

Original Article

# Accounting Earnings Persistence and Security Valuation among Quoted Firms in Nigeria

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**Abstract** - The study examined the implications of accruals and cash flows on earnings persistence among selected manufacturing firms in Nigeria. Specifically, the work examines the persistence of accruals and cash flows on earnings persistence and security pricing among selected manufacturing firms. The work is anchored on Earnings Fixation Theory (EFT) and Efficient Market Theory (EMT). The work employed the Ex-post facto research design, with data obtained from published financial statements of twenty-one selected manufacturing firms listed in the Nigerian Stock Exchange from 2009-2018. Descriptive statistics, correlation matrix and regressions analyses were performed on the data using Eviews. The results from the test of hypotheses revealed that the accruals and cash flows component of current earnings significantly affect future earnings predictability of manufacturing firms in Nigeria, with the effect of cash flows being greater than that of accruals. The study further revealed that there is significant security mispricing associated with accruals and cash flows persistence information of manufacturing firms in Nigeria. The study concludes that there is serious security mispricing of the persistence information of cash flows and accruals in the manufacturing space, with investors underestimating both cash flows and accruals. The study, therefore, recommends that management of manufacturing firms should increase disclosure of the information of accruals and cash flows, as it plays a role in equity markets by reducing information asymmetries.

**Keywords** - Earnings Persistence, Security Pricing, Accruals, Cash Flows, Earnings Fixation Theory, Efficient Market Theory

## I. INTRODUCTION

Earnings are a central part of financial statements that help a large number of stakeholders or users of accounting information to evaluate firm performance. Shareholders use the reported financial information to measure managers' performance, decide compensation plans and assess the future of

the company. Reported financial information influences the investors' capital allocation decisions (Xu, Taylor & Dugan 2007). Earnings serve as a key determinant of dividend policy investment decisions as well as a core measure of a firm's performance, an effective criterion in stock pricing and eventually an instrument utilized to make predictions (Mohammady 2012).

Earnings persistence (otherwise referred to as quality) is the honest expression of the reported profit. It is the ability of the present earnings to provide a real picture of the company and its ability to survive in the future. Chasteen, Flaherty and O'Connor (2002) opined that the quality of earnings refers to how closely income is correlated with cash flows. That is, the higher the correlation, the higher the earnings quality. Prior research related earnings quality to the level of earnings management because of the difficulties in measuring earnings quality and established that firms use accounting accruals to manage earnings, and accruals offer a robust and parsimonious measure of earnings quality.

The information content of earnings in relation to future earnings depends on earnings components. Indeed, when accounting earnings consist primarily of transitory elements, its information content regarding future earnings and stock prices is low. However, when earnings consist mainly of permanent elements, its information content is more important. Accordingly, earnings' predictive power follows from its persistent component (Charitou, Clubb, & Andreou, 2001; Martinez, 2004). The persistent component is the part of unexpected earnings which continuously recurs. It consists essentially of recurring elements and transitory elements that have long term effects (Martinez, 2004).

Studies of earnings forecasts highlighted the importance of analyzing the accruals and cash flows components of current earnings. The accruals component is more affected by transitory events than the cash flows component (Charitou et al., 2001). In contrast to cash flows that are real and less subject to distortion, determining accruals value is impregnated with high subjectivity. In fact, the accruals component correspond to expected future cash flows, deferrals of past cash flows, allocations and



assessments, all of which involve a high degree of subjectivity (Richardson, Sloan, Soliman, & Tuna, 2005). Determining accruals reflects accounting policy and the flexibility degree that managers deploy while exercising professional judgment. Managers may use judgment in financial reporting to alter financial reports in order to achieve specific goals (Healy & Wahlen, 1999). Accruals measurement error resulting from intentional earnings management (managerial opportunism) and unintentional earnings management (neutral application of accounting rules) affects accruals reliability. Therefore, the two components of current earnings, accruals and cash flows, have different characteristics and consequently different implications in future earnings prediction. Sloan (1996) shows that because of the great subjectivity in determining accruals, current earnings are less likely to persist when they consist primarily of accruals and more likely to persist if they consist mainly of cash flows. Thus, the difference between accruals quality and cash flows quality affects earnings persistence. Penman and Zhang (2002) consider earnings persistence as a good quality indicator. The authors add that high-quality earnings are predictable and sustainable earnings. Sloan (1996) also shows that investors fixate on earnings and fail to fully reflect the difference between properties of accruals and cash flows in forecasting future earnings. By equally weighting both earnings' components, investors tend to incorrectly overvalue persistence of the accruals component of current earnings when forming future earnings expectations, which leads stock prices to deviate from their intrinsic values and adjust their forecasts when realized earnings are less than expected for high-accrual firms (Mashruwala, Rajgopal, & Shevlin, 2006; Zhang, 2007).

Sloan findings are explained by the Earnings fixation hypothesis (EFH), which posit that investors fixate naively on earnings and fail to attend separately to the cash flow and accrual components of earnings. While the cash flow component of earnings is a more positive forecaster of future earnings, accruals is a less positive forecaster of future earnings because they are attributed to greater subjectivity. Although corporate managers use accruals (which incorporate estimates of future cash flows, depreciation and allocations, deferrals, and valuations) to improve current earnings, the measurement errors of accruals create significant noise in current earnings, leading to lower earnings persistence and security mispricing (Martinez, 2004; Wu, Zhang and Zhang, 2007).

Today, the incidence of earnings manipulation activities by management is perceived to have consequently shaken the trust and confidence of investors in the financial reporting system, and earnings quality emerges as an important factor in determining the validity and reliability of reported figures. The reliance of external users on reported earnings as a fundamental variable for making

decisions has made earnings quality a matter of great concern.

Although there have been numerous research works on earnings quality along with other variables, such as consolidation and earnings quality in the Nigerian banking sector, corporate profitability and earnings quality management, among others, there is no empirical evidence in the Nigerian stock market on how the differential persistence in the measurement of accruals and cash flows have implications on future earnings and security valuation among quoted manufacturing companies. The study, therefore, fills the gaps identified above.

