



Stock Market Returns and Shareholders' Wealth Sustainability of Companies Listed on the Nigerian Stock Exchange

Adekunle Orelope Koleosho^{1*}, Folajimi Festus Adegbie¹
and Ayooluwa Olotu Ajayi-Owoeye¹

¹Department of Accounting, School of Management Sciences, Babcock University, Ilishan Remo, Nigeria.

Authors' contributions

This work was carried out in collaboration among all authors. Author AOK designed the study, performed the statistical analysis, wrote the protocol and wrote the first draft of the manuscript. Author AAO managed the analyses of the study. Author FFA managed the literature searches. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJEBA/2020/v16i230233

Editor(s):

(1) Dr. María-Dolores Guillamón, University of Murcia, Spain.

Reviewers:

(1) Parul Bhatia, Apeejay School of Management, India.

(2) Afzal Ahmed, Shaheed Zulfiqar Ali Bhutto Institute of Science and Technology, Pakistan.

Complete Peer review History: <http://www.sdiarticle4.com/review-history/58368>

Data Article

Received 20 April 2020

Accepted 26 June 2020

Published 16 July 2020

ABSTRACT

Sustainability of shareholder's wealth has been a subject of discussion globally due to various decisions of the managers and the effect it has on company's performance. Various corporate actions and information about the companies are disseminated over time and studies have shown the effect on shareholder's wealth. This study examined the effect of capital market returns on sustainability of shareholder's wealth in Nigeria Listed Companies. The study adopted *ex-post facto* research design. A sample of 57 companies from a target population of 168 companies listed on the Nigerian Stock Exchange (NSE) as December 2018 was randomly drawn across the various market sectors for the panel data. The study used secondary data from the NSE, CBN and companies' data on the Bloomberg Terminals. Validity and reliability were premised on the statutory audit of the financial statement. The study adopted descriptive and inferential (Regression and Correlation) statistics to analyze the data. The study found that the stock market returns indicators (dividend per share, earnings and Leverage) have joint and statistically significant relationship with

*Corresponding author: E-mail: kolkun2001@gmail.com;

market price per share: DPS, EPS and LEV with *Adjusted R*² = 0.738, *F*(3, 796) = 54.74, *p* = 0.108 > 0.05. The study concluded that stock market returns measured by dividend and earnings have a significant effect on the shareholders' wealth while leverage exerts a negative effect on Market Price per share. The study recommended that the management of the companies should embrace the payment of dividend to shareholders while ensuring the growth of earnings over the period to sustain shareholder's wealth.

Keywords: Dividend; earnings; leverage; shareholders wealth; market price per share; stock market; returns.

1. INTRODUCTION

Shareholder's wealth relates to the summation of the benefits due to the investors over a period of time. This wealth can be maximized or minimized where information about the company's investments is free or not freely available depending on the quality of such information. The primary objective of the firm is to create value or wealth for the owners of the business and this should maximize their returns over a period of time [1]. The improvement in shareholders' wealth is directly related to the performance of the company. The performance of the company is driven by the investment decision taken over a period of time. These investment decisions are a function of the information available for such investments. When managers are evaluating such investments, they do not only consider its accuracy but its availability to the general public [2].

Khan and Hussanie [3], posit that, to maximise shareholders wealth and ensure its sustainability, the business concern should take decisions that optimise/maximises the market value of the shares. They proceeded and concluded that the market value of the shares serves as an efficiency and effectiveness indicator performance over a period of time. Due to the effects of stock price movements on shareholder's wealth, the investors are concern about the market efficiency and how this affects the value of the shares over time [4]. Shareholders wealth can be measured through the market price of the companies and as such the volatility of the share prices will determine the position of the shareholders over the period, hence investors will be concern about market efficiency as the share prices affect their wealth, [4]. Various decisions are taken by companies and these decisions can affect shareholder's wealth over time. Some of these decisions are dividend decisions and financing decisions. Where dividend decisions are concerned, it can affect the long term financing of the business

which in turn can affect the earnings performance of the company [5].

Investors expect a sizeable return on their investments in the companies and these returns can be in terms of earnings performance and the dividend payouts. The expectation of the investors/shareholders is therefore always high when it comes to information announcements of the corporate actions [6]. In Nigeria, the activities of companies have brought about doubts about the ability of the companies to adequately meet investor's expectations. Companies have performed adequately well, released its financials to the public and market reaction was negative.

In recent times, there have been various conclusions on the efficiency of the Nigerian capital market through various approaches like the event studies and stock indices. This study used the earnings and dividend expectation at year-end and found out that earnings and dividends have an impact on the market price, hence predicted the weak-form efficiency of the capital market.

This study has contributed theoretically to the discourse by adopting the Random Walk theory and the Efficient Market Hypothesis theory and has proffered some set of recommendations to improve shareholder's wealth for the companies listed on the Nigerian Stock Exchange. It also contributed to the dividend supremacy school of thought that dividend is important in the valuation of company's shares.

The study will be beneficial to Equity analysts would be able to project the impact of the various corporate actions on the performance of the sectors as well as the Nigerian capital market at large. Corporate organisations would be able to determine the impact of dividend payments expectation and other corporate actions expectation on the performance of the companies as well as their impact on shareholder's wealth. The information efficiency of the market would be determined via the

expectation of dividend and earnings payment and the companies would know when to release appropriate information to the market to ensure stakeholder's confidence over the period. Shareholders and stakeholders would be able to ascertain how various corporate action expectations affect the worth of their investments over a period of time and this would assist them in making adequate decisions whether to hold or divest investments. The Nigerian Stock Exchange management would be able to ascertain whether the market is still efficient in the weak form as established by various researchers or as moved away from the weak form. The expectation effects of corporate actions on the markets would be determined and how this affects the shareholder's wealth. The NSE would also know what policy changes are to be put in place to drive market performance and ensure the sustainability of shareholder's wealth. The government would be able to set in motion various regulatory policies in conjunction with the NSE to ensure shareholder's wealth is protected all the time.

The research points out to the investors the importance of dividend and earnings on the sustainability of shareholder's wealth. This will enable investors and potential investors to know the companies to invest in if their investments are to be sustained. The investors will know that companies with track records of dividend and earnings performance will enable them to sustain their investments. The research will draw again on the importance of dividend and earnings performance on the sustainability of shareholder's wealth. The conclusion on the positive effect of dividend on market price of the company will lend credence to the dividend supremacy theory which states that dividend is important in the determination of the value of the shares. It will also once more emphasise the weak form of the Nigerian Capital Market as well as the random-walk theory.

