expected market return exceeds the expected return on assets whose returns are uncorrelated with the market return (Mullins, 1982).

CAPM is a highly attractive model in practice because it offers pleasing predictions about how to measure risk and the relation between expected return and risk (Afolabi, Njogo, Areghan, Olugbenle & Olusesi, 2017; Herbert, Nwude & Onyilo, 2017; Chen, 2021). Unfortunately, according to Fama and French (2004), "the empirical record of the model is poor—poor enough to invalidate the way it is used in applications." The CAPM's empirical problems may reflect theoretical failings as a result of many simplifying assumptions. Starting in the late 1970's empirical studies began questioning the validity of CAPM, thus leading to its various alternative versions. First was Basu (1977), who reported that when stocks are sorted on earnings-price (E/P) ratios, future returns on high E/P stocks are higher than predicted by the CAPM. Fama and French (1992) later updated and synthesized the evidence on the empirical failures of the CAPM. Using the cross-section regression, Fama and French (1992) found that size, E/P, debt-equity, and book-to-market ratios add to the explanation of expected returns provided by market risk. More recently too, Tom (2012) and Laghi and Di Marcantonio (2016) empirically found that even idiosyncratic risk can be considered in the estimation of expected returns.

2.3 Empirical Studies

Several empirical studies have been conducted to examine the effect of information quality (usually proxy by accruals quality) on expected returns; however, their findings are contradictory. One stream of empirical studies suggests that accruals quality has a negative relationship with expected returns (Francis et al., 2004, 2005; Gray et al., 2009; Ben-Nasr & Al-Dakheel, 2015; Oluoch et al., 2015; Bandyopadhyay, Huang, Sun & Wirjanto, 2017). Francis et al. (2004) investigated the association between seven earnings attributes, including accruals quality and investors' resource allocation decisions proxy by the expected returns. Using the sample of U.S firms from 1975 to 2001, they found that accruals quality has a significant negative effect on expected returns. Francis et al. (2005) provide a detailed follow-up study to investigate the market pricing effects of accruals quality. The follow-up study was motivated by theoretical research showing that information risk is a non-diversifiable risk factor (Easley & O'Hara, 2004). Francis et al. (2005) employ a regression analysis that is based on the deciles ranks of accruals quality for the sample of 91,280 U.S firm-year observations over a period from 1970 to 2001. The study also uses the regression approach introduced by Fama and Macbeth (1973) to control for cross-sectional correlations. The study also confirms that accruals quality loads significantly in asset pricing regressions as a separate factor in explaining variations in expected returns. A similar result was reported by Gray et al. (2009) in Australia using a sample period of eight years from 1998 to 2005. Many other ensuing studies, such as Ben-Nasr and Al-Dakheel (2015) using privatized firms over the period from 1987 to 2006 in 32 countries across Asia, Africa, Europe, and Latin America, and Bandyopadhyay et al. (2017) also found that accruals quality is significantly negatively associated with future returns.

Another group of studies suggested that there is a significant negative relationship between accruals quality and expected returns only when this is controlled by either fundamental risk (Chen, Dhaliwal & Trombley, 2008); cash flows shock (Ogneva, 2012) or accounting standard in force (Eliwa et al., 2017). Chen et al. (2008) were motivated by the theoretical model of Yee (2006) to test the prediction that the effect of accruals quality on expected returns increases with fundamental risk over the period 1980 to 2004 in the U.S. Using an asset pricing test, they found that as fundamental risk increases, accruals quality has an increasing effect on expected returns and vice versa. Similarly, Ogneva (2012) develops a methodology based on the earnings response coefficient framework that allows decomposing returns into cash flow shocks and returns excluding cash flow shocks. Based on a sample of 92,145 firm-year observations from 1970 to 2006 in the U.S., Ogneva finds that stocks with poor accrual quality, on average, have lower cash flow shocks. Overall, Ogneva (2012) provides evidence of the existence of a priced accrual quality risk factor but only after controlling for cash flow shocks in asset-pricing tests. The final controlled model reviewed in this paper is Eliwa et al. (2016). Eliwa et al. (2016) use 4,214 firm observations in the U.K. over the period from 2005 to 2011.

The setting and period also enable them to examine the effect of International Financial Reporting Standards (IFRS) on the market pricing of earnings quality. They find a significant negative association between accruals quality and the expected cost of equity after controlling for IFRS.

The third group of empirical studies reported that accruals quality has no significant effect on expected returns (Core et al., 2008; Kim & Qi, 2010). Core et al. (2008) cast doubts on the results reported by Francis et al. (2005) and carried-out a validation study. Core et al. (2008) argue that Francis et al. (2005) do not test the hypothesis that accruals quality is a risk price factor. They argue that a better-specified test for accruals pricing requires a two-stage cross-sectional regression method, which in the first stage, it computes the factor betas; and, in the second stage, computes the factor risk premium. Core et al. (2008) employ both cross-sectional and time-series regression on a sample of 93,093 U.S firm-year observations from 1970 to 2001. They find no evidence that accruals quality is a priced risk factor. Later, Kim and Qi (2010) examine whether accruals quality affects the expected returns after controlling for low-priced stocks. Using two-stage cross-sectional regression and a sample of 103,682 firm-year observations from 1970 to 2006, they find that accrual quality is significantly priced when controlled for low-priced stocks. They also report that their result is robust in tests using individual stocks, various portfolio formations, and different beta estimations. Furthermore, they show that accrual quality and its pricing effect systematically vary with business cycles and macroeconomic variables. In particular, the pricing effect is prominent in total accruals quality and innate accruals quality but not in discretionary accruals quality. The risk premium associated with accruals quality exists only in economic expansion but not in recession periods. Poorer accruals quality firms are more vulnerable to macroeconomic shocks. The risk premium and the dispersion of accruals quality are also related to future economic activity. Overall, their results suggest that accruals quality contributes to the expected returns and that its pricing effect is associated with fundamental risk. Even though the theories of accounting information pricing are explicit in predicting that firms with poor accruals quality will experience significantly higher expected returns and vice versa, extant literature regrettably arrived at mixed and inconclusive results, indicating that empirical research is far from over on whether accruals quality is priced by the stock markets.

