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ISTANBUL AYDIN UNIVERSITY

INSTITUTE OF GRADUATE STUDIES

EFFECT OF DIVIDEND POLICY ON ORGANIZATION PERFORMANCE: A CASE STUDY OF THE NIGERIAN BANKING SECTOR

THESIS

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Business Administration Program

JUNE, 2021

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February 2021

DECLARATION

I hereby declare with respect that the study "effect of dividend policy on organization performance: a case study of the banking sector in Nigeria", was written without any defilement of scientific ethics from the introduction phase to the conclusion of the study and the sources were being referenced accordingly.

Ayodeji Paul OTENIYA

FOREWORD

This thesis is written in completion of the Master`s Program in Business Administration, at Istanbul Aydin University. The research is focused on "effect of dividend policy on organization performance: a case study of the banking sector".

First and foremost, all thanks to the Almighty God for making the program a success. Also, my profound appreciation goes to my thesis supervisor Prof. Dr. Erginbay UĞURLU who never felt demotivated by my endless mistakes, words alone cannot describe my gratitude, I say thank you, sir. I would also like to present my gratefulness to my parents (Mr & Mrs Oteniya) for their endless support towards the success of this programme, including my friends and family. May God bless you all.

February 2020 Ayodeji Paul OTENIYA

EFFECT OF DIVIDEND POLICY ON ORGANISATION PERFORMANCE: A CASE STUDY OF THE BANKING SECTOR

ABSTRACT

This investigation analyzed the effect of the dividend policy on bank performance in Nigeria. Secondary source of data was employed which was sourced from WEMA Bank Nigeria PLC. The data was gathered from the various audited publications of the bank financial statement. The data was analyzed with different estimation techniques ranging from regression analysis was employed to capture the impact of the independent variables as against the dependent variable, ARDL models and its bound test and vector autoregressive analysis (VAR) were used to capture the long-run relationship. While pairwise granger causality was also used to examine the causal effect of the study variables.

The findings from the analysis found that return on equity and return on asset were stationary after first difference while dividend yield and dividend payout ratio were stationary at level. The bound test reported that the null hypothesis that no long-run relationships exist failed to be rejected since the t-statistic value is lower than the critical bound values at 10%, 5%, and 1% respectively. The dividend yield contributes negatively and insignificantly to influence return on equity. DPR was positive but insignificant to influence return on equity during the study period. The ARDL bound test showed that the null hypothesis that no long-run relationships exist was rejected since the t-statistic value is more than the critical bound values at 10%, 5%, and 1% respectively.

The study concluded that dividend yield (DY) contributes negatively and insignificantly to influence return on asset (ROA) while dividend payout ratio contributes positively and significantly to influence ROA. Meanwhile, no long-run relationship exists between the variables. It was also concluded that dividend yield contributes negatively and insignificantly to influence return on equity and dividend

payout ratio was positive but insignificant to influence return on equity during the study period and there is no long-run relationship between the variables.

Keywords: Dividend payout, Dividend Yield, ROE, and ROA.

TEMETTÜ POLİTİKASININ ORGANİZASYON PERFORMANSINA ETKİSİ: BANKACILIK SEKTÖRÜNE İLİŞKİN BİR DURUM ÇALIŞMASI

ÖZET

Araştırmanın temel amacı, temettü politikasının Nijerya'daki banka performansı üzerindeki etkisini analiz etmektir. WEMA Bank Nigeria PLC'den alınan ikincil veri kaynağı kullanıldı. Veriler, banka mali tablosunun çeşitli denetlenmiş yayınlarından toplanmıştır. Veriler, bağımsız değişkenlerin bağımlı değişkene karşı etkisini yakalamak için regresyon analizi, ARDL eşbütünleşme ve vektör otoregresif olmak üzere farklı tahmin teknikleriyle analiz edildi. uzun vadeli ilişkiyi yakalamak için analiz kullanıldı. Çalışma değişkenlerinin nedensel etkisini incelemek için ikili granger nedensellik de kullanılmıştır.

Analizden elde edilen bulgular, özkaynak getirisi ve varlık getirisinin ilk farktan sonra sabit olduğunu, temettü getirisi ve temettü ödeme oranının aynı seviyede sabit olduğunu ortaya koymuştur. Bağlı test, uzun vadeli ilişkilerin bulunmadığına dair sıfır hipotezinin reddedilemediğini, çünkü t-istatistik değeri sırasıyla %10, %5 ve %1'deki kritik sınır değerlerinden daha düşük olduğunu bildirdi. Temettü getirisi, özkaynak getirisini etkilemeye olumsuz ve önemsiz bir şekilde katkıda bulunur. DPR pozitifti ancak çalışma dönemi boyunca öz sermaye getirisini etkilemek için önemsizdi. ARDL bağlı testi, t-istatistik değeri sırasıyla %10, %5 ve %1'deki kritik sınır değerlerinden daha fazla olduğu için, uzun dönemli ilişkilerin olmadığı boş hipotezinin reddedildiğini göstermiştir.

Çalışma, temettü getirisinin (DY) varlık getirisini (ROA) etkilemeye olumsuz ve önemsiz bir şekilde katkıda bulunduğu, temettü ödeme oranının ise ROA'yı etkilemeye olumlu ve önemli bir katkıda bulunduğu sonucuna varmıştır. Bu arada, değişkenler arasında uzun vadeli bir ilişki yoktur. Ayrıca, temettü getirisinin özkaynak getirisini etkilemeye olumsuz ve önemsiz bir şekilde katkıda bulunduğu ve temettü ödeme oranının olumlu olduğu, ancak çalışma dönemi boyunca özkaynak

getirisini etkilemek için önemsiz olduğu ve değişkenler arasında uzun vadeli bir ilişki olmadığı sonucuna varılmıştır.

Anahtar Kelimeler: Temettü ödemesi, Temettü Getirisi, ROE ve ROA.

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I. INTRODUCTION

A. Study Overview

Corporate finance encompasses 3(three) key aspects which includes financing, investment, and dividend decisions (Rahman, 2018). In making decisions about dividend, companies determine whether to keep the benefit or pay some to the owners and, if deferred, to reserve the sum. Dividends, however, are monetary compensation paid to owners against their investment in the company. Dividends are significant in two different ways. To start with, they offer a proportion of reality to the investors about the firm money related premium. They are often known as an indicator to the consumer regarding the company's potential success. Ong et al., (2014) laid out the significance of dividend paying for Malaysian corporates. They contended that those organizations which delivering dividend were less inclined to default and being insecure when contrasted with non-dividend paying companies. Lintner (1956) recommended in his examination that dividend and salary influence the dividend strategy of the corporates.

Dividend reform is among the most policy decision aspects in corporate finance (Williams & Ayodele, 2018). Dividend is referred as the dissemination of earnings among the shareholders of an entity. Dividends policy is a contentious issue, and the balance of the dividend policy can be adjusted that influence the performance of an organization. Some decade ago, financial economists have been involved in forecasting and analyzing corporate dividend strategy and income as they impact corporate stock markets (Mohammed, 2007). Dividends measured the recompence given to the investors for involvement in providing of resources for a corporation and the return for agreeing with the intrinsic risks of the corporate. Right now, mandate group of the organization figures a profit approach to separate and convey the income as per their commitments to the firm. The benefit approach has an immediate effect on the firm's evaluation, as there should be a balance between the organization's growth and the income-sharing strategy. However, a low installment of profits can prompt the disappointment of the investors, be that as it may, a high

installment of the equivalent could ruin the development of the organization (Reyna, 2017).

Dividend decsion is one of the key complicated factors and basic part of business finance. Considerably after a few years since development of profits hypothesis; dividend choice has been a significant uncertain issue in firm financial management (Brealey & Myers, 2002). It includes the amount of the firm's profit after other compulsory expenses have been deducted including taxes, some parts of the profit need to be circulated among investors after their interest in firms and what amount be held for future development of the organization. The strength of any organization is reliant on the nonstop investment and the work of financing, retained income from a fundamental piece of the wellsprings of finance to foot the speculation basis.

Dividend policy may be viewed as an option that affects the benefit owed to stakeholders after the expenses and valuations have been deducted from the company's whole profit. All together words, it is the benefit accruable to every single basic stock inside a specific period for the most part yearly premise. Each speculation embraced by speculators has a sole motivation behind amplifying riches; and investors will in general put resources into request to make benefit. Dividend is a means through which speculators in an organization are remunerated for their venture. Kapoor (2009) considers profits to be the dissemination of revenue in real resources among investors of a firm in relation to their possession. Which makes individuals all around, imagine that dividend approach has solid effect on the organization efficiency. Khan et al., (2016), risks and vulnerability are constantly connected with a venture which can't be anticipated and a great deal of info, not just connected with the efficiency of the organization, yet in addition to the info which includes financial circumstance and the political circumstances in a nation that the investor must know how to reduce the risk of aggression and weakness that may occur.

Organization performance could be seen from different viewpoints and there are various indications for estimating organizational efficiency. Assessing the financial efficiency of an organization permits the board to get to the aftereffects of business procedures and targets in financial related terms. Different researchers have characterized performance/efficiency in various forms. As per Rahel and Serkalem

(2010) they saw efficiency as far as profitability, they characterized efficiency as, return which is a money related objective of each organization used to extend the organization, and additionally to fill in as a wad for forthcoming moderate periods. They set that probability causes an organization to guarantee its dissolvability for investors to put resources into the future. Organization performance is a sensitive aspect of how effectively an organization can use its resources from the essential market method to achieve higher profits. Many firms have efficiency measures as part of their performance, though there is controversy over the relative value of financial and non-monetary metrics. Assessing the financial efficiency of a company helps investors to pass judgment on the after-effects of business strategies and experiments in clear financial terms. Expansion/growth is viewed as a signal of accomplishment, if it fetches about advancements in financial execution (Brealy *et al.*, 2007).

B. Problem Discussed

The performance of dividend policy has been hotly discussed phenomenon finance literature also, keeps its noticeable spot both in advanced markets and developing markets (Hafeez & Attiya, 2009). Numerous studies have attempted to reveal subjects concerning the dividend elements and the determinants of dividend arrangement yet, there is no adequate clarification regarding dividend decisions (Brealey & Myers, 2005). Dividend approach has been analyzed for a long time, but no well-recognized explanation has been given for the organization's dividend behavior. It has for some time been a puzzle in corporate world. In the study of Miller and Modigliani (1961), they concluded that, under such assumptions, the option of a dividend would not affect the company's forecast and is henceforth meaningless. Traditionally, some hypotheses argue that a properly supervised dividend strategy is imperative for investors as it can influence share costs and investor wealth. This argument depends on two principles that there is really no tax burden on a financial expert to make profits, and the second is that companies can bring new ventures to capital markets without considering the essential costs of issuing new projects. The supporters of the school believe that earnings are bad for the average investor due to the burden of obligation they face, which leads to lower confidence. Some contended that dividends are plainly acceptable since investors appreciate it. Along these lines, despite voluminous research on dividends, firm

management and financial analysts also encounter the same experience with Black (1976) portrayed as a dividend puzzle with fragments that simply don't appear to fit.

Dividend plan is a guideline and a law that a company uses to make a dividend return to creditors. The choice of a corporate dividend plan is a key component of the corporate approach. Earnings, which are basically the benefit of investors as a by-product of their risk and investment, are regulated by numerous organizational factors. Essentially, these factors include the constraint of funding, the probability of risk and decision-making, the scale of the company, the burden on creditors and administrative processes. Be that as it may, the profit payout of company's isn't just the wellspring of income to the investors, yet it additionally offers data identifying with company's present and future presentation. Extensive studies such as Linter (1956), Miller and Rock (1985) proposed that organizations profit payouts strategies are intended to uncover the income possibilities to speculators.

C. Study Purpose

This study shall majorly examine the impact of dividend policy on organization efficiency using banking sector, Nigeria as a case study. This study is utmost important in the literature as a result of the conflicting findings revealed by the previous researcher and it will be beneficial to the organizations, governments, policy makers, investors, academia and prospective researcher based on an analysis of the report.

D. Study Questions

- How does dividend pay-out ratio affect the performance of the bank in Nigeria?
- How does dividend yield affect the performance of the bank in Nigeria?
- What is the connection between dividend policy and the performance of the bank in Nigeria?

E. Research Objectives

The basic goals, however, are as follows

- To investigate the impact of dividend pay-out ratio on the performance of the bank in Nigeria.

- To survey the impact of dividend yield on the performance of the bank in Nigeria
- To ascertain the connection between dividend policy and the performance of the bank in Nigeria.

F. Hypotheses of the Study

Hypotheses are given in null form as follows

- Dividend pay-out ratio does not have any effect on organization performance in Dangote Cement, Nigeria.
- No significant effect of dividend yield on organization performance of Dangote Cement
- There exists no positive connection between dividend policy and the performance of the bank in Nigeria.

G. Importance of the Study

The importance of the investigation cannot be belittled due to the role it plays to the existing and potential investors and to the economy. Dividend policy is one of the most critical facets of a company's policies, and it has long been regarded as a complicated matter. The value of a company is affected by dividend payout decisions. Furthermore, cash dividends have a unique status among owners. The biggest issue, though, is why a scheme of split compensation was adopted in the first place. Several things influence dividend strategies. The investors invested their capital in order to yield return during and at the end of it maturity, therefore, most of the investors appreciate when dividend are being paid at regular interval to know how the firm is performing and the soundness of these firms contribute effective to the economy sector. Firms' dividend management decisions are the most important aspect of corporate policy. Different factors decide the payout, which is simply the gain to shareholders in exchange for their expense and investment. Financing limits, acquisition prospects and choices, firm scale, shareholder pressure, and regulatory frameworks are all examples of these factors.

H. Study Scope

This investigation aims to carry out the influence of dividend policy on organization efficiency using banking sector as a case study from 2000 to 2019.