1.1 Statement of the Problem

The Nigerian capital market has been growing rapidly over the years due to the influx of foreign investors into the economy. Of particular attraction is the Nigerian Stock Exchange (NSE) where equity assets are traded and transfer of wealth is effected between the surplus and the deficit sector of the economy. According to the Central bank of Nigeria annual activity report [7], the market turnover on the Nigerian Stock Exchange (NSE) decreased by 25.27% (73.35

billion shares in 2016) year-on-year when compared with the closing figure in 2015 (98.15 billion shares in 2015). This reduction resulted from reduced capital inflows, low confidence in market performance, unattractive corporate returns as well as the attractiveness of alternative investments. Foreign investment inflows decreased during this period with a net outflow of NGN4.5 billion (inflows – NGN256.53 billion, Outflow – NGN261.03). In 2015, the net outflow was NGN83.61 billion.

Various events have occurred within the Nigerian landscape over the period especially during the past five years. Positive information has been released by companies with an expected impact on the share price appreciation but the reverse has been the case. Market efficiency has been a major discussion in the global financial markets in order to measure the comparative advantages of holding various financial assets. Various economies of the world rely on market efficiency to accurately ascertain the value of the financial assets over a period of time. At a more granular level in financial economics, efficient capital market theory relates to the comparative advantage theory applied to financial assets markets [8]. Absolute advantage of the market by an individual or entity is expected to be immaterial or irrelevant as information readily available should be free of any trading advantage to an individual. One of the major decisions by managers is an investment decision. The investment decision is the result of positive returns on the expected investments and the possible increase in shareholders' value. To invest adequately in financial assets, there must be the ability to make adequate returns at minimal risk exposure. This risk exposure is a function of the availability of information to investors and the timeliness in taking such investment decisions [9].

In summary shareholder's wealth has different factors that influence its sustainability. Most studies have considered the monthly stock index in explaining market efficiency without considering the impact of the individual sectors on the index. Likewise, performance of the NSE over the period has been linked to the level of participation of the foreign clients without the effects being measured on shareholders' wealth. Dividend has been considered separately using mostly the date of announcement to examine the information efficiency of the exchange. In most cases, consideration is not given to investors that take position at year end in expectation of the

future dividends. Leverage and Earnings have also been considered differently with few researches focusing on the joint effects on shareholders' wealth. It is against this backdrop that this study empirically examined the effect of Stock market returns, measured by the dividend, earnings and leverage, on the sustainability of shareholder's wealth of companies listed on the NSE.

1.2 Objective of the Study

To ascertain the effect of dividend per share, earnings per share, and leverage on market price per share of the companies listed on the Nigerian Stock Exchange;

1.3 Research Question

What is the effect of dividend per share, earnings per share, and leverage on shareholders' wealth sustainability of companies listed on the NSE?

1.4 Research Hypothesis

H_0 1: There is no significant effect of dividend per share, earnings per share, and leverage on the market price per share of companies listed on the NSE.

1.5 Justification for the Study

Various studies have been embarked upon on market efficiencies and their impact on the performance of companies listed on various markets. Specific to Nigeria's environment, most research has focused more on the efficiency of the markets on the weak form efficiency, few researches have been conducted on whether the Nigerian Capital market has drifted from being a weak-form efficient especially in the recent activities within the market. As the success of any economy is premised on the stability and efficiency of the capital markets to ensure efficient allocation of resources from the surplus sectors to the deficit sectors in the economy. Dumani and Omie [10] examined the efficient market test in the Nigerian Capital market using desktop research. Information efficiency of the market was not considered in the research even with the recent changes in the Nigeria capital market. Adigwe, Ugbomhe, and Alajekwu [11] did not consider the effect of foreign portfolio investment in the behaviour of the market bearing in mind that they contributed about 50% to the total turnover of the market in between 2010 and 2017. Likewise, Ayodele & Maxwel [12] tested the semi-strong efficiency theory of the

Nigerian capital market using modified transfer function approach without considering the effect of information efficiency on the movement of share price and invariable shareholder's wealth. The Nigerian economy has some economic instability in recent years past up till now and this had a toll on the Nigerian Capital Market. The market lost 5.27% in terms of the NSE All-Share Index and 5.23% in terms of the market capitalization for the year ended 31 December 2016 (CBN, 2016). While the company's performance was also on the low, some companies posted some decent results and as such should have some impact on the capital markets especially for those sectors.

This study is further necessary to throw more light on the various theories of market efficiency and evaluate the same in light of the changes information efficiency and its impact on the Nigerian Stock Exchange.

2. LITERATURE REVIEW

2.1 Conceptual Review

2.1.1 Shareholders wealth

One of the purposes of setting up a business is for profitability which in turn creates value for the shareholders. Company finance theory premised its assumptions of creating value for shareholders as the primary objective of the firm [1]. Where value is the main purpose of financing a company, then the maximisation of such value will be at the forefront of the risk-takers who are the shareholders of the firm. The value of the business is related to the value of the ordinary shares owned by the equity holders and traded on the floor of the exchange for companies listed. The company exists for profit-making. The residual profit remaining after the distribution to other stakeholders belongs to the ordinary shareholders. Olowe [1] and Brealey and Myers [13] opined that any undistributed wealth belongs to the equity shareholders at any point in time.

Shareholders want to maximise their shareholdings every time and this is done through making investment decisions that will yield positive net present value. Brealey and Myers [13] and Cleary, Atkinson and Drake [9] believed that for the value of the shareholders to be maximised, it will always come back to Net Present Value (NPV) of projects embarked upon by the managers. The shareholders purchase shares because they want to earn good returns

overtime on their investment and they want that at low risk. The expected higher return will lead to a higher value of the shares on the capital market [14]. Olowe [1] and Hirschey and Nofsinger [15] believed that managers are appointed to act on behalf of the shareholders and as such, they will pursue the investment decisions to maximise the wealth of the shareholders through the ability to generate future cashflows now and in the future. Wealth maximisation is a long-run view which resulted from the three major decisions of the managers – Investment decisions through positive NPV projects/capital investment, Financing decisions with the least cost financing strategy to maximise return and Dividend policy which is necessary to give back to the investors [14] and [1].