The last category of literature considers the separate effects of discretionary and innate components of accruals quality on expected returns. For instance, Francis et al. (2005) empirically investigate whether the effect of the expected returns is attributable to the innate or the discretionary portion of accruals quality or both. They find that the effect on the expected returns by the innate accruals quality is substantially larger (up to two to five times) than the effects of discretionary accruals quality. Francis et al. reported that in the context of models in which information quality has the potential to have capital market effects, discretionary earnings quality more readily lends itself to an information asymmetry interpretation than innate quality. Gray et al. (2007) use the realized cost of debt, industry-adjusted price-earnings ratios, and CAPM measures of the cost of equity to test the effect of innate and discretionary accruals quality. The study finds evidence that the innate component of accruals quality has more effect on the expected returns than a discretionary component in Australia. Chen et al. (2008) test the empirical prediction from Yee’s (2006) model and confirm that the effect of accruals quality on expected returns is an increasing function of underlying fundamental risk.

2.3 Theoretical Review

The role of accounting information risk in the determination of expected return has been the focus of several studies over the years (Francis et al., 2005; Gray, Koh & Tong, 2009; Tom, 2012). The theoretical foundation of these studies is the market microstructure theory which recognizes the role of the estimation risk and information asymmetry in determining expected returns. According to Botosan (2004), information quality reduces investors' expected returns by reducing estimation risk. Another stream of research suggests that information quality reduces expected returns by reducing information asymmetry and/or transaction costs. In the estimation risk hypothesis, it is argued that investors pay less for a stock whose future return or payoff distributions are uncertain. This literature on estimation risk reaches two conclusions; first, that estimation risk is non-diversifiable and that it constitutes an extension to the market risk in the CAPM. Second, the degree of precision of information matters more than the distribution across investors. Lambert (2011) shows, after controlling for the average precision of the information, that information asymmetry is not related to expected returns.

The transaction cost and/or information asymmetry literature argues that expected returns increase with the magnitude of the information asymmetry to compensate for higher transaction costs (Amihud & Mendelson, 1986). Higher information quality decreases the firm's cost of equity by lowering adverse selection. For example, Easley and O'Hara (2004) analyzed the role of information asymmetry among investors in the determination of the cost of capital. In their model, less-informed investors recognized their informational disadvantage to more-informed investors. Uninformed investors face information risk and will require higher returns (charge a higher cost of capital) as compensation.

In both cases, expected returns are affected; less precise information or more private information increases the investors' required returns and vice versa. The theoretical postulation, in general, is that poor accruals quality impairs the coordination between firms and their investors concerning the firm's capital investment decisions and thereby creates information risk. Anticipating this, investors demand a higher risk premium; that is, they charge a higher cost of equity.

Although theoretical models do not differentiate the possible sources of information risk, empirical studies acknowledge that accruals quality has two components (the innate and discretionary components) with a distinct effect on expected returns (Francis et al., 2005). The innate component reflects the business models and operating environments in which a firm operates and is slow to change relative to discretionary components. The discretionary component reflects managerial choices, including intentional reporting decisions, forecasting errors, and implementation errors that easily change from year to year. It is an open question whether the innate component has a higher effect than the discretionary component on expected returns. Yee (2006) links earnings quality to the equity premium using the CAPM consistent model and splits risk into two components- fundamental risk and earnings quality risk. In Yee's model, as fundamental risk increases, the effect of earnings quality on the cost of equity increases; that is, risk effects due to earnings quality magnify the effects of fundamental risk.

3. Methodology

3.1 Variables Measurement

The idiosyncratic information risk is measured using accruals quality (*AQ*) following Francis et al. (2005), Core et al. (2008), Ogneva (2012), and Eliwa et al. (2014). *AQ* is the extent to which working capital accruals are mapped into operating cash flow realizations. *AQ* was first measured by Dechow and Dichev (2002) using regression of last-period, current-period, and next-period cash flows from operations on working capital accruals. *AQ* model was later modified by McNichols (2002) to include a change in revenues and property plant and equipment (PPE) as additional explanatory variables. The model is stated in equation (2):

$$TA_{i,t} = \alpha_i + \beta_{1,i}CFO_{i,t-1} + \beta_{2,i}CFO_{i,t} + \beta_{3,i}CFO_{i,t+1} + \beta_{4,i}\Delta REV_{i,t} + \beta_{5,i}PPE_{i,t} + \varepsilon_{i,t} \quad (2)$$

where

TA	=	Total accruals in year *t*, (*TA* = *NIBE* – *CFO*),
CFO	=	Cash flow from operations,
NIBE	=	Income before extraordinary items,
ΔREV	=	Change in revenues,
PPE	=	Property, plant, and equipment for the year,
$\boldsymbol{\alpha}_i$	=	Intercept
$\boldsymbol{\beta}_1, \dots, \boldsymbol{\beta}_5$	=	Coefficients
$\varepsilon_{i,t}$	=	Error term

All variables are scaled by the total assets.

Following equation (2), *AQ* is measured as the standard deviation of (μ) over five years [i.e., *AQ* = σ(μ) t = t-4 … t]. Larger *AQ* values indicate poorer accruals quality and vice versa. The *a priori* expectation is that firms exhibit a positive correlation between AQ and expected returns.