I. Definition of Some Key Terms

Dividend: is the dissemination of remuneration from a bit of the organization's income and is paid to a class of its investors

Payout Ratio: is the level of net gain that an organization delivers out as profits to regular investors

Earnings: normally allude to after-charge overall gain, some of the time known as the main concern or an organization's benefits

Dividend Yield: is the measure of cash an organization pays investors.

Organization Performance: refers the actual output or after-effects of the company as measured against its expected output (objectives and targets).

II. LITERATURE REVIEW

A. Theoretical Background

The dividend strategy concerns the judgment of the management involving the allocation of earnings as dividends. This policy is perhaps the single most critical field of decision-making for the finance manager. Action made by organizations in this field influences the company's growth rate, its credit standing, share values and, finally, the company's total valuation. Dividend strategy is essentially a judgment on borrowing and is conditioned largely by available investment prospects and investors are oblivious to capital gains and dividends. Dividend conveyance and its arrangement is constantly a significant zone of worry for each business association, financial specialists, analysts, and funding offices and so on. Some years ago, business analysts have opined various hypotheses about dividend. Some viewed that sharing profit in form of dividend is a significant issue impacting the estimation of a business while some concluded that profit sharing in form of dividend is insignificant issue. One of the dividend theories, that is, the theory of irrelevance, suggested that profit arrangement neither impact the estimation of business's offers nor the expense of capital. This is on the grounds that the estimation of company's offers relies on business's procuring limit and hazard of advantages held by the firm. Profit may influence the estimation of association's offer because of data impact identifying with the board desires and customer base impact where the payout designs draw in the investors because of profit inclinations. In this manner, estimation of company's offer isn't reliant upon company's profit strategy under immaculate economic situations (Miller & Modigliani, 1961). As a result, the option to pay dividends or keep profits may be considered a residual decision. This hypothesis suggests that consumers are oblivious to the distinction between distributions and company retentions. Whose primary goal is to increase their return on investment. If the company has profitable acquisition prospects that pay a higher return than the expense of retained profits, the owners would be satisfied for the company to keep the earnings to fund those opportunities.

In any case, some scholars proposed that Miller and Modigliani perfect circumstance is theoretical circumstance and doesn't really exists as we can't disregard factors like cost, consumer price index, taxes, and insolvency. Along these lines, dividend arrangement and company's efficiency are interrelated and investors incline toward a higher profit strategy (Abor & Bokpin, 2010). The arrangement dividend of a corporate could influence the estimation of company's share and may prompts investors' wealth expansion (Barker *et al*, 2001). Significant of capital expansion is a significant constraint of business's efficiency. Components like dividend rewarded, authentic and venture benefits and income development design and so on have been affecting the profit approach of every business (Pruitt and Gutman, 1991). In contrast to intrigue, shareholder's return isn't fix assurance for organizations. Businesses are regularly unwilling to change in shareholders' return arrangement. Organizations listed on the stock trade are typically devoted to making profits on a quarterly or twice-yearly basis. Twice-year or quarterly income is known to as a short-term benefit. The last compensation, which is normally made towards the end of the organization's financial year, is recognized as the last refund. Profits are usually paid after the company duty has been reimbursed. Dividend strategy is basically about the choices with respect to profit payout and retaining. Watson and Head (2004) say that dividend is a choice that reflects the measure of benefits to be held by the organization and that to be disseminated to the investors of the organization.

In recent decades, the idea of performance has gotten a lot of attention, and it's now ubiquitous in nearly every aspect of human life. Performance is a subjective interpretation of fact, which describes the concept's and its measurement instruments' plethora of essential reflections. The several research in the field of performance at the international level are also attributed to the global financial crisis, which has resulted in a constant need for change in the area of organization performance The term business performance is often used in academic literature, but it is inefficiently described. Due to the vast number of terms used in describing performance, the presence of a conception of this principle is being increasingly debated. As a result, terms like growth, quality, efficacy, economy, viability, and competition are used interchangeably to describe organizational performance. As a result, a simple and unambiguous conception of the idea of performance is becoming increasingly

important. The word "performance" first appeared in the mid-nineteenth century to describe the outcomes of an athletic competition.

Dividend Model: This shows that the valuation of the stock of a company is maintained by the anticipation of potential dividends. Stockholders buy shares by accepting the current valuation and would not pay the amount if they did not believe that the present value of potential inflows (that is dividends) are equivalent to the sum share price. The formula for the model of valuation of dividends set out as:

$P0 = D0(1+ g)/(r – g)$

Where:

P0 = the ex-div share price at time 0

D0 = the time 0 dividend

r = cost of capital

g = dividend growth rate.

1. Some Essential Features of Dividend Policy

- *Build Shareholders' Trust:* When a company's net profit percentage is unchanged, it maintains a steady stock valuation and pays appropriate dividends. In such an organization, the owners are therefore secure in their investing decisions.
- *Encouraging Institutional Investors:* A good credibility in the financial market comes from having a reasonable policy. As a result, the company's strong market presence draws institutional buyers who are willing to lend the company a larger amount.
- *Future Prospects:* The fund adequacy for the next initiative and investment prospects is planned, and the payout strategy is decided to escape illiquidity.
- *Equity Evaluation:* The value of a stock is normally measured by its dividend strategy, which represents the company's growth and productivity.
- *Market Value Stability of Shares:* Investors who are comfortable with the dividend scheme are more likely to retain the stock for the long term. This results in stability and a favorable effect on the market prices of the stocks.

- *Degree of Control:* It aids the organization in maintaining good financial management. That if the corporation distributes all, its profits as dividends, it can run out of money for future prospects.
- *Tax Advantage:* As opposed to the percentage of income tax paid, eligible dividends earned as a capital benefit are taxed at a lower rate.

B. General Dividend Concept

Dividend is a sum made to investors which is relative to the quantity of offers claimed. Dividend is approved by the top managerial staff (directors) of the firm. Dividends are typically given by organizations that won't procure noteworthy development by re-investing returns, thus rather decide to return compensations to investors as a profit. Organizations may likewise give profits to pull in investors, that are searching for a relentless wellspring of pay, and which can be solid lengthy-haul holders of the shares of the company. A dividend is the cash that an organization pays out to the investors from the benefits realized (Doughty, 2000). Such returns can be made in cash or by offering extra benefits as a written benefit. Davies and Pain (2002) defined the dividend as the sum paid to the beneficiary investors. Foong, Zakaria, and Tan (2007) constant profits are symbol of acceptable picture of the organization. Investors give moderately higher inclination to current profit as opposed to future unsure capital increase. Consequently, these hypotheses demonstrate that business worth and profit disbursement are between associated (Amidu, 2007).

Dividend policy is principally worried about the choices with respect to payout income and upkeep. It is a preference that implies the measurement of earnings must be maintained by the corporation and part should be apportion to the shareholders of the enterprise (Watson & Head, 2004). Hypothetically, there are various kinds of dividend policy. These incorporate consistent disbursement, enduring strategy, and zero approach, and non-cash strategy. Stockholders are believed to have a place with a specific gathering or demographic. This is on the grounds that they will in general set up their shelter with a specific strategy that may suite them. This is the customer base impact of dividend approach.

The payment or appropriation of benefit between the company and the residual owners is driven by the dividend scheme. It is a declaration that specifies the percentage of earnings that can be paid out as dividend to shareholders, considering the organization's climate and the shareholders' preferences. It's a statement that straddles the two sides of 0% dividend (keep all) and 100% dividend (pay-out all) (Baker, 1999). The dividend strategy aids managers in making decisions on what to do with earnings received over a fiscal cycle. The size of the profits paid to shareholders is determined by a company's dividend strategy. The net operating profit, also known as profit after tax (PAT), must be wisely allocated between dividends and investments (Modigliani, 1961). It also specifies the number of dividends to be paid to shareholders, the date on which dividends are received, and the effects of the payout strategy on the firm's valuation.

The several types of dividend policies are discussed as follows;

- *Constant Pay-out Dividend Policy:* This is a payout scheme that pays a fixed amount of earnings as a dividend. A company's payout strategy may be to shell out 20% of its profits as a dividend. Dividends change rapidly with earnings under this scheme. This strategy would not benefit an investor who is looking for a consistent source of income in the form of dividends. As a result, most businesses do not adhere to this approach.
- *Regular Dividend Policy:* This is the most prevalent dividend strategy, as it entails paying a consistent dividend on a regular basis. Through this scheme, shareholders should be assured that if a corporation starts paying a certain amount of dividend, it will not decrease and will be viable in the future. The dividend will continue to increase at a steady pace. Dividend cuts should be avoided by management. Once the dividend is up, the company will make every attempt to keep it from falling. However, if earnings continuously fall below the expected dividend sustainable amount, the company can consider reducing dividends (Da Silva, 2004).
- *Multiple Increase Dividend Policy:* This is a technique in which a business announces modest but regular dividend raises to give the illusion of growth and movement. A business that practices this approach assumes that dividend raises would have a consistent effect on the stock price.

- *The Residual Dividend Policy:* It is a payout strategy in which the organization decides to fund all additional construction investments from newly created equity. After all capital investments have been completed, dividend payments will be made as a residual. Until making any dividend payments, the business must aim to maintain a target capital base under the residual dividend model (Troughton, 2012).

C. Cash Dividends & Dividend Yield

A cash dividend is the most common kind of dividend. Public corporations typically distribute cash dividends four times a year. These are financial contributions made directly to owners in the ordinary course of operations, as the name implies. To put it another way, management finds nothing odd in the dividend and sees no justification why it shouldn't be maintained. A standard cash dividend and an annual cash dividend are also charged by businesses. When pointing to a section of the payout as "special," management is saying that it will or will not be replicated in the future. A special dividend is equivalent to a standard dividend, but the term generally means that it is a completely rare or one-time occurrence that cannot be replicated. Finally, a liquidating dividend typically indicates that any or more of the company's assets have been liquidated or sold off. Except in the case of a liquidating payout, a monetary dividend distribution decreases company cash and remaining earnings regardless to if it is called (where paid-in capital may be reduced). There are, of course, other kinds of dividends.

1. Objectives of Dividend Policy

The board's position on how to distribute remaining profits to shareholders is referred to as dividend strategy. A finance manager's key goal is to maximize the wealth of the company's stockholders. In the one side, dividend payments result in a rise in share prices, but they also result in a shortage of liquid capital for funding future ventures. Dividend payments and deferred earnings have an opposite relationship.

- *Wealth Maximization:* Dividend strategy has a major effect on a company's valuation, according to theoretical models. As a result, the dividend strategy will be established with the firm's goal of maximizing equity.

- *Future Prospects:* Dividend strategy is a funding choice that results in capital outflows as well as a drop in cash available to fund viable ventures. A business must focus on external funding if adequate funds are not available. As a result, the dividend strategy must be designed in such a way that remaining profits will be used to fund future programs.
- *Stable Rate of Dividend:* The stock price of shares is adversely affected by changes in the rate of return. A business should preserve a high proportion of earnings to hold enough funds for dividend payout as it faces a loss in order to maintain a steady dividend rate.
- *Degree of Control:* The degree of ownership held by current owners would be eroded by the issuance of new securities or reliance on foreign funding. As a result, a more aggressive payout strategy should be pursued so that current shareholders' rights are not affected.

It has been identified that the firm's dividend strategy has an impact on both long-term funding and shareholder wellbeing. As a result, the company's decision to pay dividends may be seen as both a long-term financing and a capital maximization decision. Some financial experts believe dividends are unimportant, but this is not the case. An organization has a dividend strategy of some kind. Many companies' standard payout strategy is to keep a percentage of their net profits and allocate the remainder to shareholders.

D. Agency Cost and Conflict Issues

The dividend is one of the motivating factors that compel shareholders to participate in capital raising for operating companies, which requires them to take a significant risk of expenditure. In this vein, corporate management develops a payout scheme to distribute dividends to customers in exchange for their contributions. Dividend policy has a direct influence on the firm's valuation which must achieve a balance between the company's growth and dividend policies. The agency partnership, according to Jensen and Meckling (1976), is typically formed when the owners enlist the aid of managers to carry out some of their duties. The conflicting interests of clients and management usually causes agency costs to rise. According to Short et al. (2002), dividend strategy played a critical role in lowering agency costs. Paying of dividends, according to Jensen (1986), causes a dispute between holders

and management. The conflict arises from the managers' desire to reinvest profits back into the company, while the shareholders desire to collect returns on their assets.

In the shareholders' desire for dividends to flow back into the company, managers keep the funds and divert them to unprofitable companies or other places for their own personal gain. As a result, there could be more friction between owners and management. The dividend payment strategy could be able to fix the problems. Dividend payment, according to Rozeff (1982), could serve as a tool for lowering agency costs. Many academics hypothesized that through managing dividend plans, shareholders might reduce agency costs. Dividend payout and stock holding are intertwined (Han, Lee, & Suk, 1999). Conflict of agency between investors and management, according to Leal and Carvalhal da Silva (2005), is the consequence of managers' insincerity in using shareholders' wealth. According to Stouraitis and Wu (2004), the dividend payout strategy can easily solve most of the problems associated with over-investment, especially in the area of competing interests between principals and agents.

E. Dividend Policy and Agency Conflicts

Conflicts of interest between minority shareholders and management may be discovered by dividend policy. Overinvestment, excessive capital use of different types, and inflated wages for administrators are also possible consequences of agency issues. Smart insiders will hold the dividend high as a tangible symbol of good faith to minority investors when acting selfishly in other areas. When it comes to investments in common stocks, shareholders' main aim is to maximize the value of their shares by earning large dividends. Managers, on the other hand, are involved in high retention rates in order to participate in the company's sustained development as well as to appease other clients, while potentially delivering personal advantages to them.