For shareholder's wealth to be maximised, the share price of the company must increase over time through sustained performance and information to the public. The wealth of the shareholders is measured by the value quality of the ordinary shares and any decision that will erode the shareholder's capital should not be taken [16].

Olowe [1] and Pandey [17] stated that the firm's investment decision that yields a positive NPV will lead to an increase in shareholder's value. Furthermore, Van Horne [18] believes that the value placed on a company's shares represents the perception by market participants based on the information available on the level of risk and returns over the period. Hence, the quality of information being released by the company over time will have an impact on the value of the shares quoted on the exchange and invariable the shareholder's wealth [13].

The shareholder value is measured by the future cashflow receivable by the shareholder. This cashflow can be measured through the dividend payment by the company and the capital gain at the point of exit [18]. The share price of a company based on the risk and return is the intrinsic value or the fundamental value of the shares [16].

The current worth of the value of shareholders' investment is the summation of the future cash inflow receivable by the shareholder and discounted at the cost of capital to the shareholder [13]. The information content of the proposed dividend by the company will go along away in affecting the worth of the shareholder's investment over the period.

At the end of each financial year, companies make an announcement on the performance of the company during the accounting period. The performance is also accompanied by the statement of financial position as at the end of the period which shows the growth in the total assets or otherwise. The components of the financial statement are also accompanied by corporate actions in terms of earnings performance and dividend payments. The announcement of such information triggers trading in the value of the shares of the company and this can be positive or negative. The information content of the announcement of the corporate action cannot be underestimated as this could maximise or erode shareholder's wealth [16]. In summary, there is generally standard way to define shareholders wealth. As such, this study defined shareholders wealth as the networth of the owners of capital of the business at any point in time. It is the total value of their investment in any particular entity at any point in time. It can be measured using market price per share. Also, this can be measured from a return on investment perspective and thus can be related to the all-share index return periodically.

2.1.2 Stock market returns

The return on the stock market from this study is related to the efficiency of the Nigerian Capital market to determine how the market returns variables are quickly reacted to enhance the efficiency of the market. In line with the aforementioned, a market is efficient when the process leading to the discovery of the price of equities and assets is rapid and accurate based on the various information available. It is the extent to which market prices incorporate available information [9]. In an efficient market, there is the availability of cheap information to investors which is widely spread and incorporated in the security price [13]. Bhalla [14] views the efficient functioning of the capital market so that prices of assets and securities can rapidly respond to new and available information. The availability of this information will enable investors and portfolio managers to make wise investment decisions.

The concept was first used in 1889 by George Gibson in a book he wrote called "The Stock Markets of London, Paris and New York. He opined that when shares/securities are publicly known in an open market where pieces of information are freely available, the purchase

value is regarded as the judgment of the best intelligence concerning them [19]. The concept of an efficient market hypothesis as evolved overtime but became more popular with the work of Fama [20] where he opined that stock market prices react randomly over a period of time. He further explained the theory of random walk in stock market prices by using the technical and fundamental analysis framework. According to Brealey and Myers [13], fundamental analysis studies the company's business and tries to uncover divers information about its operational and profitability efficiency that will give more information about the companies performance during the period. Companies under fundamental analysis research put processes in place to ensure that the prices of assets and securities reflect all relevant information and changes in prices are unpredictable to avoid a single person making unrealistic gains [13]. Technical analysis, on the other hand, studies the movement in historical price records in other to establish a pattern and trend line that will be used for speculative purposes. Competition in this area of research ensures that the current market prices are a reflection of the historical information and movement [13].

The concept of capital market efficiency can be classified into three areas which are allocational efficiency, operational efficiency and pricing efficiency [1]. The three types of capital market efficiency defines the basic criteria for stock market efficiency [11]. Olowe [1] sees allocational efficiency as the role of the capital market in the optimal allocation of scarce savings from the deficit side to the productive investment side in such a manner that the benefit will be accruable to all. It implies the most efficient use of the scarce resource by allowing the highest bidder to have the day in asset trading [11].

Operational efficiency implies that all transactions in the assets and securities are carried out instantly, correctly and at a low operational cost in order to preserve the benefits involved [14] and [11]. It is operationally efficient if the market allows for a fair return for their services [1]. Pricing efficiency relates to the informational efficiency in ensuring that prices of assets and securities fully reflect the forces of demand and supply [21]. Prices are used for capital allocation in this market in order to ensure its sustainability and effectiveness [1]. Pricing efficiency is the bedrock of capital market efficiency and it incorporates allocational and operational efficiency.

2.1.2.1 Assumptions underlying capital market efficiency

Samuelson [22] and Fama [23] identified various assumptions under which a market can be said to be efficient. These assumptions are as follows;

There is no transaction cost of trading in securities and assets as postulated by Samuelson [22]. This was however countered by Fama [23] by concluding that a reasonable transaction cost of trading in securities is required.

The availability of information is unrestricted in the market and can be large enough to influence the prices based on the number of investors always involved.

Homogenous expectations in terms of current information and prices of the securities as well the future distribution of the prices to securities.

2.1.2.2 Forms or levels of capital market efficiency

The forms of market efficiency were identified by Fama [23,1] and this set the main ground for the concept in finance. Three forms of the market efficiency were identified and these are weak form, semi-strong form and strong form efficiency [24]. The efficient market hypothesis was classified based on the informational content of assets/securities that are reflected in the market prices of the assets/securities. The three forms represent stages of information availability and reflection in the stock prices [11] and [25]

The weak form efficiency relates to the behaviour of securities prices in relation to the historical information which is already available in the market. Hence, current prices reflect all stock market information that has been made available to the investors [15] and [11]. According to Delcey [25], the test of the weak form of market efficiency will imply that the prices of securities follow a random walk and any form of predictability means that investors can earn abnormal returns. Fundamental analysis should not be able to predict future security prices and as such prevent the ability to earn an abnormal return [13].

The second form of market efficiency is the semi-strong form which posits that security prices should fully reflect all publicly available information. The market prices of securities

should rapidly incorporate all current publicly available information which will enable such prices to fluctuate south or north [9]. All efforts to analyse publicly available information are ineffective as the earnings announcement of companies has already been factored into the securities available [15]. When the market is semi-strong efficient, no single investor can make an excessive gain in the market as the information is available to the public at the same time, hence all trading rules based on public information are ineffective [20].