To decompose the *AQ* into innate (*innateAQ*) and discretionary (*DiscAQ*) components, this paper follows Francis et al. (2005). Innate determinants are driven by business models and operating environments, while discretionary determinants are associated with financial reporting sources. Innate factors that affect *AQ* are firm size, cash flow variability, sales variability, the operating cycle, and the firm's incidence of losses. Research examining the ability of innate factors to explain accruals quality typically finds that innate factors account for between 50% and 70% of the variation in the accruals quality metric. Equation (3) is used to separate accruals quality into innate and discretionary components.

$$AQ_{i,t} = \underbrace{\alpha_1 + \beta_{1,i}SIZE_{i,t} + \beta_{2,i}\sigma(CFO)_{i,t} + \beta_{3,i}\sigma(SALES)_{i,t} + \beta_{4,i}OperCyle_{i,t} + \beta_{5,i}NegEarn_{i,t}}_{innateAQ} + \underbrace{\varepsilon_{i,t}}_{DiscAQ} \quad (3)$$

where

$AQ_{i,t}$	=	Firm *i* total accruals quality at time *t*.
$SIZE_{i,t}$	=	Log of firm ***i***'s total assets in year t,
$\sigma(CFO)_{i,t}$	=	The standard deviation of the firm's rolling 5-year cash flows from operations;
$\sigma(SALES)_{i,t}$	=	The standard deviation of the firm's rolling 10-year sales revenues;
$OperCyle_{i,t}$	=	Log of the sum of the firm's days accounts receivable and days inventory;
$NegEarn_{i,t}$	=	The proportion of losses to no losses over the prior 10 years;
$\varepsilon_{i,t}$	=	Discretionary accruals quality

The predicted value from equation (3) is the *innate AQ*, while the error term ($\boldsymbol{\varepsilon_{i,t}}$) represents *DiscAQ*. Based on the literature review, this paper expects that *innateAQ* will have more effect on expected returns than the *DiscAQ*

The expected returns are measured using Fama and French 3-factor Model (Fama & French, 1993), similar to Ogneva (2012). The Fama and French 3-factor model is presented in equation (4):

$$R_t - R_{f,t} = \alpha + \beta^{MKT}\left(R_{m,t} - R_{f,t}\right) + \beta^S(SMB_t) + \beta^B(HML_t) + \varepsilon_t \quad (4)$$

where

R_t	:	Is the actual monthly return of the firm
$R_{f,t}$	:	Is the risk-free monthly rate of return,
$R_{m,t}$	:	Is the monthly market return,
SMB_t	:	Is the monthly return on the size factor mimicking the portfolio,
HML_t	:	the monthly return on the book-to-market factor mimicking the portfolio
β^{MKT},β^S, β^{BM}	:	The coefficients or betas of the three risk factors.
α		Intercept.

The expected returns are the predicted value from (4). The calculation of expected returns is based on monthly stock returns over the 36-month rolling period. This approach is similar to Francis et al. (2005) and Ogneva (2012). The average expected returns are calculated from twelve (12) months, beginning from the fourth month after the financial reporting date to the third month after the next financial reporting date, to obtain annual expected returns used in equation (5). The reason for beginning the calculation of expected returns 3-months after the financial reporting date was to ensure that accounting information (annual reports) is in the public domain and the effect of accounting information is fully captured in the stock prices.

3.2 Sample Selection

This study employed hand-picked data from the audited annual reports of the 42 sampled listed manufacturing companies in Nigeria. Annual report, Nigerian Stock Exchange (NSE) factbook, and the companies' daily share prices and all-share index from NSE from 1997 – 2018 were collected. The purposive sampling technique was employed to select 42 manufacturing companies in Nigeria. The sample size was obtained using the criteria in Table 1.

TABLE 1
Sample Size Selection Criteria

S/N	CRITERIA	Number of companies
(i)	Listed manufacturing companies on NSE as at 31st December 2018	75
(ii)	Listed manufacturing companies on the NSE after 31st December 1996	(23)
(iii)	Companies with incomplete reports	(1)
(iv)	Companies with negative book values	(4)
(v)	Companies with an unchanged return for more than 36 consecutive months	(4)
(vi)	Companies delisted after 31st December 2018	(1)
	Total surviving companies	**42**

These filter criteria ensure that data exist for all variables, firms, and years. Some study variables require rolling data, while others require one-year ahead data, thus, data from 1997 – 2018 was collected. This period was selected because annual reports, which are the principal source of data collection, were not found for several companies in Nigeria, such that using the data before 1997 will result in severe sample loss. Furthermore, the calculation of accruals quality and expected returns requires one year ahead of data. Thus, 2018 was the most current possible year to end the study period in order to collect all relevant data.

3.3 Model specification

Following Eliwa et al. (2016) and Ogneva (2012), this study estimates that expected returns are the function of accruals quality, market risk, size, and growth. The model is presented in equation (5):

$$E(R_{FF3M\ i,t+3}) = \alpha_t + \beta_t AQ_{i,t}^{k} + \lambda_{1,t} Beta_{i,t} + \lambda_{2,t} InSiz_{i,t} + \lambda_{3,t} InBM_{i,t} + \varepsilon_{i,t} \qquad (5)$$

$$E(R_{FF3M\ i,t+3}) = \alpha_t + \beta_{1,t} AQ_{i,tte} + \beta_{2,t} innateAQ_{i,t} + \beta_{3,t} DiscAQ_{i,t} + \lambda_{1,t} Beta_{i,t} + \lambda_{2,t} InSiz_{i,t} + \lambda_{3,t} InBM_{i,t} + \varepsilon_{i,t} \qquad (6)$$

where

$\boldsymbol{E(R_{FF3M\ i,t})}$	=	Expected returns of firm *i* calculated using the Fama and French 3-factor model in equation (4).
$\boldsymbol{AQ_{i,t}}$	=	Total accruals quality of firm *i* at time *t*,
$\boldsymbol{innateAQ_{i,t}}$	=	Innate accruals quality component
$\boldsymbol{DiscAQ_{i,t}}$	=	Discretionary accruals quality component
$\boldsymbol{Beta_{i,t}}$	=	Market beta of firm *i* at time *t*,

$\boldsymbol{InSiz_{i,t}}$	=	Size of firm *i* at time *t*,
$\boldsymbol{InBM_{i,t}}$	=	Book-to-market ratio of firm *i* at time *t*,
$\boldsymbol{\alpha}$	=	Intercept
$\boldsymbol{\lambda_{1,t}, \dots, \lambda_{4,t}}$	=	Coefficients of the control variables
$\boldsymbol{\beta_t}$	=	Coefficients of AQ

The three control variables (market risk, size, and growth) are chosen following prior literature (e.g., Fama & French, 1993; 2004). The *a priori* expectation is that firms with poor AQ will have higher expected returns than firms with low AQ. The model in equation (5) is a panel regression model, thus, assumptions such as outliers (influential) observations, linearity, normality of the error term, homogeneity of variance, multicollinearity, and panel effect test were conducted.