The payout scheme in corporations is typically one of the greatest conflicts of interest between owners and management. Payout, on the other hand, may be used to enforce self-discipline. Easterbrook (1984) proposed that stock investors could limit the cash they handle and thereby decrease their ability to waste time or participate in negative NPV projects. They claim that one way to extract excess cash from the

company is to raise payments. Payment of dividends has been suggested as helpful in mitigating the tensions between managers and shareholders of the agency. In addition, dividend payments is considered to include both bonding and tracking characteristics. As a bonding tool, dividend strategy would not only minimize the cost of equity to the agency, mitigate the potential for management to use company cash flow for ventures, but also lessen their ability to seek new acquisition opportunities.

F. Factors Affecting Dividend Payout Policy

Corporate judgments bordering on dividend policy rely on a variety of considerations, such as: regulatory restrictions, cash and liquidity profits, preferences of customers, supply of attractive investment options, shareholders' tax brackets, management restraints and contractual constraints. Other influences include economic cycles, government policy, management behavior, shareholders' income requirements, corporate age, consistency in the payment of dividends over time (Pandey, 2005). Firm features also impact dividend policy (Aivazian, Booth & Cleary, 2003). Dividend payments are shown to be adversely linked to profitability and debt, but favorably related to asset tangibility and market-to-book. The Pecking Order Hypothesis assumes that successful companies would tend to maintain free cash flow and thus lower dividend payments when deciding funding options. As a result, the payment of dividends is inversely proportional to the viability of the business. According to Ramli (2010), the dividend ratio is strongly and objectively important linked to the company's size and profitability rate.

G. Organizational Performance

Organizations carry out a variety of tasks to achieve their operational goals. These repeatable tasks that use the efficient procedures of the company must be quantified in order to determine the level of efficiency and for the management to make rational choices as to when, if necessary, to take steps to increase performance in the process. It may also be argued that there is a similar connection between the organizational purpose and the idea of organizational efficiency. Therefore, both organizations are likely to try to accomplish those pre-determined goals with the aid of available capital.

The perception of company performance is a measure of the aims and objectives of the business with the recent form in three different areas: financial, market and shareholder value. The outcome of an organization's return on revenue and return on assets is referred to as financial performance. Market performance refers to the ability of a business to make and deliver its outputs in the most cost-effective manner and to set a price that returns a fair profit to suppliers. In addition, market success refers to the willingness of a business to satisfy the needs and desires of customers about the goods or services provided. Some businesses also quantify market performance in relation to how excessive a share of the market such business has. Finally, shareholder value represents the value of what an individual owning stock in a company owns. These three metrics decide whether the organization is achieving its objectives. The idea of business performance is linked to the concepts of productivity and effectiveness. A company enterprise must produce the best things and generate them with the least feedback available if it is to have a good organizational efficiency.

H. Theories

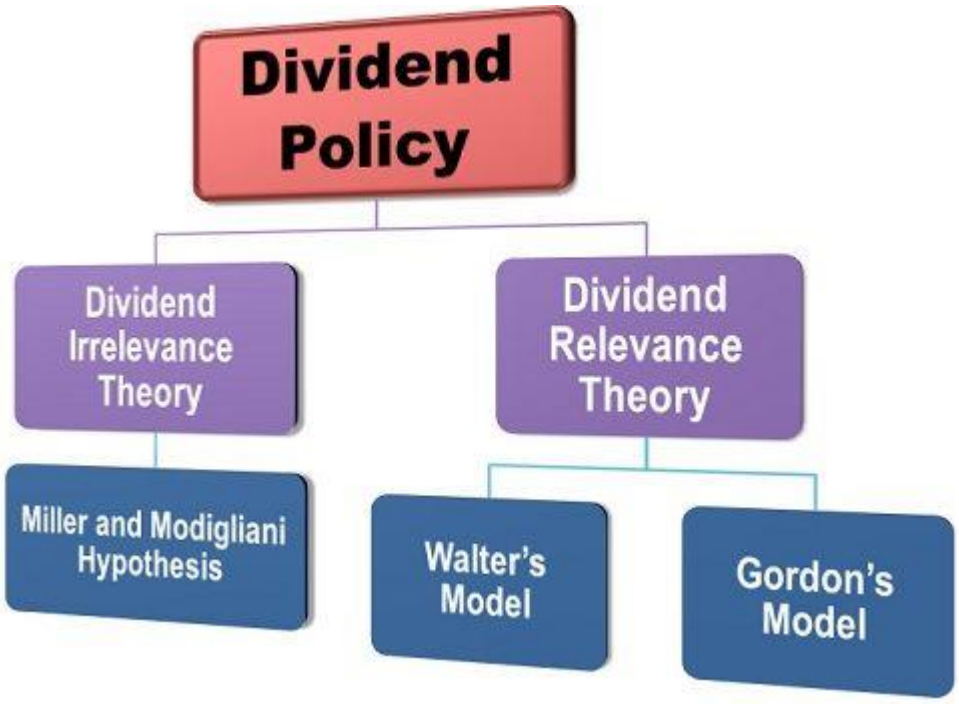

Figure 1. Dividend Policy

I. Hypothesis of Agency and Agency Relationship

This proponent depends on the presumption that business as an assortment of gatherings of individuals with conflicting interests and greedy thought systems. Jensen (1986) describes the relationship of the organization as an arrangement under which at least one person referred to as a member has approached someone else as an agent to provide some support for their benefit, including the transfer of some specific leadership authority to the operator. Organizational conflicts occur when there is an organizational partnership. The administration may perform practices which are not to the greatest advantage of the investors. Those collisions lead to an increase in the expense of operation (Ho, 2003). In such situations, companies will want to build up their profits and reduce the cost of the enterprise by disseminating free income. Subsequently, markets are strongly reacting to this type of data. Studies suggest that the proportion of benefit payouts could be explained by reducing the cost of the company when the business builds up its income payout.

Agency relationships exist because of the separation of ownership and management of limited liability corporations. Although there are many stakeholders in the corporation, namely, shareholders, management, labour, creditors, customers, etc, shareholders, the theoretical owners of the firm, are the dominant influence on management activities. Lease et al (2000) states that other stakeholders do not hold significant influence in the firm and because of this disparity in influence, an agency relationship exists. Baker et al (2002) states that, in their attempt to answer the dividend puzzle, firms pay dividends because they wish to reduce the agency cost among various stakeholders, especially the agency costs between shareholders and management. As stated by Lease et al (2000) a disparity occurs between shareholders and debenture holders on the performance of the firm's activities due to the risk that shareholders would default on servicing debt obligations. Shareholders profit from the company's financial performance, while debenture holders are vulnerable to market uncertainties that may lead to bankruptcy. Debenture holders despise dividends, according to Lease et al (2000), because dividend payments make debenture holders' cash flow more precarious by raising the likelihood of failure and diminishing the valuation of the resources that must be used to satisfy debt obligations. To avoid this from occurring and to reduce tensions between shareholders and debenture investors, dividend payout limits may be imposed.

J. Irrelevance Hypothesis

This was predicted by Miller and Modigliani (1961), since the situation was on stock income in the perfect market; one with the flexibility of the trading and benefit policies of the companies, the immaculate capital markets, no obligations, impeccable results, no trade or buoyancy costs, the markets are finished and no organizational or contractual costs related to the shareholding profit increments are paid out won't impact firm worth. Modigliani and Miller (1961) set forward the insignificance hypotheses which is called MM hypotheses and contended that the benefit agreement has no effect either on the valuation of the company's stock or on its capital expenditure. If profit strategy has no noteworthy impacts, at that point it would be insignificant. The explanation is that within the sight of immaculate checked conditions, financial specialists can make their own profits without cost. On the off chance that financial specialists need a profit they can basically auction a portion of their offers. Similarly, when speculators are provided with a profit that they do not need, they can simply be using the profit to purchase extra offers from the organization. Hence, when speculators are able to make their own profit arrangement without giving rise to additional costs, profits are in fact non-essential.

Anyway, the insignificance hypothesis just holds, in such an ideal market, where these seven suspicions hold. In any case, the screens are not big and there are prices and trade costs. The profit-irrelevance theory offers a mechanism through which the effects of a violation of any presumption can be checked. With the unwinding of the MM presumptions, various theories have been made.

K. Signaling Hypothesis

Dividend signaling theories provide a rationale for dividend changes and generate hypotheses about the announcement effects of dividends that have been observed in the empirical literature. Baker et al (2002) states that the signaling models for paying dividends, developed by Bhattacharya (1979 suggests that managers as insiders choose dividend payment levels and increases, to signal private information to investors. According to them, managers have an incentive to signal this private information to the investment public when they believe that the current market value of their firm’s shares is below its intrinsic level. The increased dividend payment serves as a credible signal when other firms that do not have favorable

inside information cannot copy the dividend increase without unduly increasing the chance of later incurring a drop in dividends.

The hypothesis advances the significance of asymmetry among investors and supervisors. This hypothesis uncovers how between time profits can be utilized as an apparatus and go about as a sign to release private info about an organization and its presentation to outcasts. Miller (1985) built up this hypothesis. This hypothesis expresses that dividends pass on info about future income. It encourages the way that financial specialists can gather info about an organization's future position and incomes depends on the signs that derive from the organization's statement of profits, both by testing the soundness of revenues and by adjusting profits. There is therefore a positive response to the increase in the dividend benefit and a negative response to the reduction in the dividend benefit. The hypothesis bolsters the way that dividend strategy influences emphatically the financial efficiency of a business.

The hypothesis suggests that speculators partly base their suppositions of future incomes of an organization on signals revealed by the firm. It shows info asymmetry among management and Potential investors would use profits as an instrument to flag up private information on the association's presentation to untouchables. The board won't build the profits except if they sure about the future gaining to meet the expansion in profits. What's more, then again profit cuts are "awful news" if the organizations lessen profits, it gives a negative message to financial professionals that future gains will not be exactly present Miller (1980). As suggested by the Signaling Hypothesis, the directors have inside details on a company that they cannot or do not want to provide clients with, for example, stronger gauges of future income. Corporate profits are the executives' most practical method for diminishing the speculator vulnerability about the organization's worth. Rock (1985) proposed that speculators have flawed data about firms‟ gainfulness, and subsequently profits work as a sign of expected incomes. However, organizations which are certain about high future incomes might want to impart this data to the financial specialists since it could in all probability increment showcase estimation of the firm. Simultaneously in any case, any firm might want to expand their estimated worth, so the signs ought to be with the end goal that poor growing companies would not be able to duplicate them.

Signaling assists with clarifying why a few firms would need to deliver out profits. Much of the time dividends‟ advantage to investors is littler than from capital additions on account of the higher expense rate; anyway, profit declarations can be utilized to feature managers‟ trust in anticipated future possibilities of the company. Anyway Skinner (1996) find contradicting proof that profits are bad at clarifying future income. On the off chance that the impact of topsy-turvy data on profits is extraordinary, at that point it ought to be obviously reflected by littler firms delivering out profits to a higher stretch out than the bigger. Directors are frequently hesitant to lessen profit installments base a piece of their view of the sureness about future income on declarations of profits. In this manner profit oversights are not generally welcomed by the financial specialists. Speculators consider increments to be profits as a positive sign while diminishes are negative. Moreover Bernheim (1995) show that the impact of profit flagging is much higher when assesses on profits are high.

L. Hypothesis of Bird in the Hand

According to this hypothesis, that censured Miller and Modigliani's paper clarifies that speculators lean toward profits (sure) to held income. This proposed by Gordon (1963) and Lintner (1962), is in accordance with dividend in such a case that every single other factor are equivalent, financial specialists incline toward profits to capital increases since they see profits today as a specific income, rather than capital gains later on which are unsure. It refers to the general term for all inquiries which state that the dividends are directly linked to the value of the firm, and therefore the value of the enterprise is a spurring force for the distribution of part of its earnings. The Financial Terms Hypothesis suggests that financial experts are more willing to put money into stocks that produce present earnings instead of putting resources into stocks that retain revenue and generate profits later. They contend that the joined estimation of profits and capital additions decrease when profit payout proportion increments. At a time when a company is building up its payout percentage, finance professionals are concerned that future capital rises in the sector will decline, as the income generated by the firm's reinvestment in the business has decreased. Irrespective of whether earnings are increasingly assured, they will be left uncommented and not important now. Ironically, financial experts also agree that they are, to such a degree that they influence their benefit inclinations. Often, when

making benefit payments, the corporation receives higher ratings from credit rating agencies as compared with a company that does not make such income payments. With a higher rating, the company will have the option of raising funds more easily from capital markets, because equity sources will give loans to the firm, while benefit returns demonstrate that the firm will fulfill its obligations. For fact, at times, the company will have the opportunity to obtain special rates and to enjoy great workplaces. Gordon (1963) also claims that profit-making companies would typically have an increase in the firm's estimate. Dividend is less hazardous than potential capital gains later on, financial specialists will be all the more ready to address a greater expense to a partnership with high pace of profit pay-out. Then again, if speculator acknowledge low pace of profit, they will require higher pace of return as a substitute for progressively dubious venture and afterward it brings about a greater expense of capital.

M. Empirical Review

Uwuigbe, Jafaru, and Ajayi (2012) considered the linking between dividend strategy and the performance of the quoted firms in Nigeria between 2006 and 2010. They used OLS regression method. They reported that firm performance and dividend strategy exhibited a positive connection between each other among the selected firms. Velnampy, Nimalthasan and Kalaiarasi (2014) wrote on the connection between dividend policy and corporate efficiency among quoted firm in Sri Lanka from 2008 to 2012 using statistical tools of correlation analysis, the study revealed that policy of dividend does not increase the performance of share earnings and payout dividend.

Yegon, Cheruiyot and Sang (2014) wrote on dividend policy and organization’s financial efficiency of Kenyan manufacturing companies between 2003 and 2013. The model set was analysis using regression method and showed that all the control variables used reported positive but not significant to influence dividend policy during the period. Rafiel and Far (2014) studied the relationship among state ownership, firm performance, and dividend policy in Tehran from 2009 to 2011 using regression form of estimation technique. They found that positive association exists payout ratio of dividend and firm performance.