The strong form of market efficiency is the third form postulated by Fama [23]. According to Brealey and Myers [13], the strong form efficiency is that in which the current market price includes not only current information that have been made available to the public but also insider information or information not yet made public but assessed through painstaking analysis of the company and the economy. The ability to see lucky and unlucky investors is possible but the ability for investment managers to consistently beat the market will be impossible because of the information cost, [26] and [13].

2.1.2.3 Measures of capital market efficiency and returns

For this study, the measurements of the capital market returns in line with the information efficiency include dividend payments, earnings, leverage measured by debt-to-assets, foreign portfolio and individual sector performance. These are discussed below.

2.1.2.3.1 Dividend payment

The dividend is one of the major decisions by the financial managers. It is the residual amount distributable to shareholders as a form of return on their investment. Before dividends can be declared, all other obligations of the company must have been fulfilled. Hence dividend is the residual of cash available to the owners of the business after payment of all statutory obligations and on the assumption that there is no retention for future expansion and growth. According to Brealey and Myers [13], a firm's decisions about dividends are often mixed up with other financing and investment decisions. Some firms pay low dividends because management is optimistic about the firm's future and wishes to retain earnings for expansion. Hence the dividend is a by-product of the firm's capital budgeting decision. The decision to pay

dividends lies with the company's financial managers and it is a function of whether the company does not have major cashflow needs for the period [17]. Dividend payment is one of the critical information release by companies over time and this plays a vital role in the valuation of the company's shares [13].

Lowel [1], Pandey [17] and Akintoye [24] identified two schools under the dividend policy which are the relevance of dividend school of thought and the dividend irrelevance school of thought. Lintner [27] was one of the first proponents of the dividend relevance theory on the value of the firm. Brealey and Myers [13] assumed an imperfect market and concluded that dividend policy plays an important role in maximising shareholders wealth.

Because of information asymmetries between the investors and the managers, changes in corporate dividend policy may give information to the public about the corporation's current and future financial plan. Hence dividend payments carry with it information content that might have an impact on the value of the firm over a period of time [18]. The dividend discount model was developed by Gordon [28] by concluding that the fundamental value of a stock is the present value of all expected cashflows paid out in the form of dividend to the shareholders. Hirschey and Nofsinger [15] stated that where there is an increase in the dividend payment, the value of the firm should also increase at the same time due to the information content of the dividend paid.

The second school of thought is the dividend irrelevance theory that states that dividend payment or not has no impact on the value of the firm and as such no impact on the shareholder's wealth [6]. This theory was propounded by Modigliani and Miller [29] and they opined that the split of earnings earned by a company between dividend and retained earnings has no impact on the value of the firm and as such does not affect shareholders wealth. They further argued that the value of the firm is dependent on the firm's earnings during the period as well as its investment decisions [13]. The theory was propounded under some major assumptions which are explained below.

Perfect capital market conditions with rational investors, free and available information, no transaction cost and absence of a dominant investor to dominate the market. Absence of

floatation costs on securities issued by the firm as well as the absence of taxes. They further opined that where there are taxes, individuals and corporate organisations can borrow at the same rate, hence the payment of the dividend will have no impact on the firm's value. Other assumptions are that the investment policy of the firm is fixed and investors have perfect certainty about future investments and expected return [1]. The crux of M&M's dividend irrelevance theory is that dividend is not all that mattered in the determination of shareholders wealth. What is paramount is the performance of the company over time through growth in earnings. Whether a dividend is paid or not, this will not affect the valuation of the companies shares [6]. When a company has an investment decision, it can decide to utilise all its earnings to finance the project and access the capital market to raise funds to pay dividend [13]. Likewise, it can raise capital to finance the investment decision and use the earnings to pay dividend to the investors. The two options have no impact on the shareholder's wealth [30].

The dividend irrelevance theory was criticized using the clientele effects of dividend payments, information contents of dividend, bankruptcy cost, and tax as well as the bird-in-hand theory. According to Olowe [1], the implication of the M&M theory is that where two firms have the same level of investment opportunities, their value would be the same even if one paid all as dividend and the other use the earnings to finance an investment project. The two companies must, however, be within the same risk class [14].

2.1.2.3.2 Earnings per share

The bottom line of the performance of any organisation lies in the quality of the earnings over the period and how such earnings can be maintained and sustained. Economist sees earnings as cashflow plus the change in value of the company's assets measured at the end of every business cycle, [13]. Accountants have a different view from the economist perspective. Because of the fundamentally unpredictable behaviour of stock prices, asset values and changes in such values can be very volatile and this can have an effect on the value of the shareholders, [13]. At the end of every financial year, it is expected that companies announce the annual performance to the various stakeholders for transparency, accountability, and consistency. This announcement can have a positive or a

negative impact on the value of the company's shares as well as its perception from the various public and financial information users. Historical events have been used to discover the relationship between stock price movement patterns and firm-specific information announcement, [15].

Earnings announcements represent a piece of important information to the investors and potential users. Hence such economic information is expected to trigger a reaction in the prices of the assets/securities and consequently on the value of the shareholder's investments at that point in time, [9] and [24]. Hirschey and Nofsinger [15] stated that stock prices are expected to move with positive earnings announcements and earnings surprise by the companies as long as such earnings do not differ significantly from the analyst forecast. However, where positive earnings trigger a negative reaction to the value of the shares traded at that point in time, then the essence of the efficient market hypothesis would be defeated and as such investor's confidence would have been eroded because of information leakage to some specific investors prior to the announcement.

Earnings of companies in any year should provide more information about the characteristics of a firm's financial performance that are in tandem to a specific alternative course of action by specific users and managements [31]. When the performance of the company is positively reflected in the earnings quality, the earnings quality of the company should be positively affected and also the shareholder's wealth through the market price quality [32]. Hirschey and Nofsinger [15] further stated that after the earnings announcement to the public, there are possibilities of the post-earnings information to be impacted in the share price days after the announcement has been made.

The ability for current earnings to accurately and consistently predict the movement of future earnings will assist in determining the quality of earnings [33]. Investors buy into future earnings based on past earnings performance of the company and this is expected to have an impact on the share value of the company. Quality of earnings and the company's share price cannot be separated over time. A high quality earnings posted by an entity periodically can have an impact on the future price of a stock. Hence, high quality earnings should accurately reflect the

operating performance of the companies both current and future and should be a summary of measures useful for assessing the shareholder's wealth [34].