The objective of the study is to examine the implications of accruals and cash flows on earnings persistence and security valuation among selected manufacturing firms in Nigeria.

## II. LITERATURE REVIEW

### A. Theoretical Framework

#### a) Earnings Fixation Theory (EFT)

The earnings fixation theory holds that investors naively fixate upon earnings and fail to separate the cash flow and accrual components of earnings (Bloomfield and Libby, 1995). Stated differently, investors and decision-makers focus only on total current earnings and do not distinguish between the persistence information attributable to accruals and cash flows components of earnings in pricing and valuing securities. By focusing only on analysing bottom-line earnings, i.e., what is directly observable in the income statement, investors disregard important information about earnings quality (i.e. the persistence of cash flows component and the accruals component). The cash flows component and the accruals component each have their own characteristics and properties that add specific and complementary information about the results obtained in a given period prepared under the accrual basis accounting (see Chan, Chan, Jegadeesh and Lakonishok, 2001). An understanding of their characteristics and properties is necessary for accurate pricing of future stock; however, because their properties are not differentiated by naïve investors who simply care about reported bottom lines, they become surprised when future performance and stock returns are below (beyond) what is expected/predicted for high (low) accrual firms.

This naive earnings expectation model is consistent with the functional fixation hypothesis, which has received empirical support in capital markets behavioural and experimental research (see Abdelkhalik and Keller, 1979; Hand, 1990; Bloomfield and Libby, 1995). Sloan (1996) and Richardson et al. (2005) shows that by fixating naively on earnings, investors tend not to be aware of the different forecasts that each component of accrual and cash

flow can induce. Shi and Zhang (2010) provide empirical evidence that confirms the use of the earnings fixation hypothesis to explain the negative relation between accruals and future returns.

### **b) Efficient Market Theory (EMT)**

The Efficient Market Theory or Hypothesis, also referred to as a 'Random Walk Theory, proposes that current stock prices fully reflect available information about the value of the firm, and there is no way to earn excess profits by using this information (Fama, 1965). Fama (1970) mentions that under semi-strong form market efficiency, as soon as information becomes publicly available, it is absorbed and reflected in stock prices. Public information includes past prices, data reported in a company's financial statements, earnings and dividend announcements, announced merger plans, amongst others. Share prices adjust very rapidly and in an unbiased manner to publicly available new information, such that no excess returns can be earned by trading on that information (see Hasan and Wadud, 2016). Prior empirical evidence that confirms the use of semi-strong form efficiency include (Jensen 1969; Leigh, 1997; Fama, Fisher, Jensen and Roll, 1969).

Efficient Market Theory assumes that the price of a security reflects all available information and will adjust quickly to the newly released information. The information of many investors is accumulated in the capital market, and this information is reflected in security prices. A security price is determined based on the net present value of future cash flows expected from that security. If there is information indicating a positive net present value, investors with that information will choose to buy that stock. Their attempts increase the demand for that stock and escalate the stock's price. Correspondingly investors with information that selling a stock had a positive net present value will sell the stock and result in a drop in the stock's price (Berk and DeMarzo, 2007). Thus the competition among investors eliminates all positive trading opportunities and leads to a fairly stock's price is referred to as the efficient market hypothesis.

To form an expectation of future cash flows, investors and financial analysts obtain information about the specific firm from many sources outside the accounting information. If there is new information becoming available that changes the beliefs of investors on future expected cash flows, the security price is expected to change (Deegan, 2009). There are three versions of the efficient market: strong, semi-strong and weak. Under perfect conditions, the security price fully reflects all information, including the insider information, and therefore, the market value of that security is equal to the fundamental value. This is known as the strong form of an efficient market. Under the imperfect condition, market stock prices only reflect publicly available

information. The weak form assumes that stock prices reflect the historical publicly available information, whereas the semi-strong form predicts that stock prices reflect all publicly available information and future expectations about those stocks (Scott, 2006). The difference exists because of insider information and insider trading. The definition that is used in this work is the semi-strong form.

The paper uses a triangulation of the theories discussed above.

### **B. Literature and Hypotheses development**

Hendriksen and Van Breda (2012) highlight that a crucial aspect of research on the impact of accounting earnings on the capital market is the determination of the information content of earnings data because earnings represent the primary measure of corporate profitability for investors. Earnings have been defined as a central measure in accounting and are considered a "summary" of a company's activities, able to summarize the company's past and present performances and to provide inputs for forecasting future results, which is mainly sought as an efficiency measure, prediction tool, and measure for assessing investment risk. Furthermore, studies such as those by Biddle et al. (1995), Francis et al. (2003), and Liu et al. (2002) have shown that investors are more likely to be guided by this simple measure than any other (Arkadani, Arkadani, & Heyrani, 2013; Hendriksen & Van Breda, 2012; Sunder, 2014).

Earnings comprise two components, cash flows and accruals. The cash flow is paramount because it constitutes control over the company's cash, and accruals are a key tool of accounting, adding timeliness to the reporting of the company's economic, financial situation (Dechow & Schrand, 2004). The cash flow is basically conceptualized as the number of inflows and outflows of financial resources that a company has within a certain period, i.e., it considers the effective movement of cash and cash equivalents. The main feature of this component is that its measurement involves no estimation because it will effectively be the movement of currency (Ball, Gerakos, Linnainmaa and Nikolaev, 2016).

Despite being measured more objectively, the cash flow has the weakness of not fully recognizing the economic effects of transactions, which directly affects the competence and timeliness of reported information. To complement the information provided by cash flows, accruals are used to adjust the recognition of cash flows over time and contribute by recognizing economic transactions in the period's result, even those for which effective cash movements have not been generated, such that the recognition of the event and the economic benefit coincide (Leal et al., 2017). In other words, accruals which are earnings accounts on the profit statement

that do not imply a necessary movement of cash, are components of accounting results that adjust the recognition of the cash flow over time, with the objective of improving the measurement of the firm's economic performance (Martinez, 2008).