Ibrahim and Saidu (2015) carried out an investigation about corporate tax effect on dividend policy among Nigerian firms between 2009 and 2013. The examination employed panel form of estimation technique and the outcomes showed that dividend policy and corporate tax have no influence between one another. Monogbe and Ibrahim (2015) examined the connection between dividend policy and financial performance among quoted firms of Nigeria. Regression method was employed and showed that positive connection exists between dividend and performance of the selected firm.

Lashgari and Moghaddam (2015) determined the connection between dividend policy and investment decision in Iran from 2009 to 2014. The findings from correlation and regression analysis showed that there exists a negative connection between dividend and investment of the selected firms. In Pakistan, Khan et al., (2016) wrote on the effect of dividend and performance of the firm between 2010 and 2015 using multiple regression technique. The findings of the investigation revealed that positive association exist between dividend policy, ROA, and sales growth.

Lilian (2016) investigated dividend policy and financial performance of some quoted banks in Kenya between 2011 and 2015 using correlation and regression analysis. The study indicated that total asset and capital adequacy influence financial performance while dividend per share showed no influence on ROA of selected firms. Reyna, (2017) examined the impact of ownership structure on the dividend policy in Mexico. The results of the study suggest that the accumulation of property in families has a negative effect on the payment of dividends.

Chidoziem and Ndubuiisi (2017) carried out taxation effect and dividend policy among banks in Nigeria between 2006 and 2015. Regression analysis and correlation were used in the investigation, and the outcome displayed that no positive connection between dividend policy and tax during the study period. Farrukh, Irshad, Khakwani, Ishaque, and Ansari (2017) wrote on the relationship among dividend policy, shareholders wealth and Pakistan firms' performance. the estimation technique via regression analysis reported that there exists positive connection among dividend policy, shareholders wealth and performance of the selected firms.

Jackline and Ombui (2017) examined the connection between dividend policy and firm performance in Kenya. Correlation and regression methods were used and revealed that positive connection exists between dividend policy and performance selected firm in Kenya. Turakpe and Legaaga (2017) determine the connection between dividend policy and performance of the corporate in Nigeria between 2011 and 2015 using regression analysis. They found that dividend policy contributes a positive effect to the performance of the selected corporations.

Sianipar and Kuswardono (2018) looked at financial performance impact on dividend policy among Indonesian quoted firms from 2010 to 2013. The stated hypotheses were tested using regression method and the outcome reported that ROE and ROA depicted significant effect on payout ratio of dividend. Odaro (2018) carried out an investigation about dividend policy on the growth of microfinance firm in Namibia using qualitative and quantitative methods, and he found that several forms of dividend exhibited an important effect on the efficiency of the selected microfinance firms during the study period.

Rahman (2018) wrote on dividend policy effect on performance of the firm in Pakistan Cement sector between 2012 and 2016. Ordinary least square method was employed to attain the objective, and the outcomes showed that positive connection was found between earning per share and return-on-equity during the study survey. Mukanzi, Kavwanyiri, and Miroga (2018) investigated the impact of dividend policy and financial performance among some quoted firms in Kenya from 2010 to 2014. Descriptive, correlation and regression methods were used and revealed that pay-out ratio, leverage and liquidity factors affect performance.

Etale and Ujuju (2018) wrote on dividend policy and wealth of the shareholders in Nigeria from 1987 to 2016. Several estimation techniques were used such as descriptive, OLS, unit root and co-integration tests, and showed that EPS exhibited positive effect on market price per share while dividend per share exhibited negative influence on market price per share. Ebire, Mukhtar, and Onmonya (2018) carried out a study on dividend policy and firm efficiency among Nigerian gas corporations between 2007 and 2026 using pooled regression, correlation and descriptive analysis. They discovered that payout ratio and retained earnings positively affect earnings per share, but dividend yield was revealed negative.

Table 1. Review Summary

Author(s) Name	Year	Country	Title	Method
Uwuigbe, Jafaru, and Ajayi	2012	Nigeria	Studied the connection between dividend strategy and performance of the quoted firms in Nigeria between 2006 and 2010.	OLS regression method
Velnampy, Nimalthasan, and Kalaiarasi	2014	Sri Lanka	Wrote on the connection between dividend policy and corporate performance among quoted firm in Sri Lanka from 2008 to 2012	Correlation analysis
Yegon, Cheruiyot and Sang	2014	Kenya	(2014) wrote on dividend policy and organization's financial efficiency of Kenyan manufacturing companies between 2003 and 2013.	Regression technique
Rafiel and Far	2014	Tehran	Studied the relationship among state ownership, firm performance and dividend policy in Tehran from 2009 to 2011.	Regression
Ibrahim and Saidu	2015		Carried out an investigation about corporate tax effect on dividend policy among Nigerian firms between 2009 and 2013.	The examination employed panel form of estimation technique
Monogbe and Ibrahim	2015	Nigeria	Studied the connection between dividend policy and financial performance among quoted firms of Nigeria.	Regression method
Lashgari and Moghaddam	2015	Iran	Determined the connection between dividend policy and investment decision in Iran from 2009 to 2014.	Correlation and regression analysis
Khan et al.,	2016	Pakistan	Wrote on the effect of dividend and performance of the firm between 2010 and 2015	Multiple regression technique
Lilian	2016	Kenya	Investigated dividend policy and financial performance of some quoted banks in Kenya between 2011 and 2015	Correlation and regression analysis
Reyna	2017		Examined the impact of ownership structure on the dividend policy in Mexico.	
Chidoziem and Ndubuiisi	2017	Nigeria	Carried out taxation effect and dividend policy among banks in Nigeria between 2006 and 2015.	Regression analysis and correlation method
Farrukh, Irshad, Khakwani, Ishaque, and Ansari	2017	Pakistan	Wrote on the relationship among dividend policy, shareholders wealth and Pakistan firms' performance.	Regression analysis
Jackline and Ombui	2017	Kenya	Examined the connection between dividend policy and firm performance in Kenya.	Correlation and regression methods
Turakpe and Legaaga	2017	Nigeria	Determine the connection between dividend policy and performance of the corporate in Nigeria between 2011 and 2015.	Regression analysis
Zayol and Mwanger	2017	Nigeria	Examined the connection between dividend policy and performance of the firms in Nigeria:	Empirical review

Table 1 (cont.) Review Summary

Author(s) Name	Year	Country	Title	Method
Williams and Ayodele	2018	Developing Countries	Investigated the impact of dividend policy on performance of quoted companies in a developing economy using twenty quoted firms from 2005 to 2016	
Sianipar and Kuswardono	2018	Indonesia	Looked at financial performance impact on dividend policy among Indonesian quoted firms from 2010 to 2013.	Regression method
Odaro	2018	Namibia	Carried out an investigation about dividend policy on the growth of microfinance firm in Namibia	Qualitative and quantitative methods
Rahman	2018	Pakistan	Wrote on dividend policy effect on performance of the firm in Pakistan Cement sector between 2012 and 2016.	Ordinary least square method
Mukanzi, Kavwanyiri, and Miroga	2018	Kenya	Investigated the impact of dividend policy and financial performance among some quoted firms in Kenya from 2010 to 2014.	Descriptive, correlation and regression methods
Etale and Ujuju	2018	Nigeria	Wrote on dividend policy and wealth of the shareholders in Nigeria from 1987 to 2016.	Descriptive, OLS, unit root and co-integration tests
Ebire, Mukhtar, and Onmonya	2018	Nigeria	(2018) carried out a study on dividend policy and firm efficiency among Nigerian gas corporations between 2007 and 2026.	Pooled regression, correlation and descriptive analysis
Chauhan, Ansari, Taqi, and Ajmal	2019	India	Studied the impact of dividend policy on profitability of IT firms in listed on India Stock Exchange.	Correlation matrix and panel regression analysis

Source: Writer's computation (2019)

N. Conceptual Framework

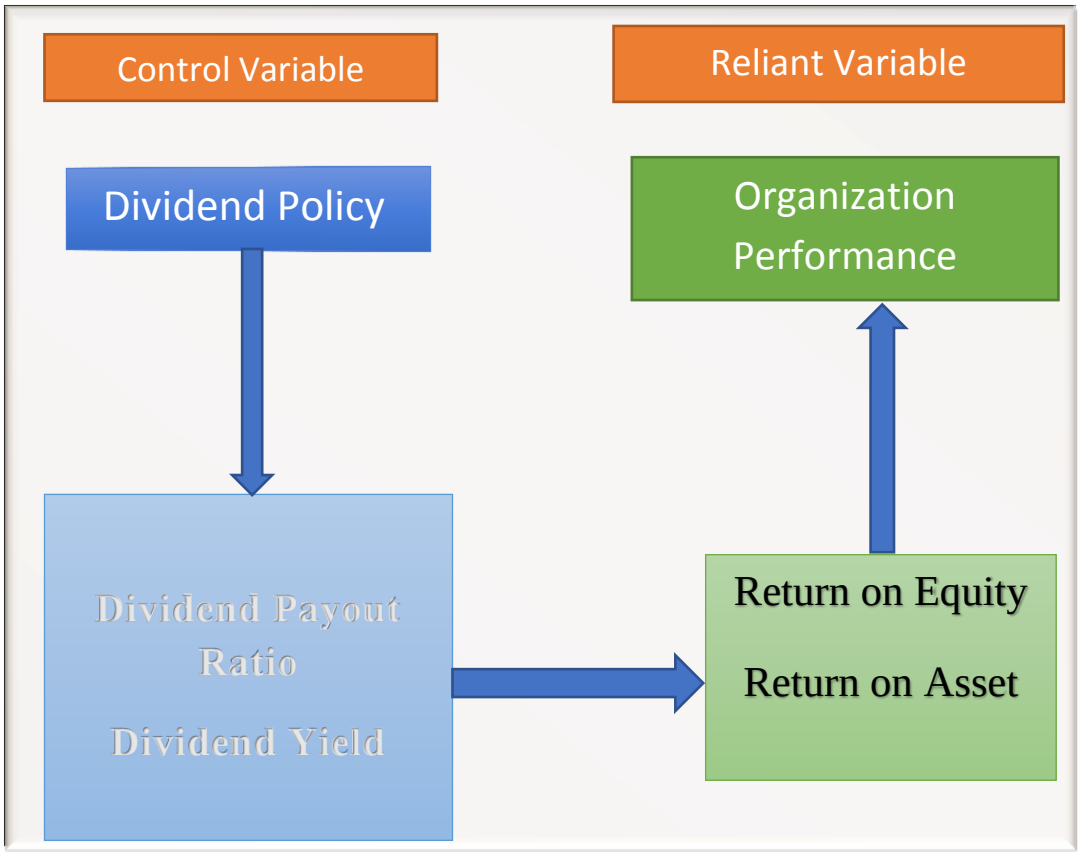

Figure 2. Conceptual Framework Displays The Affiliation Between The Control Variables and Reliant Variable

Source*:* Author's design (2020)

III. METHODOLOGY

This research used the observation approach in quantitative scientific testing to collate numerical data. This approach responds to whether, rather than how frequently, a certain phenomenon will arise and how. In this analysis, the secondary type of data was utilized using a descriptive research design. The descriptive review could demonstrate the relationship among the variables.

A. Model Specification

The study model is presented in functional and econometric forms as follows:

$ROA = f(DPR, DY)$ (1)

$ROE = f(DPR, DY)$ (2)

$ROA_t = \beta_0 + \beta_1 DPR_t + \beta_2 DY_t + \varepsilon$

$ROE_t = \beta_0 + \beta_1 DPR_t + \beta_2 DY_t + \varepsilon$

Where:

ROA	=	Return on Asset
ROE	=	Return on Equity
DPR	=	Dividend Pay-out Ratio
DY	=	Dividend Yield
ε	=	Error Term
$\beta_{0,}$	=	Constant Parameter
$\beta_1 - \beta_2$	=	Coefficients

B. Estimation Technique

The estimation techniques employed are as stated as follows:

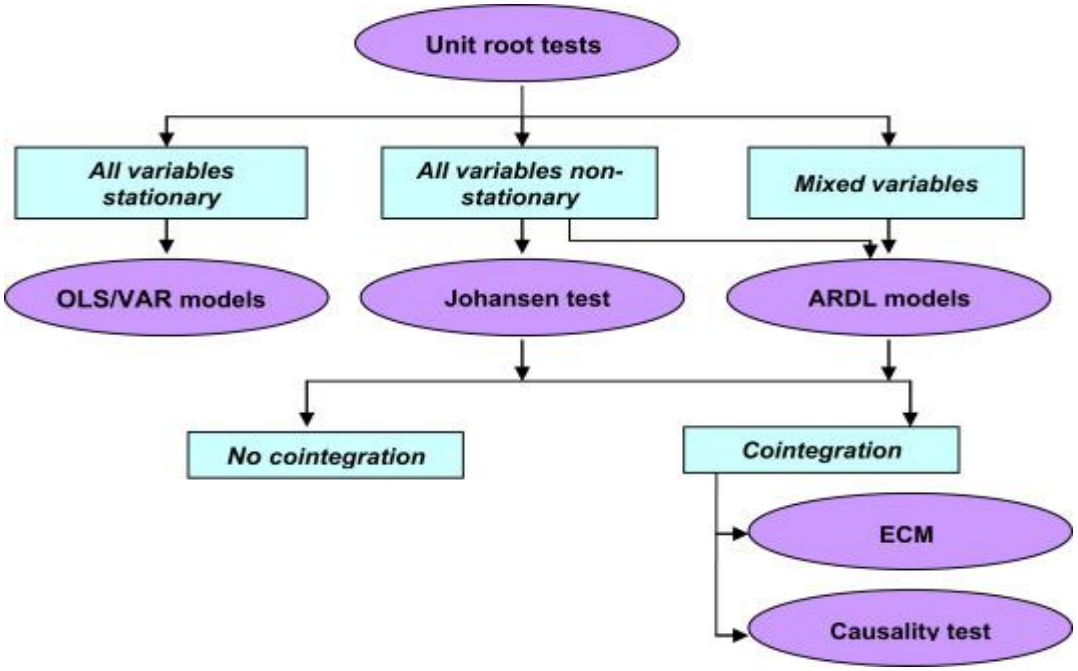

Figure 3.