2.1.2.3.3 Leverage or debt-to-equity

Leverage is the level of debt capital used in financing the business rather than injecting fresh equity into the capital structure [1]. It is an investment strategy of using borrowed fund or capital to increase potential return. It also refers to the amount of debt a firm uses to finance assets. Leverage can be measured in terms of total debt to equity or net debt to equity. The effect of leverage indicates that stock volatility is negatively correlated to stock returns [35]. Leverage is part of the capital structure of the firm which Modigliani and Miller [29] argues that capital structure has no impact on share value. In pecking order theory, debt financing (leverage) should be the secondary source of finance for a company as most profitable firms prefer to use retained earnings as a first step in financing their investment projects [36].

The use of leverage in the financing structure of companies has some determinants. These determinants include large firm size, growth in the firm's total assets, tangibility in the firms assets to reduce the risk of bankruptcy [37]. The determinants assist in predicting how leverage impacts the performance of the companies and invariable the growth in shareholder's wealth in the long run. Shareholders most time have negative perceptions on the use of leverage in the capital structure as this can increase the bankruptcy cost of the business in the long run if the financial performance is not sustained [38]. The other risk involved in leverage is that when a firm incurs losses, this will cause greater volatility in earnings and as such affects the market price of the shares as firms will have to pay debt holders first before the equity shareholders [38].

2.2 Theoretical Framework

2.2.1 Efficient market hypothesis

The first work on the efficient market hypothesis was published by Louis Bachelier in 1900 but became more famous when Fama [20] re-examined the theory in the capital market. Fama [20] postulated that stock prices should reflect all publicly made available information in an active and efficient market. In an efficient market where information is freely available, nobody is

expected to outperform the market as the information is being released to the market [39]. Financial markets are thus efficient if prices of traded assets and securities are unbiased and reflect all available information to the public. This information is processed at the same time by the analyst, individuals and sophisticated investors at the same time and as such the potential of supernormal gains from the market would have been eradicated [40] and [41]. Fama [20] as part of his theory stated that the market can be weak form, semi-strong form and strong form efficient based on the nature of the available information and timing of such information. In all the forms of efficient market, no one is expected to outperform the market in the long run. Black [42] in support of the efficient market hypothesis opined that in an efficient market, stock price variation never falls below 50% or rises above 200% of the fundamental value of the securities or stock. Hence as the price moves farther from the intrinsic value, it moves back towards the intrinsic values with the same proportion [43].

Grossman and Stiglitz [44] believed that for the stock market to be efficient as pointed out by Fama (1965), there must be the presence of sophisticated traders and this will make the market tends towards inefficiency [43]. They further stated that sophisticated investors cannot make super-normal profit in an efficient market as the prices would equal its fundamental values. This will discourage sophisticated traders in the acquisition of knowledge, skills, and information at more costs that will erode the expected profit to be made [43]. Shefrin [45] using behavioural finance theory opined that the stock market is efficient and does not agree with the efficient market hypothesis theory. He stated that overconfidence, imitation, hope, fear and other psychological phenomena may explain some market anomalies as stated in efficient market hypothesis theory. These anomalies can be explained using behavioural finance with the conclusion that the market is not efficient [43]. Lo [46] and [47] also came about the adaptive market theory as a criticism of EMH. They explained that noise traders and sophisticated traders have an impact to play in determining the behaviour of the stock markets. This behaviour may cause a serial dependence on the changes in stock prices except sophisticated traders quickly steps in to profit from the ignorance of the noise traders over time [43].

The efficient market hypothesis segregated into the weak, semi-strong and strong form efficiency

describes to a greater extent the extent of the relationship among market stock prices behaviour. Information released to the market at intervals should have an impact on the determination of the fundamental values of the assets in an efficient market.

2.3 Empirical Review

Amir and Levi [48] estimated the precision of information on earnings and non-earnings announcement days and its relation to the cost of equity in order to determine how efficient the market was. Time-series regression analysis was used and they concluded that the precision of earnings disclosure has a small effect on the cost of equity to the shareholders on the day of announcement relative to the precision of the information on other days of the year.

Abdul and Nur [49] examined the impact of dividend policy as an information efficiency on the shareholder's wealth in the USA using manufacturing companies listed on the NASDAQ. The study used the dividend payout ratio and dividend yield ratio to examine the impact on shareholders wealth measured by earnings per share, market price per share and the return on equity. Data were collected from over 300 companies between 2011 and 2015 and descriptive statistics, regression and correlation analysis was used to analyse the data. The study concluded that dividend information has an impact on the shareholder's wealth.

Balagobei and Selvaratnam [50] used the information content of dividends to analyse the impact of dividend policy on shareholder's wealth of listed manufacturing companies in Sri-Lanka. The correlation and regression analysis were used for a five year period between 2008 and 2012. They concluded that dividend payment has an impact on the shareholder's wealth measured by the market price quality and concluded that the information content of the dividend improves the market price and as such confirms the market efficiency in the weak form.

The impact analysis of Subramaniam and Murugesu [51] on the Sri Lankan market agreed to that of Balagobei and Selvaratnam [50]. They concluded that there is a strong relationship between the earnings quality and market price quality. The market reacted positively to the performance result announcement over the period thereby agreeing to the weak form

efficiency of the efficient market. However, the empirical analysis result of Khan, Nadeem, Islam, Salam and Ikram [52] on the impact of dividend policy on a firm's performance from the Pakistan Stock Exchange revealed that dividend payout ratio and leverage have a negative relationship with the return on equity.

To analyse Nigerian capital markets, Amahalu, Abiahu, Obi and Nweze [53] analyse the effects of accounting information on market share prices of some selected firms on the Nigerian Stock Exchange (NSE) between 2010 and 2016. The informational efficiency of the market was sustained as the independent variables positively impacted the dependent variables and increased the shareholder's value over time. The conclusion was that the market is efficient in the weak form and corroborated the desk research work of Dumani and Omie [10].

In an empirical study on efficient market hypothesis in the Indian market, Kalsie and Kalra [54] using unit roots and runs test for data between 2001 and 2011, concluded that the Indian markets are inefficient in the weak form. They concluded that passive investment strategy will not be efficient in the market over the period because of the information inefficiency. Raquib and Alom [55] also concluded that the Dhaka Stock Exchange is inefficient due to the fundamental violations of the ingredients of an efficient market during the sample period.