Although accruals are widely claimed to improve the usefulness of accounting information by reporting firms' past and present performances, which provide insights into future performance, several studies find that it is associated with lower earnings persistence (Richardson et al., 2005). Persistence is viewed as a desirable attribute because it means that the presented results are recurrent and sustainable across the periods, i.e., not sporadic. The first consequence concerns the predictability of earnings, which is the ability of earnings to predict themselves. This is another desirable aspect of earnings, particularly from the perspective of market regulators and analysts. The consequences of earnings persistence in the capital market are basically the tendency to obtain greater appreciation and future gains as well as a stronger relationship between earnings and share market values. In other words, the greater the persistence is, the stronger the relationship between earnings and share value and the market reaction to variations in the level of the reported results.

#### ***a) Earnings Quality, Persistence and Stock Price Synchronicity***

Earnings quality refers to the ability of the current earnings to forecast future earnings (Penman 2007). Earnings are of good quality if no earnings reversals are forecasted. With valuation in mind, the investors are interested in future earnings. That is, they buy future earnings using the current ones. Further earnings are said to be of poor quality if the current reported earnings are not good indicators of future ones. Okolie (2006) posit that is an important aspect of evaluating a firm's financial health, even though investors and other users of financial often ignore it. Earnings quality refers to the ability of reported earnings to reflect the firms' true earnings as well as the usefulness of the reported earnings to predict future earnings.

Dechow and Schrand (2004) provide two definitions, which tend to be similar. Firstly, a high-quality earnings number is one that accurately reflects the company's current operating performance, is a good indicator of future operating performance, and is a useful summary measure for assessing firm value. Secondly, earnings quality refers to a situation when the earnings number accurately annuitize the intrinsic value of the firm. These definitions by Dechow and Schrand indicate the absence of impairment of earnings figures. They consider the quality of earnings to be the extent to which net reported income on the income statement does not differ from true earnings. Finally, in all the definitions stated above, the quality of earnings could be seen in two ways; firstly, reported earnings would be of quality if

it reflects the underlying economic performance of a firm in that particular period. Secondly, earnings quality portrays how well accounting earnings convey information about the phenomenon without distortions and manipulations.

However, Schipper and Vincent (2003) asserted that the predictive ability is not linked to "the representative accuracy of reported earnings to an economic construct" due to the fact that the ability of earnings to predict itself might increase management involvement to smooth the reported series relative to the unreported unmanaged series. Managers may introduce short-term components to the income series, which reduce earnings quality as captured by persistence, in order to decrease time-series variability and increase predictability. Leuz, Nanda, and Wysocki (2003) shared the same view by their assertion that artificially smoothed earnings are not representatively realistic to the reporting entity's business model and its economic environment.

Watts (2003a, 2003b) argued that those earnings that are derived under conservative accounting rules or the conservative application of relevant rules are of high quality. Schipper and Vincent (2003) considered earnings to be the main profitability indicator as well as the main source of financial information in capital markets. They focused on decision usefulness and economic income to express a definition of earnings quality as proximity degree of accounting earnings to 'Hicksian earnings'. Hicksian earning is an amount that is consumed during a period so that the welfare at the end period in comparison to the beginning of the period is not changed. They argued that earnings of high quality are those that "predict future earnings better".

Dechow and Schrand (2004) argued that a good understanding of earnings quality plays an important role in the process of financial analysis and that earnings of high quality help financial analysts in analyzing three basic sides of information, that is, the present functional performance of the company; future functional performance; and value of the company. They stated that smooth earnings and earnings that do not have special or non-recurring items are earnings of high quality. Abdelghany (2005) noted that different styles for measuring earnings quality lead to different evaluations, where the same company might be given a higher or lower quality level according to the earnings quality form adopted. Altamuro and Beatty (2006) used earnings continuity (the relationship between the present earnings with the future ones) as a standard of its quality.

Richardson, Sloan, Soliman and Tuna (2005) define persistence as the degree to which earnings performance persists into the next periods implying that managers have not used their discretion in the reporting processes. The cash component of earnings provides both relevant and reliable information, thus,

linking earnings quality to cash components of earnings in terms of persistence.

Francis, LaFond, Olsson and Schipper (2013) state that: “earnings which map more closely into cash flows are more desirable.” Dechow and Dichev (2002) argue that earnings quality can be assessed by mapping accruals into last, current and next period cash flows.

The term “persistence” is widely used interchangeably with sustainable earnings in the literature. Earnings that reflect a steady growth trend are seen as desirable. Thus, in financial statements analysis, unusual, non-operating or non-recurring items reported on the income statement require more attention than others in terms of quality of earnings as these items have a negative effect on the sustainability of earnings (i.e. accruals are negatively related to earnings persistence). Penman and Zhang (2002) indicate that reported earnings before extraordinary items that are readily identified on the income statements are of good quality if it is a good indicator of future earnings. Thus, high quality of earnings is sustainable or persistent earnings, as often referred to in financial analysis.

Okpa (2018) indicates that earnings performance attributable to the accrual components of earnings exhibits lower persistence than earnings performance attributable to the cash flow components of earnings. The subjectivity and errors inherent in the measurement of accruals create noisy earnings, which do have the power to persist. The greater the measurement noise, the greater the downward bias in the persistent coefficient. The persistence of earnings plays an important role in company valuation. Since the investors rely on earnings numbers more than other measures, the “price-to-earnings ratio” is agreed to be a fundamental multiple in company valuation. Persistent earnings series, on the other hand, produce healthier price-to-earnings ratios (return/earnings) for valuation purposes (Penman and Zhang 2002).

Francis, LaFond, Olsson and Schipper (2003) state that: “earnings which map more closely into cash flows are more desirable.” Dechow and Dichev (2002) argue that earnings quality can be assessed by mapping accruals into last, current and next period cash flows. Richardson, Sloan, Soliman and Tuna (2005) argue that earnings’ cash component provides both relevant and reliable information. Thus, they link earnings quality to cash components of earnings in terms of persistence. Barragato and Markelevich (2003) conclude that earnings are of high quality as the earnings’ closeness-to-cash increases and argue that “an earnings stream that is a predictor of future operating cash flows is of high quality.”