3.4 The Asset Pricing Test

The asset pricing model (equation 7) was used to prove that idiosyncratic information (accruals quality) is a risk-priced factor in Nigeria. To do so, the study augmented the Fama and French 3-factor pricing regression with accruals quality factor $(AQfactor)$ as shown in equation (7):

$$R_{i,m} - R_{f,m} = \alpha_i + \beta_i^M\left(R_{mkt,m} - R_{f,m}\right) + \beta_i^S(SMB_m) + \beta_i^B(HML_m) + \beta_i^A(AQfactor) + \varepsilon_{i,m} \quad (7)$$

Where:

$R_{i,m}$	Firm *i*'s return in month *m*;
$R_{f,m}$	The risk-free rate in month *m*;
$R_{mkt,m}$	The market return in month *m*;
SMB_m	Return on the portfolio of a small-minus-big factor in month *m*;
HML_m	Return on the portfolio of a high-minus-low B/M factor in month *m*; and
$AQfactor$	Return on the portfolio of poor minus high AQ proxy for month *m*,

The assets pricing test from equation (7) follows the Fama and MacBeth (1973) approach. The assets pricing test was also adopted by Core et al. (2008) and Kim and Qi (2010). If the accruals quality factor is a priced factor, then the estimated coefficient on the accruals quality factor (β_i^A) will be positive and significant.

To perform an asset pricing test, independent sorts were used to assign stocks to two Size groups and three value (BM) accruals quality (AQ) groups. The portfolios are defined by the intersections of the groups. This study labels these portfolios with two letters each. The size group is described as small (S) or big (B), the value (B/M) group is labelled as high (H), medium (M), or low (L), and finally, the accruals quality (AQ) group is labelled as poor-quality (P), neutral (N), or high-quality (Q). These translate to factors: SMB (small minus big), HML (high minus low), and PMQ (poor quality minus high quality). The three factors are derived from twelve portfolios as intersections of the two size and the three B/M groups (S/L, S/M, S/H, B/L, B/M, and B/H) and two size and three *AQ* groups (S/P, S/N, S/Q, B/P, B/N, and B/Q). The measurement of portfolio returns is summarized in Table 2.

TABLE 2

Construction of Size, B/M, and Accruals Quality Factors

Sort	Breakpoints	Factors and their components
2x3 sorts on	Size: Median	$SMB_{B/M}$ =(SH+SM+SL)/3-(BH+BM+BL)/3 SMB_{AQ} =(SP+SN+SQ)/3-(BP+BN+BQ)/3
Size and B/M	B/M: 30th and 70th percentiles	HML = (SH+BH)/2 -(SL+BL)/2
Size and *AQ*	AQ: 30th and 70th percentiles	*AQfactor* = (SP+BP)/2 - (SQ+BQ)/2

Source: Authors Computation

For example, the S/L portfolio contains the stocks in the small-size group that are also in the low-B/M group, while the B/H portfolio contains the big stocks that also have high B/M. Monthly value-weighted stock returns for the twelve portfolios are calculated from April of year t to March of year t+1, and the portfolios are reformed in April of year t+1. The study calculated returns beginning in April of year t to be sure that accounting information for year t-1 was in the public domain.

The study augments the three factors of Fama and French (1993), with accruals quality factors defined in the same manner as the value factor. The Size and value factors use independent sorts of stocks into two Size groups and three B/M groups (independent 2x3 sorts). The Size breakpoint is the 42 sampled companies' median market capitalization, and the B/M breakpoints are the 30th and 70th percentiles of B/M for the 42 sampled stocks. The same 2x3 sorts are done for size and *AQ* factors. The intersections of the sorts produce twelve portfolios. The Size factor, $SMB_{B/M}$, is the average of the three small stock portfolio returns minus the average of the three big stock portfolio returns. The value factor HML is the average of the two high B/M portfolio returns minus the average of the two low B/M portfolio returns. In other words, small and big value factors were constructed as portfolios of only small stocks and portfolios of only big stocks. The accruals quality factors of the 2x3 sorts, *AQfactor*, are constructed in the same way as HML except the second sort is on accruals quality (poor minus quality). Like HML, *AQfactor* can be interpreted as averages of poor accrual quality factors for small and big stocks. The 2x3 sorts used to construct *AQfactor* produce an additional Size factor, SMB_{AQ}. The Size factor SMB from the two 2x3 sorts is defined as the average of $SMB_{B/M}$, and SMB_{AQ}. Equivalently, SMB is the average of the returns on the six small stock portfolios of the two 2x3 sorts minus the average of the returns on the six big stock portfolios.

4. RESULTS AND DISCUSSIONS

4.1 Descriptive Statistics

Table 3 reports a summary of statistics for the variables of the study. The descriptive statistics include mean (a measure of central tendency) and standard deviation (a measure of dispersion). Table 3 first reports the expected returns (cost of equity). The Table also reports the descriptive statistics for the accruals quality (*AQ*) and its components *innateAQ* and *DiscAQ*. Finally, Table 3 explains other financial variables that explain the characteristics of the sampled firms and the control variables that are identified by extant literature as drivers of investors' expected returns.

