Earnings Persistence and Firm Performance: Implications of Analysts’ Accurate Forecast Ability from the Emerging Market of Nigeria

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Abstract
This paper empirically examined the potency and value relevance of earnings persistence (EPERS) and its effect on firm performance and the implications of the analysts’ accurate forecast ability from the emerging market of Nigeria. The study adopted the expo facto research design and sampled 51 companies listed on the Nigerian Stock Exchange using stratified random sampling techniques from all the sectors from the 2000-2016 periods. Descriptive and Panel data regression statistics were employed in the analysis of the effect of earnings persistence on firm performance. Pre and post estimation tests were carried out: variance inflation factor (VIF) showed no evidence of multi-collinearity among the variables, correlation matrix test did not reveal any multi-collinearity problem, normality test using Jarque-Bera test of normality posed no problem to the study. While Breusch-Pagan/Cook-Weisberg tests to assess the variance in the error terms (residuals) of the models, the results indicated that all the models did not suffer from heteroskedasticity. Notwithstanding, panel robust standard error (PRSR) was employed to control the heteroscedasticity. The study revealed that earnings persistence (EPERS) had a negative and no significant effect on firm performance (Tobin’s Q). Leverage (LEV) exhibited a positive relationship whereas firm size (FRMSIZE) revealed a negative relationship with Tobin’s Q (TQ). Also based on findings, a weak growth trend was established between EPERS and Tobin’s Q. Earnings persistence resulting from discretionary and opportunistic earnings could give inaccurate forecasting ability. Consequently, the study recommended that analysts should be watchful of the stable occurrence of earnings when evaluating reported financial statements, without which, predictions made from them could have negative and misleading implications.

Keywords: Earning persistence; Forecast ability; Firm performance; Economic value added

Introduction
The integrity of the reported earnings now seems questionable, despite the adoption of International Financial Reporting Standards (IFRS). One of the desires of financial analysts is to see that firms’ earnings are consistent in order to evaluate accurately, the degree to which earnings reflect the underlying fundamentals of the firm performance over the years and not just one-off performance [1]. Confidence in reported earnings are fast eroding away because investors and the analysts now believe there are possibilities of opportunistic earnings and biased reporting by the management to cover up incompetence, inefficiency and apprehension in meeting the expectations of the investors and other stakeholders [2]. Managers play all tricks, both at the level of form or content, to respond to market expectations of the investors and other stakeholders [2]. Naturally, earnings are regarded to be of high quality when they are persistent and not a product of earnings management, hence deemed desirable by analysts and investors for investment decisions, because when earnings are persistency, they can be used as a predictor for the future performance of a company while analysts appreciate them as a good predictive tool for investment forecast [5,6].

Earnings persistence is associated with an inclusive performance of a firm as portrayed in her corporate goal attainment, profits sustained over periods of time and non-earnings opportunistic practices involvement. Naturally, earnings persistence is the time-series parameter that measures the magnitude of the effect of permanent earnings innovation on expected future earnings [7]. Investors largely depend on the advisory role of analysts in the face of risk and uncertainties associated with investments and portfolio diversifications, since financial reports is a reflection of financial performance and a general measure of a company’s financial health over a period of time [5]. Investors and financial analysts, desire that the financial reports are the true underlying reality of operational and financial performance; that the market share prices being reported are a true reflection of the true underlying reality of operational and financial performance; and that the market share prices being reported are a true reflection of the management competencies and in maximizing investors’ portfolios, so as not to mislead unsuspected investors as confirmed in the previous studies [8,9], since reported profit as a reflection of true firm performance to aid investors economic decisions [10].

Against this backdrop, and in extending prior related literature in earning persistence, the objective of this paper is to examine empirically the effect and implication of earnings persistence on firm performance, and analysts accurate forecast ability in evaluating and predicting future earnings of firms and advising investors in making informed and non-misleading investment decisions from the listed companies in Nigeria, using descriptive and inferential analyses to examine the trend of earnings persistence of 51 listed companies from the Nigerian Stock Exchange towards expanding the emerging market frontier in accounting.