Stock predictability has long history originated from the study carried out by Roll (1995), who finds that large part stocks prices changes are not explained by market-wide factors. He concluded that such unexplained parts might represent firm private

information. Subsequently, Morck et al. (2015), Piotroski and Roulstone (2016), Durnev et al. (2015) expanded the idea by developing models to capture firm-specific information impounded into share price by naming it stock price synchronicity. So far, stock price synchronicity represents is a measure of firm-specific information impounded into share.

Richardson et al. (2005) bring a different perspective to the debate and argue that investors do not understand the lower persistence of less reliable accruals, which leads to incorrect investor forecasts of future earnings and cash flows and to their mispricing of current accounting realizations. Within the forecasting framework, Richardson et al. (2005) use an extended decomposition of the change in non-operating assets to identify components that exhibit high versus low reliability in predicting future operating income. After ranking the components of non-operating assets according to their reliability, they find that the magnitude of the accrual anomaly is greater for the less reliable accruals. This finding is also consistent with that of Xie (2011), as discretionary accruals are expected to be less reliable and therefore less persistent and associated with greater stock mispricing.

### ***C. Persistence of accrual and cash flow components***

Cash flows reflect objective elements and can be easily validated by the auditor (Piot, 2008). Conversely, some components of accruals need professional judgment while being determined (stocks, receivables, depreciation, contingent liabilities, etc.), which may induce measurement errors. The Financial Accounting Standard Board (Statements of Financial Accounting Concepts SFAC 2) defines reliability as the main quality of financial reporting, which means that users have to ensure that the presentation of operations and the underlying facts are consistent with reality and reasonably error and bias-free. Thus, errors arising from professional judgments while determining accruals affect their reliability. It implies that the earnings’ accruals component is more affected by transitory events than a cash flow component to the extent that the response coefficient of the accrual component is greatly reduced than the response coefficient of the cash flow component (Charitou et al., 2001). Richardson et al. (2005) show that an increase in accruals measurement error leads to an increase in their persistence coefficient bias compared to the cash flow persistence coefficient.

Richardson et al. (2005) show that current earnings follow a mean-reverting process and provide a basis for predicting future earnings. However, earnings reported by the firms are often biased measures of their actual earnings due to errors in the measurement of accruals. Cash flow is less subject to distortion than accrual. This is because accruals are characterised by deferrals, allocations and valuations, all of which involve higher degrees of subjectivity

than what enters the determination of cash flow. While both components contribute to current earnings, current earnings performance is less likely to persist if it is attributable primarily to the accrual component of earnings as opposed to the cash flow component. For example, high earnings performance that is attributable to the cash flow component of earnings is more likely to persist than high earnings performance that is attributable to the accrual component of earnings (Livnat and Lopez, 2008). In his seminal paper, Sloan (1996) examines the role of cash flows and accruals in the time-series behaviour of earnings and found that accruals are less persistent than cash flows, leading to lower profitability in the subsequent period when accruals reverse. He shows that cash flows and accruals have different implications for the assessment of future earnings because accruals are less likely to recur in future earnings periods since they are transitory and subjective estimates. Using one year ahead earnings performance, Sloan finds that both coefficients of accruals and cash flows are significant between 0 and 1, which mean that the two components contribute to the mean reversion of earnings. However, the coefficient of accruals is smaller than that of cash flows indicating that the mean reversion of accruals is faster, hence, less persistent than cash flows. This position is confirmed in recent research (Lewellen and Resutek, 2017; Okpa, 2018).

Richardson et al. (2005) underscore that there exists an 'error-in-variables' problem with accrual measurement because different components of accrual are measured at a different magnitude of subjectivity arising from accounting policies and the exercise of professional managerial judgements in financial reporting. The magnitude of each accruals component estimation error decreases the quality of total accruals, and the components with greater estimation error have lower reliability and lower persistence.

Working capital accruals (which is the accrual definition adopted in this study) are composed of accounts receivables, inventory and accounts payables. While accounts payable are measured with high reliability because they are financial obligations that are recorded at their nominal values, accounts receivables and inventory are regarded as the major cause of misestimating accruals persistence because managers use them the most in revenue and margin manipulation through prematurely recognizing revenue, delaying the writing down of obsolete inventory and allocation of arbitrary charges (Chan et al., 2006). Thus, working capital accruals is a medium reliability accrual with a significantly lower persistence than cash flows.

Overall, since the magnitude of downward bias in the persistence coefficient is expected to be greater for accruals relative to cash flow, the downward bias will be more significant for less reliable accrual components (i.e. working capital accruals and non-

current operating accruals), implying that they are less likely to be realized in the cash flows and are less informative of future earnings when compared with high-reliability accrual (i.e. financial accruals). From the arguments, we argue that:

*H1: The cash flow component of earnings has a higher persistence than the accrual component of earnings*

#### **a) Pricing of accrual and cash flow components of earnings**

Studies that examine the extent to which stock prices reflect the different information of the accrual and cash flow components of earnings have drawn support from Earnings Fixation Hypothesis (EFH) or Efficient Market Hypothesis (EMH). Many studies have documented a positive association between stock returns and earnings, a relationship which has been generally attributed to earnings' capacity to present value-relevant information in a summarised manner. They find that the accrual component is positively related to future returns because investors quickly respond to publicly available information about earnings components and correctly incorporate the information in their security pricing without bias (Takamatsu and Favero, 2013). Their findings confirm the efficient market hypothesis (EMH), which maintains that current stock prices reflect all available information that may influence stocks' future value (accruals and cash flow information). However, evidence is present that investors do not correctly use available information in forecasting future earnings performance, raising the possibility that the well-documented association between earnings and stock returns may, in part, reflect investors' naive fixation on reported earnings rather than earnings' ability to summarize value relevant information (Hewitt, 2009).