TABLE 3

Descriptive Statistics of Financial Information about the Sample Firms, 2006–2017 (N=504)

Variable	**Mean**	**Std. Dev.**	**Min**	**Max**
Expected returns $E(R_{FF3M})$	0.3118	0.2370	0.0021	0.9836
Earnings Quality Measures				
Accruals Quality (*AQ*)	0.0476	0.0412	0.0022	0.2648
Innate accruals quality (*innateAQ*)	0.0476	0.0314	0.0216	0.3207
Discretionary accruals quality (*DiscAQ*)	0.0000	0.0267	-0.0596	0.1640
Financial variables				
Market value of equity (₦' billions)	1.410	1.820	0.025	12.400
Book value of total assets (₦' billions)	56.200	124.000	0.222	1,040.000
BETA (Market risk)	0.3516	0.2844	-0.9298	1.2892
InSiz	8.8665	0.5212	7.3938	10.0945
Book-to-Market (B/M)	9.1801	16.9033	-17.6010	95.9775
Innate factors explaining earnings quality				
Logarithm of assets	7.0768	0.8278	5.3458	9.0171
Standard deviation of cash flows	0.1539	0.3253	0.0005	3.0395
Standard deviation of Sales	1.9829	8.1984	0.0140	65.1525
Operating Cycle	783	639	72	44230
NegEarn	0.5956	1.4753	0.0000	10.0000

Source: Authors Computation

According to the results presented in Table 3, the pooled sample mean value of $E(R_{FF3M})$ is 31.18%, with a standard deviation of 23.7%, indicating that the average cost of equity by listed manufacturing companies in Nigeria is 31.18%. Comparative to other jurisdictions, Gray et al. (2009) report the mean cost of equity of 1.4% in Australia, while Eliwa et al. (2014) report the mean investor expected returns of 3.6% in the U.K. for the period between 2005 and 2011. The high average $[E(R_{FF3M})]$ of the sampled manufacturing companies in Nigeria indicates that the cost of equity is over 8 times the cost of equity for companies in the U.K. and over 22 times the cost of equity in Australia. This exorbitant cost of capital is rough support to Ojirika's (2016) position that the cost of equity is the main killer of businesses in Nigeria.

AQ is measured as the standard deviation of the firm *i*'s residuals from years t - 4 to t from annual cross-sectional estimations of the modified Dechow–Dichev (2002) model. The mean value of *AQ* is 0.0476 (*SD* = 0.0412); as a benchmark, Usifoh et al. (2019) find that *AQ* averaged 0.0658 using a sample of 30 manufacturing firms for a period of 10 years from 2008 to 2017 in Nigeria. In other jurisdictions, Francis et al. (2005) find that the mean *AQ* is 0.0442 in the U.S. Based on the mean value of *AQ* reported in the descriptive statistics, it could be observed that information risk is lower in the U.S. compared to Nigeria. In addition to the total *AQ* estimate, the study decomposed accruals quality into innate and discretionary.

The market value of equity (capitalization) and the book value of total assets of the sample firms have a mean value of ₦1.410 billion and ₦56.20 billion, respectively. A comparable Nigerian study is Odoemelam, Okafor, and Ofoegbu (2019), who found that the average book value of total assets is ₦5.5 billion using the sample of 101 firms listed in Nigeria. The size variables cannot be easily compared with results in other jurisdictions due to currency differences.

Finally, Table 3 contains descriptive information on the five innate determinants of *AQ*. The innate factors are Firm size (*logAssets*), measured by the logarithm of total assets, and cash flow variability $\sigma(CFO)$, which is calculated as the standard deviation of the firm's rolling 5-year cash flows from operations scaled by total assets. Sales variability $[\sigma(sales)]$ is computed as the standard deviation of the firm's rolling ten-year sales revenues scaled by total assets. Operating cycle *(OperCyle)* is the log of the sum of the firm's days accounts receivable and days inventory, and the incidence of losses *(NegEarn)* is measured as the firm's proportion of losses over the prior ten years. For the five variables, the sample mean value is 7.0768 (*SD*= 0.8278) for the *logAssets*. The $\sigma(CFO)$ has a mean value of 0.1539 with 0.3253 standard deviations. The $\sigma(Sales)$ has a mean value of 1.9829, with a standard deviation of 8.1984. For the *OperCyle,* the mean value is 783 days and 639 days standard deviations. Finally, the mean value of *NegEarn* is 0.5956 with 1.4753 standard deviations.

4.2 Effect of Innate Factors on Accruals Quality

To separate *AQ* into its two components, that is, *innateAQ* and *DiscAQ*, equation (3) was employed. The decomposition enables an understanding of the effect of each component of accruals quality separately on the cost of equity. Table 4 reports the regression of accruals quality on innate determinants of *AQ* over the period from 2006–2017.

TABLE 4

Regression Estimates from Accruals Quality and Innate Determinants (N=504)

$$AQ_{i,t} = \alpha_1 + \beta_{1,i}SIZE_{i,t} + \beta_{2,i}\sigma(CFO)_{i,t} + \beta_{3,i}\sigma(SALES)_{i,t} + \beta_{4,i}OperCyle_{i,t} + \beta_{5,i}NegEarn_{i,t} + \varepsilon_{i,t}$$

Variable	Predicted sign	Coefficients	t-statistics
logSIZE	-	-0.0032	-2.11**
σCFO	+	0.0894	17.19***
σSALES	+	0.0004	2.00*
logOperCyle	+	-0.0001	-0.02
NegEarn	+	-0.0014	-1.56
Constant		0.0569	3.60**
F-statistics		137.47***	
R-Squared		0.5799	

Adjusted *R*-Squared	0.5757

Significance levels, *** p<0.01, ** p<0.05, * p<0.1

The coefficient of two out of five variables is statistically significant at the 95% confidence level. In specific terms, firm size has a significant negative effect on *AQ* at a 0.05 level of significance. The negative coefficient (β= -0.0032) suggests that smaller firms have poorer accruals quality and vice versa. The cash flow variability has a significantly positive effect on accruals quality at the 0.05 level of significance. The positive coefficient estimate connotes that firms in Nigeria with high variation in operating cash flows have the worst *AQ*. In terms of ranking, cash flow variability has the highest effect on *AQ*, followed by firm size, sales variability, and incidence of losses, respectively. The operating cycle has the least effect on *AQ* and is not statistically significant. The goodness-of-fit of the regression is 0.58, implying that the variables in the model explain AQ by about 58%. The results are consistent with prior findings reported by Francis et al. (2005) and Gray et al. (2009), who found that the five innate variables are reasonable corporate fundamentals that drive *AQ*. The *innateAQ* is the predicted value of equation (2), while *DiscAQ* is the error term from the same equation, and their summary statistics are reported in Table 3.