Source: Shrestha and Bhatta (2018)

OLS: Ordinary least squares; VAR: Vector autoregressive; ARDL: Autoregressive distributed lags; ECM: Error correction models.

C. Unit Root

In time series analysis, it is important to understand the behavior of variables, their interactions, and integrations over time. If major characteristics of time series data are understood and addressed properly, a simple regression analysis using such data can tell about the pattern of relationships among variables of interest (Shresthaa & Bhatta, 2018). The statistical procedure employed to determine the stationarity of a series is called 'unit root test'. The Augmented Dickey–Fuller (ADF) test is the most common method for testing unit root. The null hypothesis of ADF is $\delta = 0$ against the alternative hypothesis of $\delta < 0$. If we do not reject null, the series is non-stationary whereas rejection means the series is stationary. This study used unit root testing to examine the stationarity of the variable. There exists different estimation techniques though augmented Dickey Fuller test was used in the study.

D. Regression Method

This was used to capture the connection between the dependent variable and the independent variable. More so, the impact of the controlling variable can be measured using regression analysis. Regression analysis is a set of statistical methods used for the estimation of relationships between a dependent variable and one or more independent variables. It can be utilized to assess the strength of the relationship between variables and for modeling the future relationship between them. Regression analysis includes several variations, such as linear, multiple linear, and nonlinear. The most common models are simple linear and multiple linear. Nonlinear regression analysis is commonly used for more complicated data sets in which the dependent and independent variables show a nonlinear relationship.

Simple linear regression is a model that assesses the relationship between a dependent variable and an independent variable. The simple linear model is expressed using the following equation:

$$Y = a + bX + \epsilon \quad (3)$$

Where:

- **Y** – Dependent variable
- **X** – Independent (explanatory) variable
- **a** – Intercept
- **b** – Slope
- **ϵ** – Residual (error)

Multiple linear regression follows the same conditions as the simple linear model. However, since there are several independent variables in multiple linear analysis.

E. ARDL Models

Johansen cointegration test cannot be applied directly if variables of interest are of mixed order of integration or all of them are not non-stationary, as this method requires all the variables to be I(1). An autoregressive distributed lag (ARDL) model is an ordinary least square (OLS) based model which is applicable for both non-stationary time series as well as for times series with mixed order of integration (Pesaran & Pesaran, 1997; Pesaean, & Shin, 1999).

ROA = C(1)*ROA(-1) + C(2)*DY + C(3)*DY(-1) + C(4)*DY(-2) + C(5)*DY(-3) + C(6)*DPR + C(7)*DPR(-1) + C(8)*DPR(-2) + C(9)*DPR(-3) + C(10)*DPR(-4) + C(11) (4)

This model was used to capture the long run relationship between the variable. However, the precondition reveals that when the variables are of different order of integration, that is the unit root are of different order of stationarity then autoregressive distributed lag is employed but if otherwise, cointegration test is used.

F. Vector Autoregressive

The vector autoregressive analysis was used after discovered that there is no long run connection between the variables. More so, the impulse response and variance decomposition were examined. Vector autoregression (VAR) is a statistical model used to capture the relationship between multiple quantities as they change over time. VAR is a type of stochastic process model. VAR models generalize the single-variable (univariate) autoregressive model by allowing for multivariate time series. VAR models are often used in economics and the natural sciences.

Like the autoregressive model, each variable has an equation modelling its evolution over time. This equation includes the variable's lagged (past) values, the lagged values of the other variables in the model, and an error term. VAR models do not require as much knowledge about the forces influencing a variable as do structural models with simultaneous equations.

A VAR model describes the evolution of a set of k variables, called endogenous variables, over time. Each period of time is numbered, t = 1, ..., T. The variables are collected in a vector, yt, which is of length k. (Equivalently, this vector might be described as a (k × 1)-matrix.) The vector is modelled as a linear function of its previous value. The vector's components are referred to as yi,t, meaning the observation at time t of the i th variable. For example, if the first variable in the model measures the price of wheat over time, then y1,1998 would indicate the price of wheat in the year 1998.

G. Granger Causality

This was employed to capture the causal effect between the variable. The concept of causality introduced by Wiener (1956) and Granger (1969) constitutes a basic notion for analyzing dynamic relationships between time series. In practice, Granger-causality is often investigated for bivariate processes. However, different conclusions may be reached when more than two variables are considered. The structures of the causal relationships between variables were analyzed through the Granger causality approach (Rossi, 2013). The Granger causality test is a statistical hypothesis test for determining whether one time series is useful for forecasting another. If probability value is less than any α level, then the hypothesis would be rejected at that level.

A time series X is said to Granger-cause Y if it can be shown, usually through a series of t-tests and F-tests on lagged values of X (and with lagged values of Y also included), that those X values provide statistically significant information about future values of Y. The literature on granger causality test is extensive and many tests and measures have been introduced to detect and quantify both linear and non-linear Granger causality (Bouezmarni et al. (2012), & Song and Taamouti (2018). The original definition of granger causality that have been adopted in this literature implicitly assumes that all the relevant information is available and used for the causality analysis.

If a time series is a stationary process, the test is performed using the level values of two (or more) variables. If the variables are non-stationary, then the test is done using first (or higher) differences. The number of lags to be included is usually chosen using an information criterion, such as the Akaike information criterion or the Schwarz information criterion. Any particular lagged value of one of the variables is retained in the regression if (1) it is significant according to a t-test, and (2) and the other lagged values of the variable jointly add explanatory power to the model according to an F-test. Then the null hypothesis of no Granger causality is not rejected if and only if no lagged values of an explanatory variable have been retained in the regression.

IV. INTERPRETATION OF RESULT

This part reveals the output of the analysis and the explanation. The ADF unit root test was conducted to study the stationarity of the variables, trailed by the post estimation techniques such as the serial correlation, normality test and heteroskedasticity test. Regression analysis was used to examine the connection between the dependent variables and the control variables. ARDL (Autoregressive distributed lag) and its bound test was conducted to establish the short/long-run connection among the variables. Vector autoregressive and granger causality tests were also conducted.

A. Unit Root Report

Table 2. ADF Unit Root @Level

Variable	t-statistic	Prob	Decision
ROE	-2.050974	0.2646	Not stationary
ROA	-2.253621	0.1956	Not stationary
DY	-4.440925	0.0028	Stationary
DPR	-3.488511	0.0202	Stationary

Source: Writer's computation

Table 2 presents the ADF unit root report. It was revealed that ROE has the t-statistic value of -2.050974 with Prob-value of 0.2646, indicating that ROE is not stationary at level. The ROA shows the t-statistic value of -2.253621 with prob-value of 0.1956, implying that ROA is not stationary at level. DY (dividend yield) shows the t-statistic value of -4.440925 with the probability value of 0.0028, representing that DY is stationary since the prob-value is less than 5percent significant level. The DPR (Dividend payout ratio) has the t-statistic value of -3.488511 with prob-value of 0.0202, implying that DPR is stationary at level.

Table 3. ADF Unit Root @First Difference

	t-stat.	Prob	Decision
ROE	-5.078216	0.0008	Stationary
ROA	-5.413703	0.0004	Stationary

Source: Writer's computation

Since some variables are not stationary at level, the first differencing was conducted and it was reported that ROE has the t-statistic value of -5.078216 with p-value of 0.0008, indicating that ROE is stationary at first difference. The ROA t-statistic value is -5.413703 with the p-value of 0.0004, implying that ROA became stationary after converting to first difference.

Table 4. Order of Stationary

Variable	Order of Stationary
ROE	I(1)
ROA	I(1)
DY	I(0)
DPR	I(0)

Source: Writer's computation

The order of stationary presented in Table 4 revealed that ROE and ROA were stationary after first difference while DY and DPR became stationary at level. However, the condition that variable(s) must be stationary was firstly examined and all the variables used in this investigation were stationary though in different orders.

B. Regression Analysis I

Table 5. Regression Output

Dependent Variable: ROA				
Variable	Coeff	Std. E	t-Stat	Prob.
C	0.013481	0.003583	3.762249	0.0016
DY	-0.002420	0.003041	-0.795847	0.4371
DPR	0.015257	0.007800	1.955918	0.0571
R-squared	0.617207			
F-statistic	2.358558			
Prob(F-statistic)	0.024738			

Source: Writer's computation

The regression equation of ROA = f(DY, DPR) presented in the above table shows that C (constant) exhibits a coefficient value of 0.013481, the std. error value is 0.003583, t-stat value is 3.762249 and the p-value is 0.0016, implying that when DY and DPR are held constant, ROA will move positively and significantly since the coefficient value is positive and the p-value is less than 5percent alpha level. The dividend yield (DY) has the coefficient value of -0.002420, t-statistic value of -0.795847 with prob-value of 0.4371, indicating that dividend yield has no effect on ROA. Meanwhile, DPR has the coefficient value of 0.015257, with std error value of

0.007800, t-statistic value of 1.955918 and p-value of 0.0571 representing that DPR is positive and significant to influence ROA. Additionally, a unit increase in DPR will increase ROA. The R-squared value is 0.617207 with F-statistic value of 2.358558 and its p-value is 0.024738, inferring that the two variables (DY and DPR) can jointly influence ROA.

C. Post-Estimation Techniques

1. Serial Correlation Test

Table 6. Serial Correlation Output

Breusch-Godfrey Test:			
F-stat	3.572991	Prob. F(2,15)	0.0538
R-squared	6.453525	Prob. Chi-Square(2)	0.0697

Source: Writer's computation

The serial correlation revealed in Table 6 shows the F-statistic value of 3.572991 with the observation R-squared value of 6.453525 and the probability of the Chi-Square value 0.0697, indicating that the variables are not serially correlated.

2. Normality test

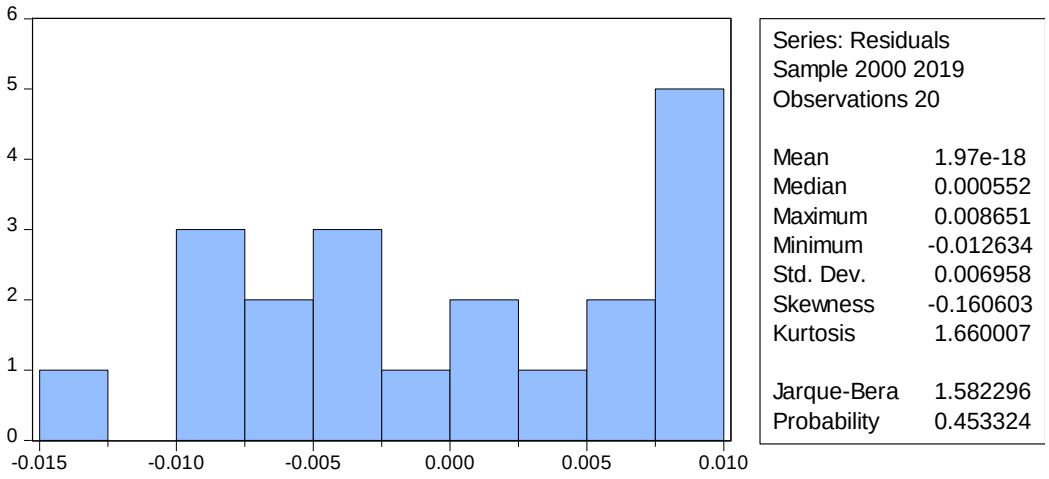

Figure 4. Normality Report

Source: Writer's computation

The normality report shows the Jarque-Bear value of 1.582296 with p-value of 0.453324, representing that the variables are normally distributed during study period.

3. Heteroskedasticity Test

Table 7. Breusch-Pagan-Godfrey Test

F-stat.	0.308617	Prob. F(2,17)	0.7385
Obs*R-squared	0.700716	Prob. Chi-Square(2)	0.7044
Scaled explained SS	0.167070	Prob. Chi-Square(2)	0.9199

Source: Writer's computation

The report of the heteroskedasticity test revealed the F-statistic value of 0.308617, observation value of 0.700716 with scaled explained value of 0.167070 including the probability chi-square value of 0.9199, representing that the null hypothesis failed to be accepted that the residuals are heteroskedastic, that is, the residuals are homoscedastic in nature.

3. Bounds Test

Autoregressive Distributed Lag (ARDL) was conducted and the model was presented as:

ROA = C(1)*ROA(-1) + C(2)*DY + C(3)*DY(-1) + C(4)*DY(-2) + C(5)*DY(-3) + C(6)*DPR + C(7)*DPR(-1) + C(8)*DPR(-2) + C(9)*DPR(-3) + C(10)*DPR(-4) + C(11) (5)

However, the bound test below was used to measures the short-run/long-run connection between/among the variables.

Table 8. Bounds Test

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	1.709920	2
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.63	3.35
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	5

Source: Writer's computation

The bound test reported the value of the F-statistic to be 1.709920 while the critical bound values are presented in lower bound and the upper bound. The lower bound level at 10% has the value of 2.63 with the upper bound value of 3.35, at 5%, the lower bound is 3.1 and the upper bound is 3.87, at 1% level, the lower bound is 4.13 and the upper bound has 5, implying that the null hypothesis that no long-run

relationships exist failed to be rejected since the t-statistic value is lower than the critical bound values at 10%, 5%, and 1% respectively.