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Literature and Hypothesis Development

Earnings persistence

The study of Schipper and Vincent [11] defined earnings persistence as a measure of earnings quality revealing the sustainability of earnings. Other studies estimate earnings persistence as a regression of the future value as one of the variables of earnings quality on its current value [12,13]. The concept of earnings persistence shows the reoccurrence of earnings. Similarly, the study of Prapaporn [14] opined that earnings with low earnings persistence may not be an appropriate performance measure for chief executives officers (CEOs) because earnings may not signal their efforts in general terms.

Earnings quality is seen as only useful if it precisely reveals the reality of the company, suggesting that financial statements show an accurate and unbiased state of the company, giving a precise, timely, and transparent, persistent and comparable financial information [15]. However, the study of Dechow et al. [16] elucidated more on the logic behind earnings persistence: That if company Y market share price shows more persistence earnings than company X in perpetuity, then company Y earnings are a more useful synthetic measure of future performance and annualizing its current earnings will result in fewer estimation error.

Firm performance

Firm performance could be referred to as the degree to which a company’s overall objectives including profitability sustaining and financial goals have been achieved [17]. It could also include the ability to measure the results of a company’s policies and set operations in monetary terms. Firm performance, ideally, measures the general financial and economic health condition of a company over a given period of time, and could as well be used to compare similar companies within and across the same industry or sector. Further argued that profitability is the most common measure of a company’s financial performance, apart from meeting its target obligations. Profitability studies classify measures and assess the performance of the firm in terms of the profits it earns with regards to the shareholders’ investment or capital employed in the business.

Most investors only invest in the returns and the profit that the investment yields, therefore profitability could be used as a measure of the success of an investment. Furthermore, profitability is the business’s ability to create earnings in relation to its expenses and other related costs of the business incurred during the relevant period. Therefore, the ability of a company to continue to operate and be in business largely depends on its ability to generate profit and continue to exist. Hifza [18] stated that profitability is one of the important aims of financial management since the prime aim of the financial investment is to maximize the owners’ wealth and profitability is very germane as a determinant of business investment success and financial performance. The market share price of companies depends fundamentally on the ability of the company to make a profit on a continuous basis and ensure that the going concern principle is not being threatened [19].

Theoretical framework

Clark’s theory of profitability emphasizes economic analysis of profit and its clear future considerations. According to Clark’s theory of profitability, the underlying assumptions of any economy without profit intentions are termed as that of perfect market conditions, static state, constant factors of production, absence of monopoly not predisposed to change and the market is assumed to be perfect; hence the absence of monopoly and entrepreneurial efforts are rewarded according to management wage levels. Siddiqi [20] stated that in such an economy, the society acts and lives but does so in a changeless manner.

Therefore, Clark’s theory highlights that economies driven by profits will not suffer from sudden collapse. It is this frictional delay that the investor takes advantage of and makes transactional profits before equilibrium returns and consumers expected profits. Siddiqi [20] further argued that profit is a transitional occurrence as its temporary nature demands from the investor a dynamic endeavor to seek out or generate opportunity on which to capitalize even as economies are dynamic. Clark’s profitability theory further explains that five outlined variables are never static: population and capital are in constant growth, innovation in production and management of resources are intermittently researched and consumers’ demands do vary often and subject to changes in taste, style and trends effect. The investors, as a result, find permanence for as long as there are changes, react before competitors and organizes efforts with sound information of market changes.

Free cash flow theory is framed for matured firms that are likely to over-invest. It says that high debt levels will increase value, regardless of the threat of financial distress, especially, when a company’s operating cash flow significantly exceeds its profitable investment opportunities [21]. The profit earning capacity grows the value of the company despite the threat of financial distress. Firms with a negative free cash flow increase their debt ratio to respond to the lack of internal funds. Therefore, the percentage adjustment is small for firms with relatively more debt than for firms with relatively low debt.

Empirical review

Earnings persistence and firm performance: Myers et al. [21] examined the effect of firm performance through profitability on firm value. The study employed secondary data obtained from manufacturing companies listed on the floor of the Indonesia Stock Exchange for a period of 6 years 2009-2014. The study found that profitability as a measure of firm performance using Tobin’s Q has a positive effect on firm value. The study further found that dividend payment as a sign of profitability increases the firm share price.

From Iran, Sabrin et al. [22] examined the effect of firm size and financial leverage on the relationship between cost management and the relevance of accounting information on the companies listed on the Tehran Stock Exchange [23]. The study used 101 companies for a period of 10 years (2004-2013) with Ohlson’s pattern in which the relevance of earnings per share and book value per share were examined using market value per share. The study found that cost management significantly and positively affects share value. The study also found that financial leverage doesn’t have a significant impact on firm value.