4.3 Preliminary Tests

Before performing the regression analysis in equation (5), some diagnostics checks were conducted. First, the study checked whether the data set contained influential observations or outliers using Cook's D as recommended by Fox (1991). Since the highest Cook's D is 0.227, the study concluded that there are no outliers or influential values in the data. The multicollinearity test was also carried out using Variance Inflation Factors (VIF) and Pearson correlation coefficients, and the results do not suggest co-linearity among the predictor variables (average VIF = 1.18 while individual VIF range from 1.06 – 1.50). This was collaborated by the low Pearson correlation among the predictors (i.e., Pearson correlation coefficients *r* ranges from -0.0660 to +0.4243) as reported in Table 5.

TABLE 5

Pearson Correlation Coefficients and VIF Values

Variable	BETA	BM	InSiz	AQ	VIF
BETA	1				1.50
InSiz	0.4243	1			1.35
BM	0.1822	0.1564	1		1.06
AQ	0.3536	-0.0660	0.1158	1	1.26
Mean VIF					1.18

Most of the four variables exhibited a positive correlation with the exception of the pair between AQ and BM. Overall, the evidence suggests relatively little overlap between the variables.

Furthermore, the histogram of standardized residuals in Figure 1(A) indicated that the residuals are approximately normally distributed, and likewise, the scatter plot of standardized predicted values also in Figure 1(B) shows that the data met the assumption of homogeneity of variance and linearity.

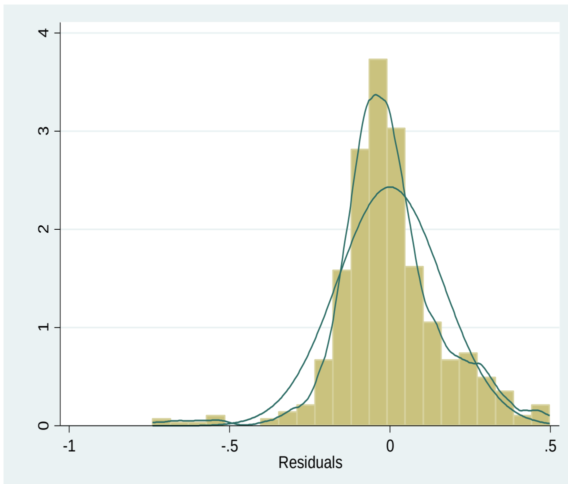

Figure 1 (A). Histogram of the error term in the 504 firm year's observations. The histogram shows that the normality of the errors assumption is met

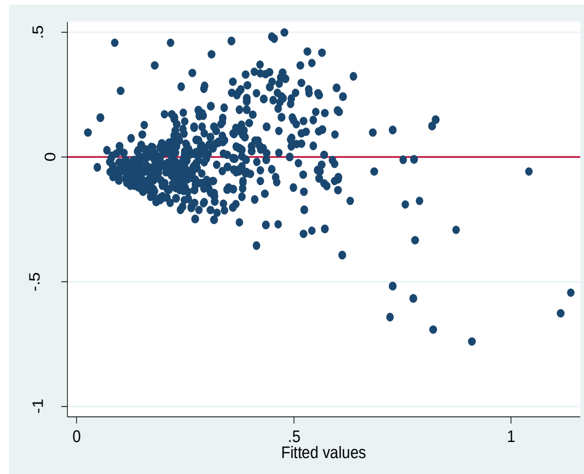

Figure 1(B). Scatter graph of residuals versus fitted values testing the homogeneity of variances.

Since the data set comprises both the cross-sectional and time-series dimensions, the Hausman test was also performed to decide between fixed and random effects. The Hausman test significantly favours the fixed effect model (χ^2 =62.38, p < 0.001). Finally, according to Hoechle (n.d) and Pesaran (2004), to ensure that statistical inference is valid, it is important to test whether or not the residuals of a linear panel model have cross-sectional dependence. If they have, then statistical inference should be based on the Driscoll-Kraay estimator. Thus, Pesaran's CD test was conducted to check cross-sectional dependence. Pesaran's test of cross-sectional independence = 4.905, P< 0.001. In other words, cross-sectional dependence was confirmed, and the average absolute value of the off-diagonal elements = 0.268. Thus, equation (5) was estimated with the Driscoll-Kraay standard errors method, which is most robust to general forms of cross-sectional and temporal dependence. Alternative estimation methods could have been *White*, *Rogers*, or *Newey-West standard errors regressions*, yet, Driscoll-Kraay standard errors pooled regressions were favored following the recommendation of Hoechle (n.d) that Driscoll-Kraay standard errors are more calibrated when cross-sectional dependence is present. Results of Driscoll-Kraay standard errors regression based on equation (5) are reported in Table 6.

4.4 The Effect of Accruals Quality and its components on Expected Returns

The regression results from equations (5) and (6) reported in this section examine the effect of the actual quality and its components on expected returns. The results in equation (5) are the total accrual quality (AQ) on expected returns, while equation (6) examines the effect of *innateAQ* and *DiscAQ* on expected returns. Results from the analysis are reported in Table 6

TABLE 6

Regressions of Accruals Quality and Control Variables on the Cost of Equity (N=504)

$$E(R_{FF3M\ i,t+3}) = \alpha_t + \beta_t AQ_{i,t}^k + \lambda_{1,t} Beta_{i,t} + \lambda_{2,t} InSiz_{i,t} + \lambda_{3,t} InBM_{i,t} + \varepsilon_{i,t}$$

$$E(R_{FF3M\ i,t+3}) = \alpha_t + \beta_{1,t} AQ_{i,t} + \beta_{2,t} innateAQ_{i,t} + \beta_{3,t} DiscAQ_{i,t} + \lambda_{1,t} Beta_{i,t} + \lambda_{2,t} InSiz_{i,t} + \lambda_{3,t} InBM_{i,t} + \varepsilon_{i,t}$$