Hand (1990) and Bloomfield and Libby (1995) document that investors tend to fixate on reported earnings and fail to impound other information contained in earnings components properly. Sloan (1996) conjectures that since accruals and cash flows components of current earnings have different implications on future earnings, failure to differentiate their information leads to security mispricing. By naively fixating on earnings, investors will tend to overprice stocks in which the accrual component is relatively high and vice versa. This mispricing will be corrected when future earnings are realized to be lower higher than expected, resulting in predictable negative abnormal stock returns.

In addition, Richardson et al. (2005) linked accruals reliability with subsequent returns and found that less reliable accruals have a stronger negative relationship with subsequent returns, showing that investors do not understand the implications of accrual reliability for earnings persistence. As investors do not anticipate the lower persistence of low-reliability accruals, they will be surprised by the next period's

low earnings performance, resulting in negative abnormal returns in the next period, with less reliable accruals having a higher negative relationship with returns. We thus hypothesise:

*H2: Mispricing associated with accrual component is significantly greater than the mispricing associated with cash flows component of earnings*

### **C. Empirical Review**

A number of studies on share prices, earnings persistence, earnings smoothing and Earnings management have been carried out over the last decades as a result of the recent corporate scandals involving a number of corporations in both developed and developing economies. These studies have produced divergent opinions on the impact of earnings quality on share prices.

Ducharme, Malatesta and Sefcik (2004), in their study, aimed at examining the relations among earnings management, stock offerings, abnormal accruals, post-offer and shareholders lawsuits. Their sample consists of firms that made public offerings from 1988 to 1997. They posit that firms in the period around stock offer report positive abnormal accrual components in their earnings. However, in the period after the stock offerings, the abnormal accruals are negatively related to the returns or even they tend to reverse in the post-offer period. The research also reveals that the stock returns are much lower, and the reversal is more pronounced in the post stock offer period if the firms are sued in connection with their stock offer than those who are not sued. The study is quite credible, but the findings will be different if they might have considered other ways in which stocks are issued.

Marquardt and Wiedman (2004) investigate how earnings are managed through specific accruals. According to them, earlier research has shown that firms manage earnings upward prior to initial offerings and seasoned equity offerings in order to increase the market price of the stock. The benefits of earnings management are high because the proceeds of an equity offering are based on the stock price at one point in time. In order for the firms to have a maximum price impact, they predict that firms issuing equity will prefer to manage earnings recurring rather than nonrecurring income statement items. They collected their sample from the Thomas Securities Equity Database between 1995-1999 and a final sample of 1,765 equity offerings. They find that the unexpected accruals are significantly more positively than for the non-offering firms.

Lu and Lin (2005) examine a popular belief that managers of high valuation companies have a stronger incentive to manipulate future earnings than low valuation companies. Using U.S. data from 1988 to 2004 with a sample of 74,051 firm-year observations, they find the belief to be only half true. A positive relationship between valuation and future discretionary accruals only exists for companies

receiving limited attention. Investigating a single economy may not be enough to have a general conclusion as there exist barriers in terms of laws culture, among others.

Zaluki (2008) investigates the operating performance and the existence of earnings management for a sample of 254 Malaysian IPO companies over the period 1990-2000. Using an accrual-based measure of operating performance, the study finds strong evidence of declining performance in the IPO year and up to three years following IPOs relative to the pre-IPO period. This finding is consistent with the results of prior studies documenting the long-run underperformance of IPO companies. The results also confirm that the decline in post-IPO operating performance is due to the existence of earnings manipulation by the IPO manager at the time of going public. The study was unable to match all companies using all three measures.

Ekoka (2004) presents a cross-sectional analysis of discretionary accruals in detecting earnings management by quoted banks in Nigeria. He employs a regression following Jeter and Shivakumar (1999) cash flow model. The data were collected from the Nigerian Stock exchange library and from the 2004 Stock Exchange Factbook. Due to the fact that the study is a cross-sectional one, only the financial statements of the selected banks for the year ended 2003 were analyzed, and a final sample that consists of 20 banks was reached. The study finds that the total accruals are not from a normal distribution and the F test of the regression shows that there is evidence that earnings management exists in the banks on a cross-sectional basis. The result may be different if it is a time series analysis. Dye (1988) suggests external demand to increase stock prices and internal demand to attain optimal contracting among reasons for firms to engage in earnings management. He shows that as long as accounting data are used in compensation contracts, incentives exist for managers to manage accounting data through the use of discretionary accruals

Guay, Kothari and Watts (2006) assess the effectiveness of alternative discretionary accrual models. Their sample consists of 31,372 firm-year observations. They obtain data from the New York and American Stock Exchange stocks, for which the study estimates the five discretionary accrual models from 1992 -1993. Their evidence suggests that the Healy, DeAngelo industry models are not effective in isolating discretionary accruals that are consistent with opportunism, firm performance, or noise. However, only the Jones and modified Jones models estimate discretionary accruals have the attributes of accruals resulting from management opportunism or accruals enhancing earnings as a performance measure. A better interpretation of their study is that discretionary accruals poorly measure the use of discretionary accruals to manage earnings by managers. Another shortcoming is that their results

cannot be confidently applied to all non-random samples, especially those that are selected carefully and where managerial incentives are strong.

Erickson and Wang (2009) analyze firms using stock as a mode of payment in acquisitions. They hypothesize that such bidders will manage earnings upwards via discretionary accruals in an attempt to increase the share price and thereby decrease the number of shares that must be issued to complete the deal. They find evidence consistent with their expectations: bidders relying on the stock as consideration manage earnings upward as measured with abnormal accruals, whereas bidders in non-stock deals do not. However, their results are unconvincing because the research design does not allow one to test whether the earnings management was successful. Erickson and Wang also use fairness opinions as a rationale for the earnings management, but the range of what constitutes a 'fair' price in a fairness opinion overwhelms any documented association between stock price and earnings. That is, investment banks provide a range of 'fair' prices that can be plus or minus 25–50% around the midpoint of the range. The size of the range would encompass any variation in price that could be otherwise ascribed to earnings management. Like Perry and Williams (1994) and many studies on the economic consequences of accounting choice, they identify a situation in which they believe earnings management is plausible for the opportunistic manager. However, they do not explore plausible alternative explanations.