From the Philippines, Sucuauh and Cambarihan [24] study on the measuring ability of Tobin’s Q, examined the impact of profitability on the firm value of diversified companies in the Philippines. The main objective of the study was to determine if there is a significant relationship between the company’s profile such as industry, company age, and its profitability with the firm value using Tobin’s Q model. The study employed 86 diversified companies listed in the Philippines Stock Exchange. The result from the study revealed that, of the three factors assumed to influence the value of the firm using Tobin’s model, only profitability shows a significant positive impact on the firm’s value. The study concluded that Tobin’s Q is considered as one of the best predictors of a market situation and it can also explain the majority of the investment variability.
Methodology

Research design

This study adopted stratified random sampling techniques in selecting 51 companies out of 173 listed firms on the Nigerian Stock Exchange (NSE) from 2000-2016. The adequacy of the information content of the published financial statements was a determining factor in the final selection of a company as a unit of the study, as any company with insignificant information and/or missing data relevant to the study was dropped. Data were extracted from published financial statements of the sampled firms for the period under consideration. Descriptive and Panel data analyses were used to examine the trend of earnings persistence and firm performance and also the impact of earnings persistence on firm performance with the identified variables and specified data regression models using unobserved effects model (UEM). The UEM can either be fixed effect or random Effect depending on the Hausman test indicated between fixed effect and model and random effect model, implying that any of the models could be used.

Pre-estimation tests

Correlation matrix: Correlation matrix was used to determine whether there are bivariate relationship between each pair of the dependent and independent variables considered in this study and to ensure that the correlations among the explanatory variables are not so high to the extent of posing multi-collinearity problems no evidence of multi-collinearity among the variables. EPERS is positively and insignificantly correlated with LEV and TQ at 5% level of significance. All the correlation coefficients between EPERS, LEV, FRMSIZE, and TQ (r=0.079, 0.227 and 0.015) indicate insignificant correlation with TQ. The correlations between LEV and TQ were significant among the variables. EPERS is positively and insignificantly correlated with LEV. No evidence of multi-collinearity problems no evidence of multi-collinearity and independent variables considered in this study and to ensure that the result of the Hausman test indicated between fixed effect and model and random effect model, implying that any of the models could be used.

Variance inflation factor: Variance inflation factor (VIF) test was carried out for robustness, the variables considered in this study and to ensure that the correlations among the explanatory variables are not so high to the extent of posing multi-collinearity problems no evidence of multi-collinearity among the variables. EPERS is positively and insignificantly correlated with LEV and TQ at 5% level of significance. All the correlation coefficients between EPERS, LEV, FRMSIZE, and TQ (r=0.079, 0.227 and 0.015) indicate insignificant correlation with TQ. The correlations between LEV and TQ were significant among the variables. EPERS is positively and insignificantly correlated with LEV. No evidence of multi-collinearity problems no evidence of multi-collinearity and independent variables considered in this study and to ensure that the result of the Hausman test indicated between fixed effect and model and random effect model, implying that any of the models could be used.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Model without firms’ characteristics (Panel A)</th>
<th>Model with firms’ characteristics (Panel B)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>VIF (1/VIF)</td>
<td>VIF (1/VIF)</td>
</tr>
<tr>
<td>EPERS</td>
<td>1.01</td>
<td>0.988</td>
</tr>
<tr>
<td>LEV</td>
<td>1.05</td>
<td>0.949</td>
</tr>
<tr>
<td>FRMSIZE</td>
<td>1.12</td>
<td>0.896</td>
</tr>
<tr>
<td>Mean VIF</td>
<td>1.05</td>
<td>1.06</td>
</tr>
</tbody>
</table>

Table 2: Variance inflation factor. Source: Author’s computation, underlying data from annual reports of firms listed on NSE. The earnings persistence indicators are computed using a 5-year rolling window.
research works have found indication that firm valuation is positively related to growth opportunities. The firm size in this study, consistent with Gaio and Raposo [26], is measured as the log of total assets in the thousands of Naira of firm $i$ for time period $t$.

$$\text{FRMSIZE} = \log \text{Total Assets}$$ (4)

**Research question:** How does earnings persistence impact firm performance and control variables of firm size and leverage of quoted companies in Nigeria?