		Equation 5		**Equation 6**	
Variables	expected sign	Estimates	t-statistics	Estimates	t-statistics
BETA	+	0.3067	5.57***	0.0889	4.34***
InSiz	-	0.0097	0.25	-0.0993	-4.28***
BM	+	0.0042	17.20***	0.0012	6.00***
Total *AQ*	+	3.352	6.39***		
innateAQ	+			0.0575	0.23
DiscAQ	+			8.1513	24.85***
Constant		-0.0806	0.24	1.1472	5.19***
F		1110.14***		3423.77	
R-squared		0.5995		0.8905	

Significance level *** p<0.01, ** p<0.05, * p<0.1

From Table 6, both regression models significantly fit at a 0.05 significance level. For the model with only total *AQ* and control variables, the probability of *F*-statistics is less than 0.05. Similarly, in the model with *innateAQ*, *DiscAQ*, and control variables, the probability of *F*-statistics is also less than 0.05. R-square shows the proportion of variation in the cost of equity that is explained by the information risk and other control variables. Table 6 reports an R-squared of 0.5995, indicating that 59.95% of the cost of equity is explained by the market risk, size, and B/M and *AQ*. When the total *AQ* was separated into innate and discretionary components, the R-squared indicates that 89.05% variability in the cost of equity was explained by risk, size, and B/M *innateAQ* and *DiscAQ*.

The coefficient estimates (β) of the regressors indicate the change in the cost of equity when there is one unit change in the independent variable holding all other variables constant. Results in Table 6 validate the study's *a priori* expectation. For instance, the study expects a positive sign on the *BETA* coefficient (i.e., firms with higher market risk have a higher cost of equity), a negative sign on *Size* (i.e., smaller firms have a higher cost of equity), and a positive on *BM* (i.e., firms with larger book-to-market ratios have a higher cost of equity). The coefficients on BETA, *logSiz* and B/M are all consistent with the expectations. The study also expects that the coefficient estimate on *AQ* will be positive, that is, firms with poor *AQ* will significantly have higher costs of equity than firms with high accruals quality.

Table 6 presents regression coefficient estimates for model (5). The coefficient on *AQ* is positive and significantly related to the cost of equity at a 0.05 significance level. This suggests that firms with poorer *AQ* have a significantly higher cost of equity. Thus, H_1 was supported. A reduction in *AQ* by a unit results in a 3.352 increase in the cost of equity. Regarding economic significance, the coefficient estimate implies that cost of equity increases by about 30 *basis points* as one moves from firms in the best *AQ* to those in the worst *AQ*. This finding provides evidence that firms enjoy a low cost of equity by furnishing precise financial information to investors. The findings are in line with Gray et al. (2009) in Australia, Kim and Qi (2010) in U.S., Sebai et al. (2015) in Tunisia, Eliwa et al. (2016) in the U.K., and Beltame et al. (2017) in Italy. The practical implication of this finding is that disclosure of *AQ* is a guarantee for the lower implied cost of equity.

The control variables are statistically significant, with the predicted signs as expected. The coefficient on BETA is 0.307, indicating that a unit increase in market risk will lead to a 0.307 increase in the cost of equity, holding all things constant. Finally, the coefficient estimate on the *BM* is positive and statistically significant at a 95% confidence level, indicating that growth stocks have more cost of equity than value stocks.

In terms of H_2, Table 6 shows that the coefficient of *innateAQ* is positive but insignificant, while the coefficient of *DiscAQ* is positive and significant. Thus, the hypothesis that *innateAQ* has a higher cost of equity effect than *DiscAQ* is rejected. The economic significance of *innateAQ* effect on the cost of equity is that the differential in the cost of equity between firms with the worst and best *innateAQ* is around 0.52 (i.e., 0.0575x9) *basis points*. The information risk associated with *DiscAQ* component is significantly related to the cost of equity in Nigeria. The differential in the cost of capital between the worst and best *DiscAQ* is 73 (i.e., 8.1513x9) *basis points*. *innateAQ* and *DiscAQ* results contradict Francis et al. (2005) in the U.S., and Eliwa et al. (2016) in the U.K., who found that *innateAQ* has a larger impact than *DiscAQ* portion on the cost of equity capital.

Findings in this study suggest that investors in Nigeria give greater weight to the discretionary component of *AQ* which is driven by management financial reporting choices, than to the innate component driven by firms' fundamental factors in Nigeria in pricing equity stocks. According to Table 5, the coefficient estimate of *DiscAQ* is about 142 times larger than the coefficient estimate of *innateAQ* (i.e., (8.1513 versus 0.0575), and only the coefficient of *DiscAQ* component is statistically significant at a 95% confidence level. The *innateAQ* component is commonly used by security analysts as an indicator of business conditions (Chan et al., 2006). A firm that faces difficulties in generating sales or is overproducing will experience a build-up of inventories. Similarly, poor sales or credit difficulties may lead to a rise in payables. There is extensive evidence that the market responds with a delay or underreacts to information in various accounting numbers (Chan et al., 2006). Such a pattern of under-reaction may reflect another behavioral trait documented in the psychology literature, namely that individuals are too slow in updating their beliefs when new evidence arrives.

Accordingly, an alternative hypothesis is that there is a slow response to the information contained in *innateAQ*. In particular, *innateAQ* arises as a result of a relative slowdown in business conditions, but initially, the market does not fully respond to this signal markets that are informationally inefficient or efficient only at the weak form. This might explain why *innateAQ* does not have a significant effect on investors' expected returns.

4.4 Accruals Quality and Asset pricing Implication

This study tests the asset pricing of idiosyncratic accounting information using equation (6) and employs the Fama and Macbeth (1973) approach. The data employed for this test is the monthly realized returns from April 2007 to March 2019. The study reports the mean of the yearly coefficient estimates and assesses statistical significance using the time-series standard errors of these estimates. Table 7 reports the mean coefficient estimates and *t*-statistics for the asset pricing test in equation (6).