Sloan (1996) investigates whether stock prices reflect information about future earnings in the NYSE from 1962 to 1991 for a final sample of 40 679 firm-year observations using Compustat data and regression as a tool of analysis. The study documents that a hedging strategy that is long in low accrual firms and short in high accrual firms earns approximately a 12 per cent return per year. Even though the stock prices do not fully reflect all publicly available information, it does not mean that the investors fail to exploit profit opportunities given the reported earnings.

Ali et al. (2000) find that abnormal returns are not lower for firms that are followed by "sophisticated investors", who might better understand the properties of accruals. Moreover, Penman and Zhang (2002) and Hirshleifer et al. (2004) document that consistent with the investor fixation hypothesis, limited attention of investors who focus on accounting profitability without taking into consideration other factors in forecasting future cash profitability could explain the mispricing.

Richardson, Sloan, Soliman, and Tuna (2004) bring a different perspective to the debate and argue that investors do not understand the lower persistence of less reliable accruals, which leads to incorrect investor forecasts of future earnings and cash flows and to their mispricing of current accounting realizations.

Within the forecasting framework, Richardson et al. (2005) use an extended decomposition of the change in non-operating assets to identify components that exhibit high versus low reliability in predicting future operating income. After ranking the components of non-operating assets according to their reliability, they find that the magnitude of the accrual anomaly is greater for the less reliable accruals. This finding is also consistent with that of Xie (2001), as discretionary accruals are expected to be less reliable and therefore less persistent. Additionally, investors seem unable to differentiate between non-discretionary and discretionary accruals, with the latter being less persistent than non-discretionary accruals. Furthermore, the hedging strategy based on discretionary accruals yields a higher abnormal return (11% per year) than the one based on non-discretionary accruals (2.3% per year).

Beneish and Vargus (2002) provide evidence that the accruals anomaly is mainly driven by income-increasing accruals and that the behaviour of insiders is useful in predicting earnings quality. When incorporating information regarding insiders' selling strategy in the implementation of the accruals hedge strategy, these authors are able to obtain an annual abnormal return of 18.1%.

Dechow and Ge (2006) analyze the impact of special items on the accruals anomaly and find that investors seem not to correctly incorporate in the market price the transitory nature of special items and its impact on earnings persistence. The document that earnings persistence is a function of both the sign (positive or negative) and the magnitude of accruals. They find that accruals increase (decrease) the persistence of earnings compared to cash flows in high (low) accrual firms. Dechow and Ge conclude that the lower persistence of earnings in low accrual firms is due to special items. Low accrual firms with special items have higher future returns than other low accrual firms, consistent with Investors not understanding that special items are transitory. Whereas Desai, Rajgopal, and Venkatachalam (2004) provide evidence that the accruals anomaly might be subsumed by the value-glamour effect that has been broadly discussed in finance.

Kraft, Leone, and Wasley (2006) argue that the accrual anomaly could be explained by several errors in the methodology used. These include selection biases, data treatments (truncation or winsorization of the data) and data errors. When these limitations are accounted for, the accrual anomaly is still found, but it is driven mainly by the high accruals portfolio, with both low and high accruals portfolios earning negative, buy and hold, abnormal returns.

Furthermore, Kraft et al. (2006) also support the hypothesis that the accrual anomaly might be driven by operating cash flows, as hypothesized by Desai et al. (2004). The evidence and criticisms described above are based on data from the USA. A few studies have investigated if the accruals anomaly can be



found outside the USA. In Germany, a sample of 826 firm-year observations for the period of 1995 to 2002 was examined by Adamek and Kaserer (2005). They provide evidence that German investors also seem unable to correctly assess the different valuation implications of both accruals and operational cash flows.

### III. RESEARCH METHODOLOGY

#### A. Design, Sample and Data

The study employs both quantitative and descriptive research approaches in order to address the problem. Export facto research design is a research design that carefully reveals the effects of variables under investigation. The data for this study is obtained from the published financial statements of the twenty-one (21) manufacturing firms listed on the Nigerian Stock Exchange (NSE) for the period 2009-2018. The data extracted from this source include

Variables	Definitions and Measurements
Earnings (ROA)	ROA is measured as Net Income for the year
Accruals (ACC)	ACC is measured as Current Assets excluding cash and cash equivalent less current liabilities excluding short term debt and tax payable less depreciation. i.e. $ACC = (\Delta CA - \Delta CASH) - (\Delta CL - \Delta STD - \Delta TP) - DEP$ . All deflated by average assets.
Cash Flow (CF)	CF is obtained as $ROA - ACC$ (deflated by average assets)
Market Price Share (MPS)	MPS is computed from the annual Price (i.e. the closing price of a share of common stock on December 31). It is a measure of stock predictability.
Stock Returns (RET)	RET is computed as $\log(MPS) - \log(MPS(-1))$ . Where MPS(-1) represents lagged MPS or last year MPS.

### IV. RESULTS AND DISCUSSION

The data presented in table 1 below represents descriptive statistics of variables analysed in the study. The variables include ROA, which represents current year earnings, ROA+1 which represents future earnings, constructed as one year ahead earnings (+1), MPS which represents the average annual market price per share of the

Earnings (ROA), Accruals (ACC), Cash flows (CF), and Market price of shares (MPS).

#### B. Model Specification

To test Hypothesis 1 and 2, two regression models are specified. While Equation (1) models the persistence of current earnings, Equation (2) models the differential persistence of earnings components.  $ROA_{t+1} = \beta_0 + \beta_1 CF_t + \beta_2 ACC_t + e_{t+1}$

(1)

$$RET_{t+1} = \beta_0 + \beta_1 CF_t + \beta_2 ACC_t + e_{t+1}$$

(2)

where  $\beta_1$  measures the persistence of cash flows and  $\beta_2$  measures the persistence of accruals, ROA denotes operating income after depreciation, Ret denotes returns computed from the annual market prices of stocks, ACC denotes total accruals, CF denotes cash flows measured as ROA minus ACC (all items are deflated by total assets).