**Research hypothesis, $H_0$:** Earnings persistence does not have any significant impact on firm performance and the control variables of firm size and leverage of quoted companies in Nigeria.

**Operationalization of variables and model specification**

- $Y=f(XZ)$
- $Y=$ Firm performance
- $X=$ Earnings persistence
- $Z=$ Control variable
- $Y_i=$ Tobin’s (TQ)
- $X_i=$ Earnings persistence (EPERS)
- $Z_i=$ Firm size (FRMSIZE)
- $X_z=$ Leverage (LEV)

**Functional relationship**

$$TQ = \beta_0 + \beta_1EPERS \_i + \beta_2FRMSIZE \_i + \beta_3LEV \_i + \mu_i$$

Based on the coefficient of the variables, the result further reveals that an increase in the level of leverage will lead to an increase of 0.802 on firm performance (Tobin’s Q). The Breusch and Pagan Lagrangian multiplier test for random effects figure which is 799.07 ($p=0.000$) strongly suggest the rejection of the null hypothesis of “no panel effect”, therefore accepts the alternative hypothesis and concludes that panel is appropriate. The result, therefore, shows that the F-statistics value of (11.000; $p=0.000$) associated with the lead model indicates the significance of the model at a 1% level of significance. In order word, it implies that all the independent variable and the control variables are jointly and statistically significant in affecting $TQ$. The $R^2=0.186$ indicates that 18.6% of variations in $TQ$ are accounted for by the independent variables (Table 3).

**Data Analysis, Results and Discussions**

**Trend analysis**

Firm performance (Tobin’s Q) in Figure 1A reveals a growth of approximately 3% for the period up to 2015. However, earnings persistence grew by 33% between the periods. It further suggests that firm performance and earnings persistence moved in the same direction suggesting that firm performance reacted as the earnings reduces within the period under consideration.

**Regression**

Based on the Hausman-statistics (66.76; $p=0.000$), the null hypothesis that the individual-level effects are adequately modeled by a random-effects model is rejected. Hence, the fixed effect (FE) model is chosen as the lead model for interpretation. From the model, the estimated coefficients indicate that earnings persistence (EPERS) and firm size (FRMSIZE) are all negatively signed ($\beta_1=-0.001; \beta_2=-0.763<0$). These are not in consonance with expectations. However, leverage (LEV) is positively signed in line with a priori expectation $\beta_3=0.802>0$.

Based on the coefficient of the variables, the result further reveals that an increase in the level of leverage will lead to an increase of 0.802 on firm performance (Tobin’s Q). The Breusch and Pagan Lagrangian multiplier test for random effects figure which is 799.07 ($p=0.000$) strongly suggest the rejection of the null hypothesis of “no panel effect”, therefore accepts the alternative hypothesis and concludes that panel is appropriate. The result, therefore, shows that the F-statistics value of (11.000; $p=0.000$) associated with the lead model indicates the significance of the model at a 1% level of significance. In order word, it implies that all the independent variable and the control variables are jointly and statistically significant in affecting $TQ$. The $R^2=0.186$ indicates that 18.6% of variations in $TQ$ are accounted for by the independent variables (Table 3).

**Models**

**Pool regression model:** The starting model is the pooled regression model where it is assumed that any heterogeneity across firms has been averaged out. The pooled estimation model is given as:

$$TQ \_i = \beta_0 + \beta_1EPERS \_i + \beta_2FRMSIZE \_i + \beta_3LEV \_i + \mu_i$$

**Random effect model:** The random effect model assumes that the individual heterogeneity is uncorrelated with (or, strongly, statistically independent of) all the observed variables. Going by this assumption the following models are specified:

$$TQ \_i = \beta_0 + \beta_1EPERS \_i + \beta_2FRMSIZE \_i + \beta_3LEV \_i + \sum_{t=1}^{n} D_t + \mu_i$$
study. It corroborated previous conclusions in the literature, notably the study of Ali et al. [33]. They found an inverse association between leverage (LEV) and earnings persistence and share price (SP) of listed manufacturing firms in Nigeria. The study also revealed that a positive association exists between firm size and book value; this also aligns with Robert and Jane [34]. In like fashion for Frank and Goyal [35] and Acheampong et al. [36], there is further evidence that leverage has a positive relationship with Tobin’s Q while firm size has a negative relationship with the performance indicator. The result equally revealed a negative effect of leverage on market share price of the companies.