TABLE 7

Cross-Sectional Regression of Excess Returns on Factor Betas

$$R_{i,m} - R_{f,m} = \alpha_i + \beta_i^M\left(R_{mkt,m} - R_{f,m}\right) + \beta_i^S(SMB_m) + \beta_i^B(HML_m) + \beta_i^A(AQfactor) + \varepsilon_{i,m}$$

	Fama and French 3-Factor Model		**Augmented model with *AQfactor***	
Variables	Estimates	t-statistics	Estimates	t-statistics
R_m-R_f	1.2950	33.38***	0.7450	5.39***
SMB	0.1076	12.01***	0.0935	8.51***
HM L	-0.0288	-1.95*	-0.0537	-3.29***
AQfactor			**0.4948**	**4.74*** **
INTERCEPT	0.0276	4.05***	0.0544	6.80***
R-Squared	0.9300		0.9416	
F	87.22***		73.50***	

Significance levels, *** p<0.01, ** p<0.05, * p<0.1

The results of the base show that all the factor loadings are significant at a 95% confidence level. Together, the Fama and French 3 factors explain about 93% of the total variation in the firms' excess returns. The model in equation (7) is also augmented to include *AQ* mimicking factor. The results of the augmented model show that the estimated intercept is significant at a 0.05 level of significance. Inspection of the incremental R^2's and the changes in the estimates of β_i^M, β_i^S, and β_i^B, indicate that the significance of the *AQ* mimicking factor comes both from additional explanatory power (the average adjusted R^2 increases from a mean of 93% to a mean of 94.16%) and from overlap with the other three factors. By far, the most significant overlap with the *AQfactor* is HML, where the inclusion of PMQ causes the average factor loading on HML (β_i^B) to change by 86.5%, the coefficient on HML increases from -0.0288 to -0.0537).

The overall results in Table 7 suggest that *AQ* plays a statistically and economically meaningful role in determining the cost of equity capital. The study expects and finds positive loading on the *AQfactor.* The significant positive loading on *AQfactor* shows that portfolios on the basis of accruals quality (PMQ) generate significant excess returns. The results of the augmented model are stronger than those reported in the base model containing only the Fama and French three factors. In particular, the augmented test shows significant positive loadings on *AQfactor* (t = 6.80, p< 0.001), with *AQ* mimicking portfolio contributing a mean incremental explanatory power of 1.16, an increase of about 1.25% from the based model that excludes *AQfactor*. These results have important implications for investors. For example, if one buys the stock of a relatively large *AQ* (poor *AQ*), s/he would expect a higher return compared to an otherwise similar stock with a small *AQ* (higher *AQ*). Such an investor would be compensated for the higher information risk s/he has taken, s/he will likely be unpleasantly surprised by any lower returns. This study also has an implication for existing asset pricing theories, specifically CAPM. For instance, the study indicates that more risks influence returns in addition to the market risk postulated by the CAPM. Investors require compensation for all risks in each asset or portfolio, not just market risk. In this new thinking, multiple risk factors, including *AQ* (information risk), which is idiosyncratic to a firm, are important inputs to the calculation of the cost of equity in Nigeria.

5. CONCLUSION AND RECOMMENDATIONS

The paper provides empirical evidence in Nigeria on a new cost of equity calculation approach that extends CAPM to include firm-specific accounting information (accruals quality). The paper begins by interrogating the effect of idiosyncratic information risk proxied by *AQ* and its components (innate or discretionary) on the expected returns. Having established the effect of accruals quality on the expected returns, this paper also tested the market pricing effect of accrual quality in Nigeria using Fama and Mcbeth's (1973) recommended procedure.

The findings of this study are largely consistent with expected predictions except for the influence of the innate and discretionary components of *AQ* on the cost of equity. In the equity market, this paper finds evidence that total *AQ* significantly affects the cost of equity. However, contrary to expectation, the effect of discretionary *AQ* was found to be more than innate *AQ* in Nigeria. The paper also contributes to the debate over whether idiosyncratic information risk is a priced risk factor. That is, whether a new factor – *AQfactor* can be added to traditional CAPM. Using the Fama and Macbeth (1973) assets pricing approach, this paper finds evidence that investors price securities in a manner that reflects their awareness of idiosyncratic accounting information: lower-quality accruals are associated with higher costs of equity. Moreover, *AQ* loads as a separate factor in explaining variation in excess returns when added to the three-factor asset-pricing regressions. The result is also robust to the inclusion of control variables known to affect the costs of capital.

Emanating from the findings, the study recommends that policymakers, lenders and academicians, and all others who wish to predict expected returns (cost of equity) for the economic decision should use the extended CAPM presented in this study to improve the predictive accuracy of expected returns. It is also recommended that to reduce the cost of equity in Nigeria, a committee comprising practitioners and seasoned academics should be set up to review annual reports and accounts of listed companies and rank them on the basis of their *AQ*. There is a need for the Financial Reporting Council of Nigeria (FRC) to further tighten the regulations and oversight aspects of financial reporting, particularly as it relates to *AQ* of listed companies in Nigeria. This will reduce information risk in the country and consequently lead to a decrease in the expected returns (the cost of equity). Corporate governance and internal control procedures of listed manufacturing companies in Nigeria should be strengthened to improve information quality. Finally, the study recommends that practitioners should incorporate *AQfactor* as a key variable in the models that forecast expected returns.

The limitation of this study is that the author makes an assumption throughout the paper that information risk measured by *AQ* is idiosyncratic. This assumption is yet to be verified by empirical research. In practice, information risk might be pervasive hence violating the idiosyncratic position that the researcher took. Thus, the study suggests that future research should be conducted to determine whether information risk is systematic or actually firm-specific. Future studies can also consider a cross-countries analysis, especially among African countries, where important country-specific factors like culture, the legal system, and the economic system are diverse. Finally, using the qualitative and quantitative data triangulation approach will be more especially to provide useful insights into the investors' psychological factors that influence capital asset pricing so as to build behavioural accounting literature.

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