Ahmadi [56] took a look at the relationship between transparency and capital market efficiency in the Iran stock exchange market between 2005 and 2014. The result revealed the impact transparency of the business managers and corporate governance has on the efficiency of the capital market in the Tehran Stock Exchange. They concluded that the transparency of the pre-close pricing of the stock could impact the pricing efficiency of the closing price. Hence, informed traders will increase their trading volume in a particular stock to take advantage of the pre-close transparency pricing.

Acheampong, Agalega and Shibu [57] examined the effect of financial leverage and market size on stock returns of the manufacturing sectors quoted on the Ghana Stock Exchange (GSE) between 2006 and 2010. The ordinary least square method was used and it was concluded that size has a positive significant impact on stock return. Ayentimi, Mensah and Naa-Idar [58] carried out an objective analysis of stock market

efficiency on the GSE using Jacque-bera and Kolmogorov-Smirnov test including runs test. It was concluded that the GSE does not follow normality test and as such not efficient.

3. METHODOLOGY

This study examined the effect of stock market returns on market price per share of the companies listed on the Nigerian Stock Exchange. *Ex-post facto* research design was adopted. Correlational analysis of the *ex-post facto* research design was adopted in analysing the relationship between the variables used for capital market returns and that of shareholder's wealth sustainability on companies listed on the Nigerian Stock Exchange (NSE). The population of the study was the 168 companies listed on the NSE as at 31 December 2018. These companies are divided into 152 companies on the main board, 7 companies on the premium board and 9 companies on the Alternative Securities and Exchange Market (ASEM) of the NSE. Random sampling techniques was adopted in the selection of a total sample of 57 from the population of the companies listed on the main board and premium board. Secondary data used were sourced from the annual reports of the companies under consideration. Data were analyzed using descriptive and inferential statistics. In testing the hypothesis, the following regression model was tested. The analysis has been carried out in three stages. The first step was the use of descriptive statistics to understand the nature of the time series data and also determine the stability of the variables. It is about mean, median, mode, standard deviation, kurtosis, skewness, Jacque-Bera.

This second stage presents and discusses the regression results based on panel data regression. For the f objective the pooled OLS, fixed effect models, random effect models, and the Driscoll-Kraay were used. It starts with the estimation of the ordinary least square (OLS) because it serves as the basis for empirical accounting and finance literature. This is followed by a static model- fixed and random effect models that take care of the specific firm effects. For the static model, the Hausman's test is conducted to determine a more efficient model. The significance of the test implies a fixed effect, otherwise, we used the random effect. However, to use the random effect model, the Bresuch-Pagan Langragian multiplier for random effect is conducted, if it is significant we use the random

effect for the purpose of our analysis, otherwise, we use the pooled OLS.

The statistical figures used for the interpretation of the regression results and testing of hypothesis are coefficients of the independent variables (coefficient of determination (R^2) and coefficient of multiple determination (adjusted R^2), t-test and F-test. The hypotheses had been tested at 10%, 5% and 1% significance level using both t-statistics and F-statistics.

Coefficient of Determination (R^2) measures the proportion of variation in the dependent variable explained by the changes in individual independent variable; while Coefficient of Multiple Determination (Adjusted R^2) measures the proportion of joint variation in the combined independent variables that could impair on the dependent variable. Both Coefficient of Determination (R^2) and The Coefficient of Multiple Determination (Adjusted R^2) were used in the measurement of the goodness of fit of a regression estimate and also gives the ratio of the explained variation to the total variation which measures the proportion of the variation in Y explained by changes in X. The closer the R- squared is to one, the better the fit.

The T-test was used to test the statistical significance of each of the independent variables on the dependent variable and tested at a significance level of 10%, 5% and 1% respectively. It tests the individual significance of each proxy. The regression equation is adequate if the T-statistic is significant at the chosen level of significance.

Decision rule

$T_{cal} > T_{tab}$ = Accept H_1 and reject H_0
 $T_{cal} < T_{tab}$ = Accept H_0 and reject H_1

The F-test has been used to test the overall significance of the multiple regression equation. It usually involves the ratio of more than one independent estimates of variance. The regression equation is adequate if the F-statistic is significant at the chosen level of significance.

Decision rule

$F_{cal} > F_{tab}$ = Accept H_1 and reject H_0
 $F_{cal} < F_{tab}$ = Accept H_0 and reject H_1

3.1 Beta (β) Coefficient

This measures the direction and magnitude of the effect of individual independent variable on the dependent variable.

3.2 Mathematical Model Based on the Hypothesis

$$MPS_{it} = \alpha + \beta_1DPS_{it} + \beta_2EPS_{it} + \beta_3LEV_{it} + \varepsilon_{it}$$

Where,

MPS = Market Price Per Share
 DPS = Dividend Per Share
 EPS = Earnings Per Share
 LEV = Leverage

explanatory variables are dividend payment (DPS), earnings quality (EPS) and financial leverage (LEV) and these variables were discussed in turn.

MPS: The mean value of the MPS is 37.40 and this value is positive implying that the market value of the selected listed firms is growing. In addition; it shows that firms in Nigeria create value for their shareholders' for the sample period. The maximum value of 1555.99 and the minimum value 0.00, show that firms in Nigeria have different efficiency levels.

DPS: The mean value of dividend payment is 1.301. This suggests that on the average the selected listed firms' pay dividends to their shareholders which is positive and thus, they are not operating at a loss. The maximum value for the dividend payment is 47.5 and the minimum value is 0.00. This shows that there is a difference in the degree of dividend payment among the selected firms, while some of the firms pay dividends others do not.

EPS: The mean value of earnings quality is 1.96. This shows that on the average the selected listed firms give back to their shareholders and there is a value on their investments. The maximum value of 54.26 and the minimum value of -199.78 further suggest that there is a disparity in their degrees of efficiency among the selected listed firms. Thus, some firms are creating high returns for their shareholders; some are operating at a loss.