Table 9. Bound Test- Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.005117	0.003808	1.343926	0.2367
ROA(-1)*	-0.014232	0.244808	-0.058135	0.9559
DY(-1)	0.005128	0.009228	0.555761	0.6023
DPR(-1)	-0.023211	0.022030	-1.053583	0.3403
D(DY)	-0.000823	0.002072	-0.397006	0.7077
D(DY(-1))	-0.007708	0.006516	-1.182930	0.2900
D(DY(-2))	-0.006945	0.003194	-2.174183	0.0817
D(DPR)	0.009389	0.009886	0.949759	0.3858
D(DPR(-1))	0.012339	0.013469	0.916091	0.4016
D(DPR(-2))	0.025272	0.012505	2.020989	0.0992
D(DPR(-3))	0.017590	0.008114	2.167958	0.0824
* p-value incompatible with t-Bounds distribution.				
		Levels Equation		
		Case 2: Restricted Constant and No Trend		
Variable	Coefficient	Std. Error	t-Statistic	Prob.
DY	0.360341	6.533508	0.055153	0.9582
DPR	-1.630891	29.41158	-0.055451	0.9579
C	0.359567	6.183873	0.058146	0.9559

Source: Writer's computation

The bound test error correction regression presented in Table 4.8 shows that in the long-run, the variables can not significantly influence ROA since the p-value is more than 5% level of significance and when all the independent variables are held constant, there will be no significant impact on ROA. The second case level equation revealed that dividend yield and dividend payout ratio have no significant impact on ROA in the long-run.

D. VAR Analysis

Table 10. Vector Autoregression Estimates

Standard errors in ( ) & t-statistics in [ ]			
	ROA	DY	DPR
ROA(-1)	0.513671	11.39996	3.879130
	(0.26965)	(22.4636)	(8.84169)
	[1.90497]	[0.50749]	[0.43873]
ROA(-2)	-0.103016	6.913160	10.35072
	(0.26655)	(22.2052)	(8.73999)
	[-0.38648]	[0.31133]	[1.18429]
DY(-1)	-0.000913	0.290489	0.164141
	(0.00341)	(0.28367)	(0.11165)
	[-0.26820]	[1.02404]	[1.47010]
DY(-2)	0.002058	-0.232872	0.247614
	(0.00299)	(0.24946)	(0.09819)
	[0.68726]	[-0.93352]	[2.52188]

Table 10 (cont.) Vector Autoregression Estimates

Standard errors in ( ) & t-statistics in [ ]			
DPR(-1)	-0.004896	1.613902	-0.175695
	(0.00760)	(0.63314)	(0.24920)
	[-0.64415]	[2.54905]	[-0.70503]
DPR(-2)	0.024787	-1.669430	-0.067675
	(0.00811)	(0.67584)	(0.26601)
	[3.05532]	[-2.47016]	[-0.25441]
C	0.001923	0.197617	-0.069492
	(0.00452)	(0.37691)	(0.14835)
	[0.42511]	[0.52431]	[-0.46843]
R-squared	0.663232	0.549655	0.544467
Adj. R-squared	0.479541	0.304012	0.295995
F-statistic	3.610575	2.237616	2.191260

Source: Writer's computation

The ARDL model predicted that no long run relationship exists among the variables which necessitates the use of vector autoregressive analysis. 2 lag length was used, and the report of the standard errors and t-statistic were presented in the table above.

1. VAR-Impulse Response Function

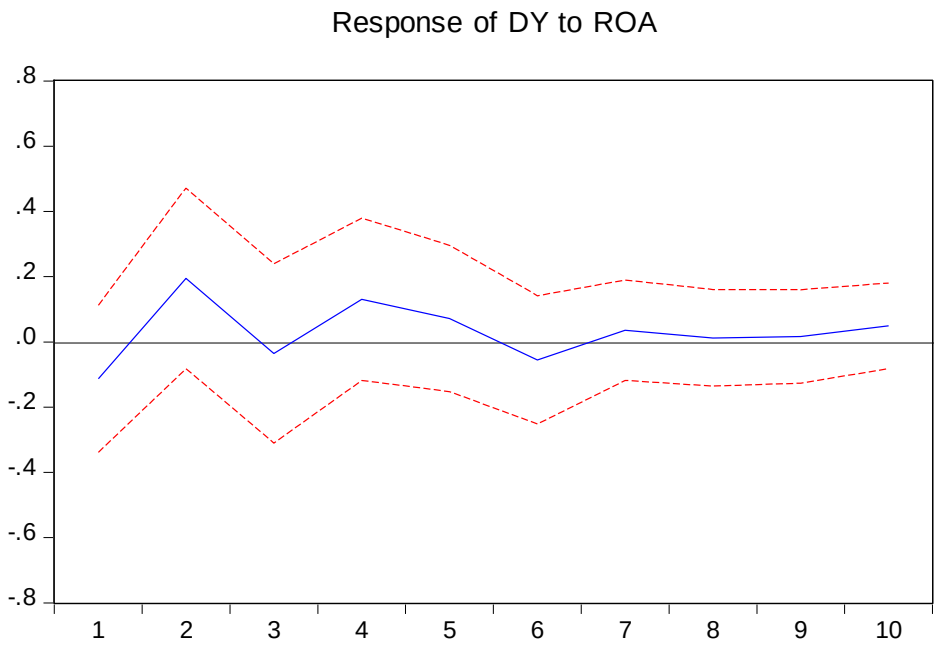

Figure 5. – VAR – IRF – DY to ROA

The impulse response function of dividend yield to return on asset reveals that dividend yield (DY) oscillated from negative at the beginning of quarter 1 which later move significantly positive at the end of the third quarter period one to the second quarter period 3. Its oscillated negative at the third quarter period 3 and move significantly positive at the beginning of period 4 to the end of quarter four period 5,

though it moves insignificantly negative at period 6 but later oscillated positively but not significant.

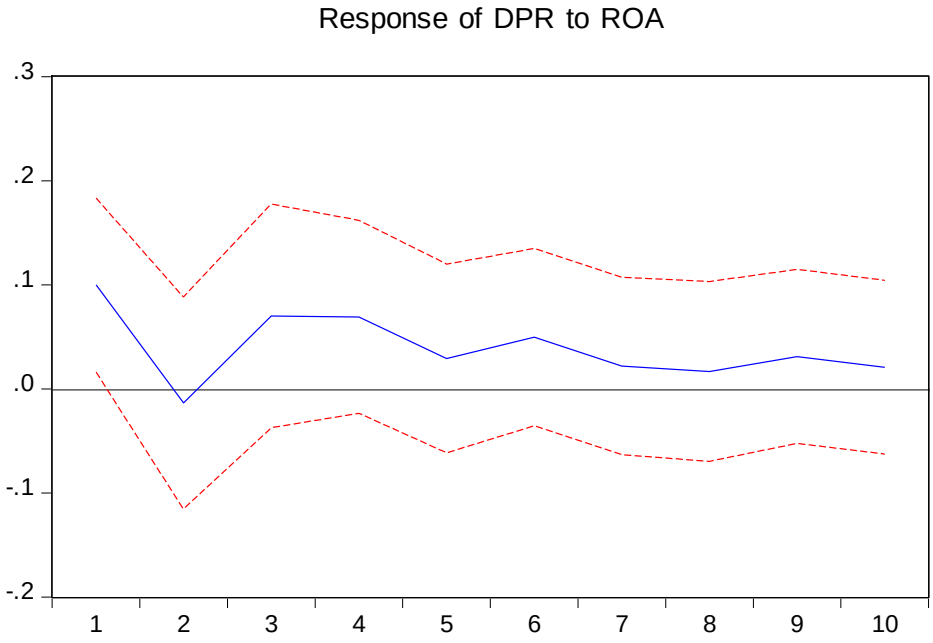

Figure 6. VAR – IRF – DPR to ROA

The response of dividend payout ratio to return on asset shows that dividend payout ratio moves positively significant from the beginning of period 1 though later oscillated negative in the third quarter of period 2 and later move significantly positive to the end of period 10.

2. Variance Decomposition (VD)

Table 11. VD of ROA:

Period	S.E.	ROA	DY	DPR
1	0.005822	100.0000	0.000000	0.000000
2	0.006431	98.34104	0.183573	1.475391
3	0.007857	79.22525	0.438345	20.33640
4	0.008222	73.71171	3.178460	23.10983
5	0.009188	61.35943	19.48272	19.15785
6	0.009766	60.31480	21.95000	17.73520
7	0.009966	61.04701	21.87466	17.07834
8	0.010119	61.82944	21.36209	16.80847
9	0.010232	61.80422	20.90025	17.29552
10	0.010308	61.35792	21.30209	17.33998

Source: Writer's computation

Table 11 shows the variance decomposition of return on asset as against other variables such dividend yield and dividend payout ratio. Aside the own shock (ROA), dividend payout ratio has the highest contribution with the value of 1.475391

at period 2 in the short-run. Meanwhile, the long-run period 10 shows that dividend yield has the highest contributor to return on asset. This indicates that dividend payout ratio could contribute more to ROA in the short-run while dividend yield contributes more in the long-run to ROA.

Table 12. VD of DY

Period	S.E.	ROA	DY	DPR
1	0.484982	5.428825	94.57118	0.000000
2	0.588905	14.61244	66.26390	19.12367
3	0.646708	12.42166	57.28214	30.29620
4	0.661843	15.74562	55.32547	28.92891
5	0.695084	15.33921	56.88943	27.77136
6	0.698393	15.81923	56.40901	27.77176
7	0.708012	15.64736	55.80726	28.54538
8	0.708879	15.63829	55.87555	28.48616
9	0.712977	15.51254	56.04179	28.44567
10	0.715059	15.89350	55.73623	28.37027

Source: Writer's computation

The shock of dividend yield to return on asset and dividend payout ratio reveals that, at period 2, ROA has the value of 14.61244, DY has the value of 66.26390 while DPR has a value of 19.12367, indicating that aside the dividend yield variance, DPR has the highest percentage to contribute to dividend yield followed by ROA in the short-run. Though, in the long-run, at 10, aside its own impulse, DPR has the maximum value of 28.37027 followed by ROA with the value of 15.89350. This implies that dividend payout ratio has highest value both in the short run and long run respectively.

Table 13. VD of DPR

Period	S.E.	ROA	DY	DPR
1	0.190890	27.36472	2.756934	69.87835
2	0.210460	22.92407	17.81481	59.26112
3	0.253134	23.48391	33.81376	42.70233
4	0.263640	28.51242	31.23668	40.25090
5	0.267507	28.88015	31.19566	39.92418
6	0.274905	30.61069	29.61366	39.77565
7	0.276605	30.85559	29.25872	39.88569
8	0.280029	30.45762	30.56034	38.98204
9	0.283601	30.89275	30.61230	38.49494
10	0.284778	31.16366	30.65858	38.17776

Source: Writer's computation

In the Table 13, the variance decomposition of dividend payout ratio shows that dividend yield has the highest value of 33.81376 followed by ROA with the value of 23.48391, indicating that in the short-run period 3, dividend yield contributes significantly to dividend payout ratio. The long-run period 10 reveals that, aside the own shock, ROA has the highest value of 31.16366 and the dividend yield has the value of 30.65858, implying that return on asset contributes more to dividend yield ratio during the study period.

3. Second Equation

$$ROE = f(DY\ DPR) \quad (6)$$

E. Regression Analysis II

Table 14. Regression Output II

Dependent Variable: ROE				
Variable	Coeff	Std. Err	t-Stat	Prob.
C	0.137450	0.047553	2.890444	0.0102
DY	-0.005627	0.040353	-0.139433	0.8907
DPR	0.106454	0.103519	1.028357	0.3182
R-squared	0.061005			
F-statistic	0.552228	Durbin-Watson stat		0.816284
Prob(F-statistic)	0.585651			

Source: Writer's computation

The second regression equation of ROE = f(DY, DPR) showed in the above table reveals that C (constant) exhibits a coefficient value of 0.137450, the std. error value is 0.047553, t-statistic value is 2.890444 and the p-value is 0.0102, implying that when DY and DPR are held constant, return on equity will move positively and significantly since the coefficient value is positive and the p-value is less than 5percent significance level. The dividend yield (DY) has the coefficient value of -0.005627, t-statistic value of -0.139433 with p-value of 0.8907, indicating that dividend yield has no effect on ROE. Meanwhile, DPR has the coefficient value of 0.106454, with std error value of 0.103519, t-statistic value of 1.028357and p-value of 0.3182 indicating that DPR is positive but insignificant to influence return on equity during the study period. Furthermore, a unit increase in DPR will increase ROE.

1. Serial Correlation

Table 15. Breusch-Godfrey LM Test

F-statistic	3.481722	Prob. F(2,15)	0.0573
Obs*R-squared	6.340940	Prob. Chi-Square(2)	0.0620

Source: Writer's computation

The serial correlation report of the Breusch-Godfrey revealed in Table 15 shows the F-statistic value of 3.481722 with the observation R-squared value of 6.340940 and the probability of the Chi-Square value 0.0620, indicating that the variables are not serially correlated.