Also on leverage, the study found a positive and significant relationship between leverage and firm performance (TQ). This is consistent with the findings and studies of that found that leverage is positively related to firm value, and also that value of a leveraged firm will be greater than the value of a similar unleveraged firm [37-39]. Also, some studies confirm a positive effect of leverage on firm value especially when inflation is higher [35,40,41]. However, in contrary findings, and contributing to this argument, find a negative influence of leverage on the firm value which tends to be strong if free cash flow is higher [42-44]. This could be due to debt covenants, or that the proportion of debt position in the company’s capital structure is affecting their performance to enhance market value. The high-interest rates of borrowing for investment could have also reflected in the companies’ performance. The study further revealed that though earnings persistence affects firm performance the level of impact is very insignificant.

### Post estimation tests

**Normality test:** Jarque-Bera test to assess the normality in the error terms (residuals) of the models. The results as presented in Table 4 show indication no sign of normality. Nevertheless, this does not represent much of a problem since we are dealing with a sufficiently large sample of data [45].

**Heteroskedasticity test:** This study used Breusch-Pagan/Cook-Wesberg test to assess the variance in the error terms (residuals) of

### Table 3: Earnings persistence, Lev, and Firm size indicators and firm performance (Tobin’s Q).

<table>
<thead>
<tr>
<th>Variables</th>
<th>-1 OLS</th>
<th>-2 RE</th>
<th>-3 FE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Coeff.</td>
<td>t-stat</td>
<td>p-value</td>
</tr>
<tr>
<td>EPERS</td>
<td>0.120*</td>
<td>1.73</td>
<td>0.085</td>
</tr>
<tr>
<td>LEV</td>
<td>0.656***</td>
<td>4.03</td>
<td>0</td>
</tr>
<tr>
<td>FRMSIZE</td>
<td>0.046</td>
<td>0.71</td>
<td>0.476</td>
</tr>
<tr>
<td>Constant</td>
<td>1.232**</td>
<td>2.18</td>
<td>0.03</td>
</tr>
</tbody>
</table>

**Observations**: 561
**R-squared**: 0.108
**Adj. R-squared**: 0.096
**F-test**: 8.03
**LM Test (Prob)**: 799.07 (0.000)
**Hausman (Prob)**: 66.76 (0.000)

*The dependent variable is the earnings persistence-Tobin’s Q (TQ: ***p-value<0.01, ** p-value<0.05, * p-value<0.1)*

**EPERS:** Earning persistence; **LEV:** Leverage; **FRMSIZE:** Firm Size

Figure 1A: Trend analysis, earnings persistence and firm performance. **Source:** Authors’ computation, 2018.
Recommendations and Contribution to Knowledge

The leverage proportion of the capital structure profile of Nigerian companies needs to be re-examined as the companies appeared to be highly geared judging from the study result. Leverage indexes policies also need to be revisited by government regulatory agencies for better friendly borrowing conditions from the financial institutions. Furthermore, the analysts should pay more attention to the earnings consistency trend of the sampled companies in order to have an accurate evaluation of reported earnings for a more reliable predictive guide for investors and other stakeholders. The persistency of reported earnings in the Nigerian listed companies must be critically considered by the analysts in making prediction and forecasting, without which, predictions made from them could have negative and misleading implications.

This study extends empirically, the frontier of the emerging market on earnings persistence and firm performance in Accounting in Nigeria. The study made empirical and theoretical contributions to the body literature by providing further evidence on the impact of earnings persistence on firm performance and that sustainability and persistence of earnings are important for future investment projections by analysts and investors. From the study, managers should understand the dynamics of the controlling variables of firm size, leverage plans, to enhance firm performance and other expected operational results.

Suggestion for further studies

This paper used only earnings persistence as one of the attributes of earnings quality. It would be interesting if further studies are carried out using earnings quality and its full known seven attributes: accounting-based earnings quality attributes (accruals quality, earnings persistence, earnings predictability and earning smoothness) and market-based earnings quality attributes (value relevance, earnings timeliness, and earnings conservatism) to investigate their effects on firm performance.

References