4. DATA ANALYSIS AND PRESENTATION OF RESULTS

4.1 Descriptive Statistics and Correlation Coefficients

The study consists of yearly data for the period 2005-2018 for fifty-seven listed firms in Nigeria. The descriptive presented in Table 1 are the mean, median, maximum, minimum and standard deviations, Skewness, Kurtosis and Jacque-Bera (for normality test) and the numbers of observations for each of the dependent and independent variables. The dependent variable is the market price per share (MPS) and the

Table 1. Descriptive statistics and correlation coefficients of capital market efficiency and sustainability of shareholders wealth

Panel A: Descriptive Statistics/i					
Variables	Mean	Max	Min	Std. Dev.	Obs
MPS	37.399	1555.990	0.000	116.310	798
DPS	1.301	47.500	0.000	3.447	798
EPS	1.964	54.260	-199.780	8.800	798
LEV	62.273	4516.686	0.000	188.608	798
Panel B: Correlation coefficient					
Variables	MPS	DPS	EPS	TLEV	VIF
MPS	1.000				-
DPS	0.859	1.000			1.35
EPS	0.468	0.509	1.000		1.35
LEV	-0.009	-0.014	-0.061	1.000	1.00

Source: Researchers Fieldwork Result Analysis (2020) Notes: Table 1 shows the mean, maximum, minimum, standard deviation and correlation coefficient of the variables. The dependent variable is Market per Share (MPS). The explanatory variables are Dividend Payment (DPS), Earnings Quality (EPS) and Financial Leverage (LEV). The correlations are below the major diagonal and the bold coefficients denote statistical significant at 1, 5 and 10 percent. All the values were calculated from the 798 firms-year observations for fifty-seven listed firms in Nigeria. The estimation process was facilitated using Eviews 10

Leverage is defined as the ratio of total debt to total assets and the mean value for all the selected firms is 62.27. This suggests that the debt owed by the selected listed firms is about 62.27 percent of their total assets. In addition, the maximum value is given as 4516.69 and the minimum is 0.00. This shows that firms included in the sample size have their debt being greater than the assets it has and some of the listed firms do not incur any debt.

Panel B of Table 1 presents the correlation coefficient of the dependent variable Market price per share (MPS). On the explanatory variables are Dividend Payment (DPS), Earnings (EPS) and Financial Leverage (LEV). The result shows that MPS have a positive significant relationship with dividend payments and earnings per share while leverage has a negative association with MPS. The implication of these results is that increases in dividend payments and earnings per share will lead to increases in market price per share and conversely, increases in leverage will lead to decreases in market price per share.

4.2 Regression Result

This section presents and discusses the regression results based on panel data regression. For the objective the pooled OLS, fixed effect models, random effect models, and the Driscoll-Kraay were used. The section starts with the estimation of the ordinary least square (OLS) because it serves as the basis for empirical accounting and finance literature. This is followed by a static model- fixed and random effect models that take care of the specific firm effects. For the static model, the Hausman's test is conducted to determine a more efficient model. The significance of the test implies a fixed effect, otherwise, we used the random effect. However, to use the random effect model, the Breusch-Pagan Lagrangian multiplier for random effect is conducted, if it is significant we use the random effect for the purpose of our analysis, otherwise, we use the pooled OLS.

It should be noted also that the fixed effect model is also fraught with a lot of weaknesses. If there is a present of serial correlation and heteroscedasticity in the fixed-effect model, it shows that the model has unequal finite variance and that the successive error term of the estimated model is correlated. Thus, making the estimates unreliable, biased and not useful for the purpose of prediction and policy recommendation. To salvage the fixed effect model problem, the study used the Driscoll-

Kraay regression that solves the problems of serial correlation and unequal finite variance. To ascertain the use of the Driscoll-Kraay regression, the Hausman test must prefer the fixed effect model over the random effect model. Following the above estimation strategy, it was discovered that in Table 2 the Driscoll-Kraay was the preferred model, thus, interpretation of results is based on the model.

4.3 Interpretation

Table 2 shows the results of regression analysis for the effect of stock market returns on the sustainability of shareholders' wealth among listed firms in Nigeria. The results show that dividend payment and earnings per share have a positive relationship with market price per share of firms in Nigeria, while financial leverage has a negative relationship with market price per share of selected listed firms in Nigeria. In addition, there is evidence that dividend per share and earnings per share have significant relationship with market price per share of listed firms in Nigeria (DPS= 21.035, t -test= 5.489, p = 0.000 and EPS= 0.602, t -test = 3.393, p = 0.000). This implies that dividend per share and earnings per share were significant factors influencing changes in the market price per share of selected listed firms in Nigeria. In sharp contrast, financial leverage does not have a significant relationship with the market price per share of firms in Nigeria (LEV= -0.002, t -test=-0.534, p = 0.602). This implies that financial leverage is not a significant factor influencing changes in market price per share of listed firms in Nigeria.

$$\text{Model: } MPS_{it} = \alpha + \beta_1 DPS_{it} + \beta_2 EPS_{it} + \beta_3 LEV_{it} + \varepsilon_{it}$$

The magnitude of the estimated parameters for the coefficients are 21.035, 0.602 and -0.002. This implies that a unit increase in dividend per share and earnings per share will lead to 21.035 and 0.602 increase in MPS of the firms in Nigeria respectively, while a unit increase in financial leverage will lead to a decrease of 0.002 in MPS of the selected listed firms in Nigeria.

The Adjusted R^2 measures the proportion of the changes in market price per share (MPS) as a result of changes in dividend per share, earnings per share and financial leverage and this explains about 74 per cent (Adjusted R^2 = 0.738) changes in market per share of listed firms in Nigeria, while the remaining 26 percent were other factors explaining changes in MPS in Nigeria but where not captured in the model.

Table 2. Effect stock market returns on the market price per share dependent variable: MPS

	Pooled OLS	Fixed effect	Random effect	Driscoll Reg
Coefficient –DPS	28.248***	21.035***	24.640***	21.035***
Standard error	(0.711)	(0.963)	(0.831)	(3.832)
T-Test	39.704	21.843	29.660	5.489
Probability Value	0.000	0.000	0.000	0.000
Coefficient –EPS	0.558**	0.602**	0.635**	0.602***
Standard Error	(0.279)	(0.255)	(0.259)	(0.177)
T-Test	1.997	2.364	2.456	3.393
Probability Value	0.046	0.018	0.014	0.000
Coefficient – LEV	0.003	-0.002	-0.001	-0.002
Standard Error	(0.011)	(0.011)	(0.011)	(0.003)
T-Test	0.308	-0.174	-0.063	-0.534
Probability Value	0.758	0.086	0.950	0.602
Coefficient –Constant	-0.677	8.955***	4.124	8.955
Standard Error	(2.367)	(2.300)	(3.919)	(5.194)
T-Test	-0.286	3.893	1.052	1.724
Probability Value	0.775	0.000	0.293	0.108
Adjusted R ²	0.739	0.738	0.738	0.738
F	747.51(0.00)	185.55(0.00)	-	54.74(0.00)
Wald Test	-	-	1088.04(0.00)	-
Hausman Test	-	35.55(0.00)	-	-
Bresuch-Pagan RE Test	-	-	163.73(0.00)	-
Heteroscedasticity Test	-	54.09(0.00)	-	-
Serial Correlation Test	798	798	798	798
Observations				