2. Normality Test

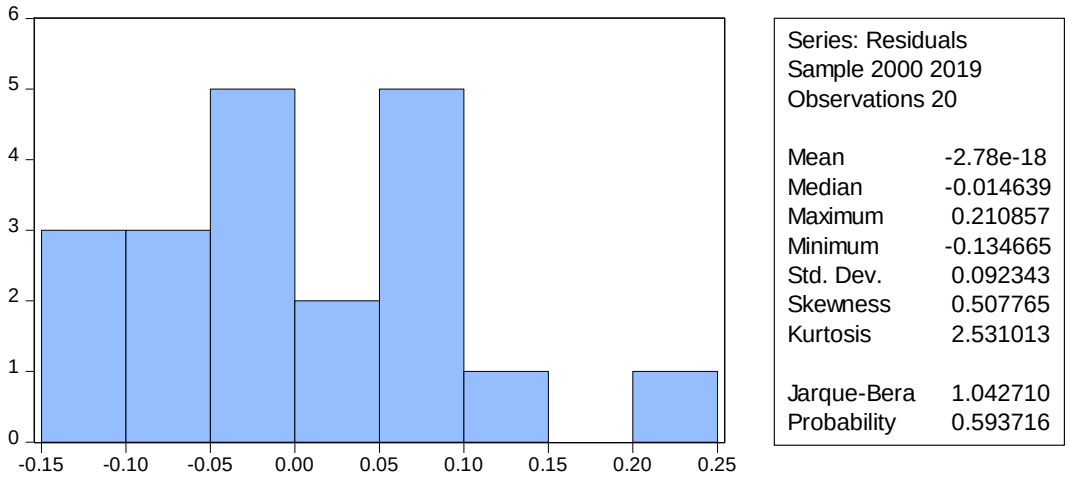

Figure 7. Normality Report II

The normality report shows the Jarque-Bear value of 1.042710 with p-value of 0.593716, indicating that the variables are normally distributed during study period.

3. Heteroskedasticity Test

Table 16. Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.118275	Prob. F(2,17)	0.3497
Obs*R-squared	2.325312	Prob. Chi-Square(2)	0.3127
Scaled explained SS	1.286080	Prob. Chi-Square(2)	0.5257

Source: Writer's computation

The report of the heteroskedasticity test revealed the F-statistic value of 1.118275, observation value of 2.325312 with scaled explained value of 1.286080 including the probability chi-square value of 0.5257, indicating that the null

hypothesis failed to be accepted that the residuals are heteroskedastic, though the residuals are homoscedastic in nature.

4. Bounds Test

Table 17. ARDL Bounds Test

Null Hypothesis: No long-run relationships exist		
Test Statistic	Value	k
F-statistic	22.75535	2
Critical Value Bounds		
Significance	I0 Bound	I1 Bound
10%	2.63	3.35
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	5

Source: Writer's computation

The bound test reported the value of the F-statistic to be 22.75535while the critical bound values are presented in lower bound and the upper bound. The lower bound level at 10% has the value of 2.63 with the upper bound value of 3.35, at 5%, the lower bound is 3.1 and the upper bound is 3.87, at 1% level, the lower bound is 4.13 and the upper bound has 5, implying that the null hypothesis that no long-run relationships exist was rejected since the t-statistic value is more than the critical bound values at 10%, 5%, and 1% respectively.

F. VAR- II

Table 18. Vector Autoregression Estimates

Standard errors in ( ) & t-statistics in [ ]			
	ROE	DY	DPR
ROE(-1)	0.401483	-1.197792	0.329095
	(0.29284)	(2.00905)	(0.76779)
	[1.37099]	[-0.59620]	[0.42863]
ROE(-2)	0.108412	1.772983	0.847878
	(0.26737)	(1.83430)	(0.70101)
	[0.40548]	[0.96657]	[1.20952]
DY(-1)	-0.009886	0.204400	0.196456
	(0.03759)	(0.25789)	(0.09856)
	[-0.26299]	[0.79257]	[1.99329]
DY(-2)	0.014053	-0.188993	0.225581
	(0.03539)	(0.24281)	(0.09279)
	[0.39705]	[-0.77835]	[2.43099]
DPR(-1)	0.057575	1.610991	-0.164163
	(0.09225)	(0.63289)	(0.24187)
	[0.62411]	[2.54544]	[-0.67873]

Table 18 (cont.) Vector Autoregression Estimates

Standard errors in ( ) & t-statistics in [ ]			
DPR(-2)	0.170943	-1.358554	-0.070918
	(0.10624)	(0.72888)	(0.27855)
	[1.60899]	[-1.86388]	[-0.25459]
C	-0.011561	0.314995	-0.028411
	(0.04893)	(0.33570)	(0.12829)
	[-0.23626]	[0.93832]	[-0.22145]
R-squared	0.615439	0.551339	0.572162
Adj. R-squared	0.405679	0.306615	0.338796
F-statistic	2.934010	2.252900	2.451776
Log likelihood	26.61490	-8.049306	9.264966

Source: Writer's computation

2 lag length was used, and the report of the standard errors and t-statistic were presented in the table above.

1. VAR- IRF II

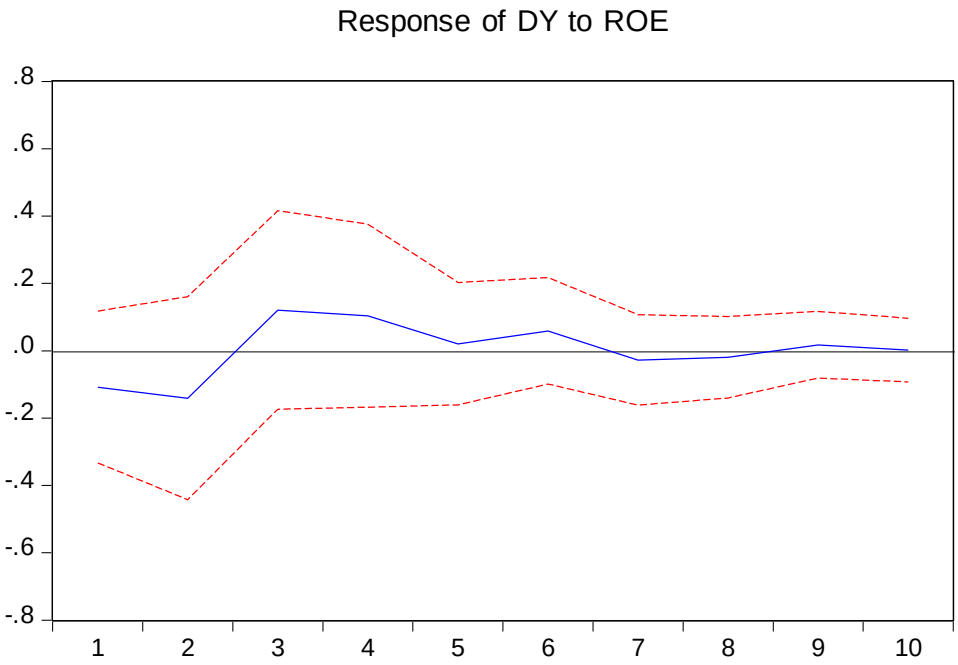

Figure 8. VAR – IRF – DY to ROE

The impulse response function of dividend yield to return on equity shows that dividend yield (DY) oscillated from negative at the beginning of quarter 1 period 1 to the beginning of period 3 quarter 1 and later move significantly positive at the end of the first quarter period 3 to the last quarter period 6. Its then oscillated negative and positive insignificantly to the end of period 10.

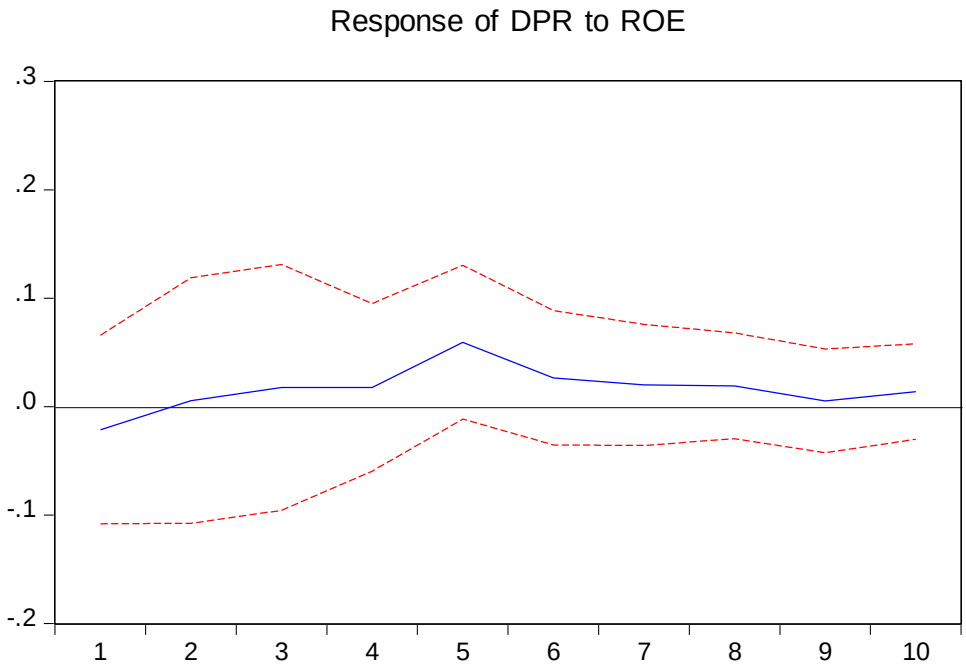

Figure 9. VAR – IRF – DPR to ROE

The response of dividend payout ratio to return on asset shows that dividend payout ratio moves negative from the beginning of period 1 though later oscillated positively at the end of quarter 2 period 2 to the last period.

2. VDF II

Table 19. VD of ROE

Period	S.E.	ROE	DY	DPR
1	0.070559	100.0000	0.000000	0.000000
2	0.077035	97.26428	1.008312	1.727403
3	0.083993	85.22596	0.848480	13.92556
4	0.088556	77.49767	6.126163	16.37617
5	0.094480	69.12223	13.16593	17.71184
6	0.097642	66.33380	15.71655	17.94966
7	0.100268	65.91281	16.86046	17.22673
8	0.101903	66.01061	16.71165	17.27773
9	0.103005	66.01955	16.53087	17.44958
10	0.103960	65.67418	16.66947	17.65635

Source: Writer's computation

Table 19 shows the variance decomposition of return on equity and aside the own shock, dividend payout ratio has the highest contribution with the value of 1.727403 at period 2 in the short run. Meanwhile, the long-run period 10 shows that dividend payout ratio has the highest contributor to return on equity. This indicates that dividend payout ratio could contribute more to ROE in the short-run and long-run.

Table 20. Variance Decomposition of DY

Period	S.E.	ROE	DY	DPR
1	0.484074	4.979588	95.02041	0.000000
2	0.578412	9.424423	66.58605	23.98952
3	0.656949	10.68600	57.41153	31.90247
4	0.665693	12.83176	56.09767	31.07057
5	0.688923	12.07066	58.30002	29.62932
6	0.695267	12.56925	57.36865	30.06210
7	0.701713	12.49365	56.32565	31.18070
8	0.702368	12.54684	56.23755	31.21561
9	0.706367	12.46649	56.60167	30.93184
10	0.707062	12.44266	56.49046	31.06689

Source: Writer's computation

The shock of dividend yield to return on equity and dividend payout ratio reveals that, at period 2, ROE has the value of 9.424423, DY has the value of 66.58605 while DPR has a value of 23.98952, indicating that aside the dividend yield shock, DPR has the highest percentage to contribute to dividend yield followed by ROE in the short-run. However, in the long-run period 10, aside its own impulse, DPR has the highest value of 31.06689 followed by ROE with the value of 12.44266. This implies that dividend payout ratio has highest percentage both in the short run and long run respectively.

Table 21. Variance Decomposition of DPR

Period	S.E.	ROE	DY	DPR
1	0.184996	1.327463	8.310769	90.36177
2	0.213027	1.067718	28.94984	69.98245
3	0.238717	1.396958	38.26253	60.34051
4	0.241136	1.904006	37.53278	60.56321
5	0.253576	7.184015	36.53303	56.28296
6	0.257385	8.029649	35.54328	56.42708
7	0.258595	8.548402	35.27162	56.17997
8	0.260736	8.938388	35.68554	55.37607
9	0.262578	8.851886	35.35339	55.79472
10	0.263678	9.047944	35.58537	55.36669

Source: Writer's computation

In the Table 21, the variance decomposition of dividend payout ratio shows that dividend yield has the highest value of 38.26253 followed by ROE with the value of 1.396958, indicating that in the short-run period 3, dividend yield contributes significantly to dividend payout ratio. The long-run period 10 reveals that, aside the own shock, dividend yield has the highest value of 35.58537 and the ROE has the value of 9.047944, implying that dividend yield contributes more to dividend payout ratio.

G. Granger Causality Test

Table 22. Granger Causality Report

Pairwise Tests This symbol '→'implies 'does not granger cause'			
Null Hypothesis:	Obs	F-Statistic	Prob.
DY → ROE	18	0.36509	0.7010
ROE → DY		1.70360	0.2202
DPR → ROE	18	2.46197	0.1240
ROE → DPR		0.58386	0.5717
ROA → ROE	18	1.35550	0.2919
ROE → ROA		3.64267	0.0555
DPR → DY	18	6.69535	0.0100
DY → DPR		3.60590	0.0568
ROA → DY	18	0.50777	0.6133
DY → ROA		0.75018	0.4917
ROA → DPR	18	0.42355	0.6634
DPR → ROA		6.39854	0.0116

Source: Writer's computation

The granger causality report shows the F-statistic value of 0.36509 with p-value of 0.7010 the DY does not granger cause ROE while ROE does not granger cause DY has the F-statistic value of 1.70360 and p-value of 0.2202, since the p-value of the two hypotheses are more than 5% significance level, the null hypothesis failed to be rejected, indicating that there is no causality between DY and ROE. The hypothesis between DPR and ROE reveals that the p-values are more the 5percentage alpha level which implies that there is no causality between DPR and ROE. However, the null hypothesis that ROA does not granger cause ROE has the F-statistic value of 1.35550 with p-value of 0.2919 while the null hypothesis that ROE granger cause ROA has the F-statistic value of 3.64267 with p-value of 0.0555, this indicates that ROE can granger cause ROA but ROA can not granger cause ROE, meaning that there is a uni-directional relationship between ROE and ROA. More so, the relationship DPR and DY shows that there exists a bi-directional relationship between dividend payout ratio and dividend yield because the p-values are less than 5percentage level od significance that is the null hypothesis failed to be accepted. The relationship between ROA and dividend yield reveals that the two variables can not granger cause one another since their p-values are more than 5% level of significance. Meanwhile the relationship between ROA and DPR reveals that DPR can granger cause ROA but ROA cannot grange cause DPR that is there is a uni-directional relationship between ROA and DPR.