Shares of the sampled firms listed in the Nigerian Stock Exchange, RET, which represents current year returns on shares held by investors of the sampled firms, RET+1, which represents future returns, constructed as one year ahead returns (+1), ACC which represents accrual component of current earnings.

Table 1: Descriptive statistics

	ROA	ROA+1	MPS	RET	RET+1	ACC	CF	CA_ ACC	CL_ ACC
Mean	0.0796	0.0757	251	-0.0011	-0.0030	0.2609	0.3845	0.4663	0.2316
Median	0.0601	0.0565	157	0.0695	0.0695	0.0352	0.1262	0.0104	0.0046
Max	0.5396	0.5396	1175	0.9175	0.9175	0.9345	0.9536	0.5532	0.1595
Min	-0.1397	-0.1397	39	-0.6515	-0.6515	-0.8413	-0.2166	-0.0239	-0.6097
SD	0.1511	0.1328	218	0.5126	0.5129	1.3128	0.9200	2.8749	1.8625

Source: Eviews 10, 2019.

The empirical predictions developed in this section is derived from the properties of the current earnings, future earnings, accrual and cash flow components of current earnings, the market price of the stock, current stock returns and future stock returns of quoted manufacturing firms in Nigeria. The empirical analysis provides descriptive statistics relating to these components. The descriptive statistics on the characteristics of average (mean), median, maximum,

minimum and standard deviation of the variables included in the study.

To alleviate the effects of spurious outliers, extreme values are limited in the statistical data, with all variables of accruals winsorized at 1% and 99%. The characteristic result for ACC shows that the mean value of ACC is 0.26, which indicates that the average accruals of Nigerian Manufacturing firms are around 26% of total assets. This positive mean agrees with the positive mean value of accruals documented by Richardson et al. (2005) in the US and Okpa

(2018) in the UK. Overall, accruals represent about 26 per cent of total assets employed in the Nigerian manufacturing firms' environment. While the accrual value is around 4% of total assets in the US and around 3% of total assets in the UK, it is about 26% of total assets in Nigeria. This means that income management is higher in Nigeria compared to advanced countries of the world, which reduces the persistence of earnings, as a larger volume of assets is composed of accruals. Again, the accrual results mean that a large proportion of current earnings reported by manufacturing companies are composed of accrual earnings relative to the situation in the advanced markets of the UK and US.

Further analysis of the components of accrual reveals the following. Accruals related to current assets (CA\_ACC) came up with an average of 0.4663, and accruals related to current liabilities (CL\_ACC) came up with an average of 0.2316. The results indicate that there is more subjectivity in earnings coming from measurement errors in current assets than in current liabilities. This agrees with Okpa (2018), who found that working capital accruals are measured as change in Current Operating Assets ( $\Delta$ COA) less change in current operating liabilities ( $\Delta$ COL). The major underlying assets in COA are inventory and accounts receivables, and both are measured with a low degree of reliability. Inventory uses subjective cost allocations using LIFO, FIFO, and subjective write-down decisions based on fair value estimates. Accounts receivables have the subjective estimation of uncollectible amounts and are used to manipulate earnings via trade-loading and premature revenue recognition. The major underlying liability in the COL is accounts payable, measured with a high degree of reliability since they are financial obligations to suppliers recorded at their face value

and discounts estimation verified by suppliers. Thus, accruals emanating from current assets estimation exceed accruals emanating from current liability estimation.

The results of the cash flows component of current earnings show a mean value of about 38% of total assets, with maximum cash flows for the period under study amounting to about 95% and minimum cash flows coming up to about -21%. Overall, the cash flows results indicate that cash flows in the assets composition of manufacturing firms are greater than the total accruals in the composition of the assets. The results indicate that reported earnings in the Nigerian manufacturing sector are also comprised of cash flows, which are higher than the percentage of accruals.

The results for current and future earnings reveal average values of 0.0796 and 0.0757, respectively. This indicates that average earnings in the industry stand at about 7%-8% of total assets. The minimum and maximum values of ROA during the study period are 0.5396 and -0.1397, respectively. These values imply that some sampled companies reported losses while others reported profits during the study period, with the median earnings being between 5-6% of total assets employed.

The market value of shares reveals that, on average, shares are priced at 251 kobos in the manufacturing industry, with maximum and median share prices being 1175 kobos and 39 kobos, in the period studied. The returns on the shares computed using natural logarithm shows average negative returns of 0.001 and 0.003 for current and future returns. This shows that returns in the market are negative, indicating a fall in share prices over time. The results reveal the poor performance of the stocks (shares) of the manufacturing industry.

Table 2. Correlations coefficient and (p-values) of accruals, cash flows, earnings and stock returns

	ROA	ROA+1	RET	RET+1	ACC	CF
ROA	1.0000					
ROA+1	0.7980	1.0000				
	0.0000					
RET	0.1940	0.0897	1.0000			
	0.0100	0.4667				
RET+1	-0.0615	-0.1950	0.8976	1.0000		
	0.6182	0.1131	0.0000			
ACC	0.0217	0.1395	-0.3166	-0.4894	1.0000	
	0.0304	0.2565	0.0452	0.0031		
CF	0.6281	0.5119	0.1572	0.1895	-0.7998	1.0000
	0.0010	0.0023	0.0500	0.04911	0.0040	

Source: Eviews 10, 2019

This section analyses the relation between accruals (ACC), cash flows (CF), earnings (ROA) and stock returns (RET). The Pearson correlation coefficient, followed by the sig. P values (in italics) are expressed in the tables. Table 2 shows that ACC is significantly correlated with future earnings and future returns, with the correlations among accruals and future earnings being positive and that of accruals and future returns being negative. This correlation result is expected as it explains the accrual anomaly. The correlation between cash flows and accruals is also negative and statistically significant. The simple

relationships evidenced in this study for Nigerian Manufacturing firms are of importance, given that investors are very oriented towards firms yielding high earnings and might fail to realize that earnings are not always accompanied by a strong level of cash flow. The negative relationship between accruals and future returns is called accrual anomaly documented in extensive literature and scholarly works both in developed and developing markets.