Source: Researchers Fieldwork Result Analysis (2020). Notes: Table 2 reports Pooled OLS, fixed effects, random effects and Driscoll-Kraay regression. The dependent variable is MPS. The explanatory variables are DPS, EPS and LEV. The standard error and the probability values are in parentheses. ** Significant at 10%, * Significant at 5%, *** Significant at 1%

The F- test of 54.74 is statistically significant with $p = 0.00 < 0.05$, indicated that the variables used in the model have a goodness of fit and that is a good predictor of the main variables and that dividend payment, earnings quality, and financial leverage jointly explains changes in MPS of selected listed firms in Nigeria. The variance inflation factor which is used to check for the presence of multi-collinearity shows that all the explanatory variables are not related because the variance inflation factor for all the variables is less than 5.

The F- statistic of 54.74 is statistically significant with $p < 0.05$ indicating that on the overall, the statistical significance of the model showed that the null hypothesis that there is no significant relationship between dividend payments, earnings per share and leverage on the market price per share was rejected. Thus, the alternative hypothesis that there is a significant relationship between dividend payments, earnings per share, and leverage on the

sustainability of shareholders' wealth was accepted at a 5 percent level of significance.

4.4 Discussion of Findings

The findings of this study indicate that dividend payment and earnings per share exert statistically a significant relationship with the shareholders' wealth. This is in line with our *a-priori* expectation that DPS and EPS will exert a positive relationship. The result indicated the presence of weak-form market efficiency as the dividend and earnings payments explained to a larger extent the changes in the shareholders' wealth. The results of this study support the findings of some previous researchers in the area of study. It supported the work of Dumani and Omie [10] who did a meta-analysis of previous empirical work on market efficiency in Nigeria. It also supported that of Amahalu, Abiahu, Obi and Nweze [53] where regression analysis was used to analyse the effects of accounting information on market share prices of

some selected firms on the Nigerian Stock Exchange (NSE) between 2010 and 2016. The works of Ikeora, Charles-Anyoagu, and Andabai [59] also supported the research results using the runs and augmented Dickey-Fuller tests and concluded that the Nigerian market is efficient in the weak form post 2011. Outside Nigeria, the research outcome supported that of Nimalathan and Nishanthini [4] when they examined the impact of market efficiency on the share price of manufacturing companies in Sri Lanka for a period of 5 years to 2014 using the dividend and earnings information of 20 manufacturing companies. Furthermore, the research outcome is in tandem to that of Balagobei and Selvaratnam [50] and that of Subramaniam and Murugesu [51]. The two researchers used the impact of dividend and earnings quality on the sustainability of shareholder's wealth within the Sri Lankan capital market.

This study also showed an inverse relationship between leverage and shareholder's wealth and this is also in line with our *a-priori* expectation. This also supports the conclusion of Khan, Nadeem, Islam, Salam and Ikram [52] when they confirmed through the analysis on the Pakistan Stock Exchange that leverage exerts a negative relationship on the return on equity.

However, this study empirical results negate the findings of Khan, Nadeem, Islam, Salam and Ikram [52], Tahir and Raja [60], Nneji [61], Gimba [62]. Khan et al. [52] on the impact of dividend policy on the firm's performance from the Pakistan Stock Exchange revealed that the dividend payout ratio has a negative relationship with the return on equity. Tahir and Raja [60] used regression analysis and correlation method on the variables between 1990 to 2006 and the results show an insignificant relationship between dividend policy and shareholder's wealth in the oil and gas sector of the market.

5. CONCLUSION

The study examined the relationship between capital market returns and sustainability of shareholders' wealth of companies listed on the Nigerian Stock Exchange between January 2005 and December 2018. In achieving this objective, three measures of stock market returns were adopted. These measures are dividend paid (DPS), earnings (EPS) and leverage (LEV) while market price per share (MPS) as a measure of shareholder's wealth.

The study ascertained that there is a causal relationship between the measures of stock market returns and the sustainability of shareholder's wealth of the companies listed on the NSE over the period of the study. This is seen from the significant relationship between DPS, EPS on the MPS.

The study, therefore, concluded that dividend and earnings, have a significant impact in determining the sustainability of shareholders' wealth over the period of the study while On the reverse, leverage has an inverse relationship with the MPS. This implies that the information relating the leverage or borrowings by the companies can send a wrong signal to the shareholders and as such affects its sustainability. Such information needs to be managed efficiently to prevent it from exerting a negative effect on the shareholder's wealth.

It is recommended that for there to be sustainability of shareholder's wealth over the period, the various regulatory bodies regulating company affairs such as the Securities and Exchange Commission, the Nigerian Stock Exchange (NSE), among others should bring out policies that will ensure companies pay dividend as long as they are profitable. Also, information on the dividend payment and earnings should be published regularly through various means to ensure existing and potential investors have such information. Activities around this will bolster the market price of the companies and ensure shareholder's wealth sustainability. Where the business is profitable, the directors should declare an annual dividend to ensure the sustainability of shareholders' wealth. Where companies incur debts, the positive impact of the debt financing should be emphasized to the shareholders in order to improve the perception and have a long-run impact on shareholder's wealth.

There are a number of limitations to this study, the first being the availability of information for companies listed on the Alternative Securities and Exchange Market (ASEM). This is a market that is growing and as such the impact should have been included in the study. Second, 57 companies were used from the total population due to the fact that some of the other information is not readily available. However, the data used and analyzed for this study achieved the objective of the study and the results are good for generalization.

This study examined the relationship between capital market returns and the sustainability of shareholder's wealth in Nigerian listed companies. Various recommendations and contributions to knowledge were made. However, it is noteworthy to mention the strength and limitations of this study as well as the suggestions for future research in this area. The strengths have been identified under the contribution to knowledge and recommendations to the study. Further work is required to ascertain how environmental factors affect the sustainability of shareholder's wealth via capital market efficiency factors. Also, Exchange Traded Funds (ETF) have been introduced by fund managers to track the performance of the exchange. The impact of these ETFs on the predictive ability of the market need to be established.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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Peer-review history:
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