**Table 3: Average Slope (coefficient), t-statistics and P-value from annual Cross-section regressions of hypotheses1**

<b>Panel A: OLS Regressions for the quality of earnings components</b>					
<b>PANEL A: <math>ROA_{it+1} = \beta_0 + \beta_1 ROA_t + \epsilon_{it+1}</math></b>					
	Intercept	ROA	R <sup>2</sup>	Eqn.	
Coefficient	0.028	0.423	0.53	1	
t-statistics		11.53			
<i>p-value</i>		<i>0.0000</i>			
<b>PANEL B: <math>ROA_{it+1} = \beta_0 + \beta_1 CF_t + \beta_2 ACC_{it} + \epsilon_{it+1}</math></b>					
	Intercept	CF	ACCESS	R <sup>2</sup>	Eqn.
Coefficient	0.039	0.562	0.145	0.67	2
t-statistics		8.234	3.213		
<i>p-value</i>		<i>0.0000</i>	<i>0.0000</i>		

Source: Eviews, 2019

The results from Panel A show that current earnings have positive predictive power on future earnings. This means that earnings are mean reverting, with a predictive power of 0.423. The results indicate a predictive power of current earnings of about 42%, which is statistically significant at the 5% level (with t-stats=11.53>0.21, and p-value=0.000<0.05). Thus, current earnings are persistent.

Panel B results show that cash flows and accruals, which are components of current earnings, have predictive power on future earnings. Cash flow has a 0.562 persistence, which is significant at the 0.05 level, and accruals have persistence of 0.145, which is significant at the 0.05 level of significance. Both accruals and cash flows are significant forecasters of future earnings.

Table 3 above shows that cash flow is of more quality and predict future earnings more than the accrual component. It is regarded as having more persistence (0.56, p-0.000) than the accrual component of current earnings (0.145, p-0.000). Hence, to test the significant differences in the persistence of cash flows and accruals components of current earnings, the Wald coefficient test is employed.

**Table 4. Wald Test**

Test Statistic	Value	df	P-Value
t-statistics	16.70	66	<i>0.0099</i>
F-statistics	27.85	(1, 66)	<i>0.0098</i>
Chi-square	27.875	1	<i>0.0095</i>
$\beta_1 - \beta_2$	0.121		<i>0.0071</i>

Source: Eviews, 2019

The wald test of coefficient restriction, with the null conjecture, that  $\beta_1 = \beta_2$  revealed that  $\beta_1$  and  $\beta_2$  are significantly different, with p-values of the three test statistics being less than 0.05 alpha level. Further tests revealed that the difference between  $\beta_1$  and  $\beta_2$  is positive and significantly significant, with a positive difference of 0.121(which is 12%). The differential persistence is because Cash flow is less subject to distortion than accrual. The accrual component is composed of deferrals, valuations and allocations, all of which encompass extreme degrees of subjectivity than what enters the estimation of cash flow. The findings confirm with several studies that have reported lower earnings persistence of the accrual component (e.g. Sloan, 1996; Richardson et al., 2005; Okpa, 2018). Thus, the results indicate that accruals and cash flows persistence have significantly different effects on future earnings of manufacturing firms in Nigeria, with the cash flows component being a more positive forecast than accruals.

Table 5. OLS Regressions for the pricing of Earnings components

$$RET_{it+1} = \beta_0 + \beta_1 CF_t + \beta_2 ACC_{it} + \varepsilon_{it+1}$$

	Intercept	CF	ACCESS	R <sup>2</sup>	Eqn.
Coefficient	0.096	0.193	0.107	0.21	3
t-statistics		4.028	3.138		
p-value		0.0045	0.0031		

Source: Eviews, 2019

Table 5 shows that cash quality is a more positive determinant of returns than accruals, with a coefficient of 0.19 on the cash flow component and 0.11 on the accrual component. Overall, these components of current earnings exact a significant influence on future returns, showing the presence of mispricing of earnings components. The pricing of earnings components, with the positive and significant coefficient of 0.107 in the accrual component, indicate that Nigerian investors do not fully understand the implications of accrual for earnings persistence and thus undervalue the accrual component of earnings. This agrees with the naive investor hypothesis (EFH) advanced in the scholarly work of Sloan. The results indicate that stock prices in Nigeria do not fully reflect information in accruals about future earnings. Thus, in the Nigerian

manufacturing sector premises, both accruals and cash flows component of earnings is underestimated, with greater mispricing associated with the accrual component. The findings agree with Richardson et al. (2005), who found that investors do not understand the lower persistence of accruals, which leads to incorrect investor forecasts of future earnings and cash flows and to their mispricing of current accounting realizations. The null hypothesis three is thereby rejected. The research upholds that there is significant security mispricing associated with accruals and cash flows persistence information of manufacturing firms in Nigeria.

## V. CONCLUSION

The work concludes that accruals and cash flows have significant implications on earnings persistence, with significant mispricing of these components of current earnings found in the valuation of manufacturing firms' securities.

The results of this paper fuel the need for investors and key stakeholders to pursue more future signalling disclosures that provide information of all components of earnings in order to understand the quality and persistence of each component, with their implication for future stock prediction.

The work recommends that:

1. Management of manufacturing firms should increase disclosure of the information of accruals and cash flows, as it plays a role in equity markets by reducing information asymmetries, increasing liquidity, and reducing the cost of capital. This is because

more informative disclosures allow investors to more fully understand the information in accruals and cash flow for future earnings.

2. The estimation of current assets accruals should be regulated. This will help reduce the volume of accruals in a firm, which will further improve the quality, persistence, predictive power, and mean reversion of current earnings.
3. The Nigerian Stock exchange should equip investors with the intellectual tools to decipher the information regarding components of earning reported in a financial statement. This will enhance their understanding of accruals and cash flows differential persistence information in their pricing strategies, thus, debunking the naive investor hypothesis.

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