H. Discussion of Findings

Based on the analysis conducted in this study, it was reported that return on equity and return on asset were stationary after first difference while dividend yield and dividend payout ratio were stationary at level. However, the condition that variable(s) must be stationary was firstly examined and all the variables used were stationary though in different orders. The regression equation of ROA = f(DY, DPR) showed that when DY and DPR are held constant, ROA will move positively and significantly since the coefficient value is positive and the p-value is less than 5percent alpha level. The dividend yield (DY) contributes negatively and insignificantly to influence return on asset (ROA). Meanwhile, DPR was positive and significant to influence ROA. Additionally, a unit increase in DPR will increase ROA. The bound test reported that the null hypothesis that no long-run relationships exist failed to be rejected since the t-statistic value is lower than the critical bound values at 10%, 5%, and 1% respectively.

The VAR impulse response function of dividend yield to return on asset reveals that dividend yield (DY) oscillated from negative at the beginning of quarter 1 which later move significantly positive at the end of the third quarter period one to the second quarter period 3. Its oscillated negative at the third quarter period 3 and move significantly positive at the beginning of period 4 to the end of quarter four period 5, though it moves insignificantly negative at period 6 but later oscillated positively but not significant. More so, the response of dividend payout ratio to return on asset shows that dividend payout ratio moves positively significant from the beginning of period 1 though later oscillated negative in the third quarter of period 2 and later move significantly positive to the end of period 10. The variance decomposition of return on asset as against other variables such dividend yield and dividend payout ratio. Aside the own shock (ROA), dividend payout ratio has the highest contribution with the value of 1.475391 at period 2 in the short run. Meanwhile, the long-run period 10 shows that dividend yield has the highest contributor to return on asset. This indicates that dividend payout ratio could contribute more to ROA in the short-run while dividend yield contributes more in the long-run to ROA.

The shock of dividend yield to return on asset and dividend payout ratio reveals that, at period 2, aside the dividend yield variance, DPR has the highest percentage to contribute to dividend yield followed by ROA in the short-run. However, in the long-run period 10, aside its own impulse, DPR has the highest value of 28.37027 followed by ROA with the value of 15.89350. This implies that dividend payout ratio has highest value both in the short run and long run respectively. The variance decomposition of dividend payout ratio showed that in the short-run period 3, dividend yield contributes significantly to dividend payout ratio. The long-run period 10 reveals that, aside the own shock, ROA has the highest value of 31.16366 and the dividend yield has the value of 30.65858, implying that return on asset contributes more to dividend yield ratio during the study period.

The second regression equation of ROE = f(DY, DPR) showed that when DY and DPR are held constant, return on equity will move positively and significantly since the coefficient value is positive and the p-value is less than 5percent significance level. The dividend yield contributes negatively and insignificantly to influence return on equity. Meanwhile, DPR was positive but insignificant to influence return on equity during the study period. The ARDL bound test reported the value of the F-statistic to be 22.75535while the critical bound values are presented in lower bound and the upper bound. The result showed that the null hypothesis that no long-run relationships exist was rejected since the t-statistic value is more than the critical bound values at 10%, 5%, and 1% respectively.

The impulse response function of dividend yield to return on equity shows that dividend yield (DY) oscillated from negative at the beginning of quarter 1 period 1 to the beginning of period 3 quarter 1 and later move significantly positive at the end of the first quarter period 3 to the last quarter period 6. Its then oscillated negative and positive insignificantly to the end of period 10. The response of dividend payout ratio to return on asset shows that dividend payout ratio moves negative from the beginning of period 1 though later oscillated positively at the end of quarter 2 period 2 to the last period.

The variance decomposition of return on equity and aside the own shock, dividend payout ratio has the highest contribution with the value of 1.727403 at period 2 in the short run. Meanwhile, the long-run period 10 shows that dividend payout ratio has the highest contributor to return on equity. This indicates that

dividend payout ratio could contribute more to ROE in the short-run and long-run. The shock of dividend yield to return on equity and dividend payout ratio reveals that, aside the dividend yield shock, DPR has the highest percentage to contribute to dividend yield followed by ROE in the short-run. However, in the long-run period 10, aside its own impulse, dividend payout ratio has highest percentage both in the short run and long run respectively. The variance decomposition of dividend payout ratio showed that dividend yield contributes significantly to dividend payout ratio. The long-run period 10 reveals that, aside the own shock, dividend yield has the highest value of 35.58537 and the ROE has the value of 9.047944, implying that dividend yield contributes more to dividend payout ratio.

The granger causality reported that there is no causality between DY and ROE, the hypothesis between DPR and ROE revealed that there is no causality between DPR and ROE, it was further revealed that ROE can granger cause ROA but ROA cannot granger cause ROE, meaning that there is a uni-directional relationship between ROE and ROA. More so, the relationship DPR and DY showed that there exists a bi-directional relationship between dividend payout ratio and dividend yield because the p-values are less than 5percentage level of significance that is the null hypothesis failed to be accepted. The relationship between ROA and dividend yield revealed that the two variables cannot granger cause one another. Meanwhile the relationship between ROA and DPR revealed that DPR can granger cause ROA but ROA cannot grange cause DPR that is there is a uni-directional relationship between ROA and DPR.

V. SUMMARY AND CONCLUSION

A. Summary

The main purpose of the investigation is to analyze the effect of the dividend policy on bank performance in Nigeria. The study was subjected to hypothesize the hypothesis at 5percent level of significance. The concepts of the study were discussed, and secondary source of data was employed which was sourced from WEMA Bank Nigeria PLC. The data was gathered from the various audited publications of the bank financial statement. The data was analyzed with different estimation techniques ranging from unit root testing of the ADF which was used to capture the stationarity of the variables, regression analysis was employed to capture the impact of the independent variables as against the dependent variable, ARDL cointegration and vector autoregressive analysis were used to capture the long-run relationship. While pairwise granger causality was also used to examine the causal effect of the study variables.

The findings from the analysis found that return on equity and return on asset were stationary after first difference while dividend yield and dividend payout ratio were stationary at level. However, the condition that variable(s) must be stationary was firstly examined and all the variables used were stationary though in different orders. The dividend yield (DY) contributes negatively and insignificantly to influence return on asset (ROA). DPR was positive and significant to influence ROA. Additionally, a unit increase in DPR will increase ROA. The bound test reported that the null hypothesis that no long-run relationships exist failed to be rejected since the t-statistic value is lower than the critical bound values at 10%, 5%, and 1% respectively. The dividend yield contributes negatively and insignificantly to influence return on equity. DPR was positive but insignificant to influence return on equity during the study period. The ARDL bound test showed that the null hypothesis that no long-run relationships exist was rejected since the t-statistic value is more than the critical bound values at 10%, 5%, and 1% respectively. The report of the granger causality revealed that there is no causality between DY and ROE, the

hypothesis between DPR and ROE revealed that there is no causality between DPR and ROE, it was further revealed that ROE can granger cause ROA but ROA cannot granger cause ROE, meaning that there is a uni-directional relationship between ROE and ROA. More so, the relationship DPR and DY showed that there exists a bi-directional relationship between dividend payout ratio and dividend yield because the p-values are less than 5percentage level of significance that is the null hypothesis failed to be accepted. Meanwhile the relationship between ROA and DPR revealed that DPR can granger cause ROA but ROA cannot grange cause DPR that is there is a uni-directional relationship between ROA and DPR. The relationship between ROA and dividend yield revealed that the two variables cannot granger cause one another.

B. Conclusion

In line with the findings of this investigation, the following conclusions are presented.

The dividend yield (DY) contributes negatively and insignificantly to influence return on asset (ROA) while dividend payout ratio contributes positively and significantly to influence ROA. Meanwhile, no long-run relationship exists between the variables. Aside the own shock (ROA), dividend payout ratio could contribute more to ROA in the short-run while dividend yield contributes more in the long-run to ROA.

It was concluded that dividend yield contributes negatively and insignificantly to influence return on equity and dividend payout ratio was positive but insignificant to influence return on equity during the study period and there is no long-run relationship between the variables. More so, it was concluded that short-run relationship exists between ROA and dividend policy while long-run relationship exists between ROE and dividend policy. Aside the own shock (ROE), dividend payout ratio has the highest contribution in the short run and in the long run.

It was also concluded that there is no causality between dividend payout ratio and ROE and there exists a bi-directional relationship between dividend payout ratio and dividend yield. The relationship between ROA and dividend yield revealed that the two variables cannot granger cause one another. Meanwhile there is a uni-directional relationship between ROA and DPR.

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APPENDICES

Analysis

Unit Root Test

ROE @ Level

Null Hypothesis: ROE has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.050974	0.2646
Test critical values:	1% level	-3.831511	
	5% level	-3.029970	
	10% level	-2.655194	

ROE @ First Difference

Null Hypothesis: D(ROE) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.078216	0.0008
Test critical values:	1% level	-3.857386	
	5% level	-3.040391	
	10% level	-2.660551	

ROA @ Level

Null Hypothesis: ROA has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-2.253621	0.1956
Test critical values:	1% level	-3.831511	
	5% level	-3.029970	
	10% level	-2.655194	

ROA @ First Difference

Null Hypothesis: D(ROA) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.413703	0.0004
Test critical values:	1% level	-3.857386	
	5% level	-3.040391	
	10% level	-2.660551	

DY @ Level

Null Hypothesis: DY has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.440925	0.0028
Test critical values:	1% level	-3.831511	
	5% level	-3.029970	
	10% level	-2.655194	

DPR @ Level

Null Hypothesis: DPR has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=4)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.488511	0.0202
Test critical values:	1% level	-3.831511	
	5% level	-3.029970	
	10% level	-2.655194	

Regression Analysis

Dependent Variable: ROA
Method: Least Squares
Date: 12/26/20 Time: 20:33
Sample: 2000 2019
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.013481	0.003583	3.762249	0.0016
DY	-0.002420	0.003041	-0.795847	0.4371
DPR	0.015257	0.007800	1.955918	0.0571

R-squared	0.217207	Mean dependent var	0.017314
Adjusted R-squared	0.125114	S.D. dependent var	0.007865
S.E. of regression	0.007356	Akaike info criterion	-6.849058
Sum squared resid	0.000920	Schwarz criterion	-6.699698
Log likelihood	71.49058	Hannan-Quinn criter.	-6.819902
F-statistic	2.358558	Durbin-Watson stat	0.936926
Prob(F-statistic)	0.124738		

Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.572991	Prob. F(2,15)	0.0538
Obs*R-squared	6.453525	Prob. Chi-Square(2)	0.0697

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.000283	0.003491	0.081029	0.9365
DY	0.000876	0.002959	0.296081	0.7712
DPR	-0.002166	0.007462	-0.290272	0.7756
RESID(-1)	0.665057	0.248999	2.670924	0.0174
RESID(-2)	-0.313011	0.284736	-1.099303	0.2890

R-squared	0.322676	Mean dependent var	1.97E-18
Adjusted R-squared	0.142057	S.D. dependent var	0.006958
S.E. of regression	0.006445	Akaike info criterion	-7.038664
Sum squared resid	0.000623	Schwarz criterion	-6.789731
Log likelihood	75.38664	Hannan-Quinn criter.	-6.990070
F-statistic	1.786496	Durbin-Watson stat	1.732036
Prob(F-statistic)	0.184080		

Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.308617	Prob. F(2,17)	0.7385
Obs*R-squared	0.700716	Prob. Chi-Square(2)	0.7044
Scaled explained SS	0.167070	Prob. Chi-Square(2)	0.9199

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.92E-05	1.94E-05	3.053682	0.0072
DY	-4.96E-06	1.65E-05	-0.301421	0.7667
DPR	-3.15E-05	4.22E-05	-0.745961	0.4659

R-squared	0.035036	Mean dependent var	4.60E-05
Adjusted R-squared	-0.078489	S.D. dependent var	3.83E-05
S.E. of regression	3.98E-05	Akaike info criterion	-17.28716
Sum squared resid	2.69E-08	Schwarz criterion	-17.13780
Log likelihood	175.8716	Hannan-Quinn criter.	-17.25801
F-statistic	0.308617	Durbin-Watson stat	1.893761
Prob(F-statistic)	0.738491		

ARDL

Dependent Variable: ROA
Method: ARDL
Date: 12/28/20 Time: 23:38
Sample (adjusted): 2004 2019
Fixed regressors: C
Number of models evalulated: 100
Selected Model: ARDL(1, 3, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ROA(-1)	0.985768	0.244808	4.026706	0.0101
DY	-0.000823	0.002072	-0.397006	0.7077
DY(-1)	-0.001757	0.003119	-0.563411	0.5975
DY(-2)	0.000763	0.004203	0.181569	0.8631
DY(-3)	0.006945	0.003194	2.174183	0.0817
DPR	0.009389	0.009886	0.949759	0.3858
DPR(-1)	-0.020261	0.010154	-1.995288	0.1026
DPR(-2)	0.012933	0.006566	1.969510	0.1060
DPR(-3)	-0.007682	0.008301	-0.925457	0.3972
DPR(-4)	-0.017590	0.008114	-2.167958	0.0824
C	0.005117	0.003808	1.343926	0.2367

*Note: p-values and any subsequent tests do not account for model selection.

Bounds Test

ARDL Bounds Test
Date: 12/28/20 Time: 23:39
Sample: 2004 2019
Included observations: 16
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	1.709920	2

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.63	3.35
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	5

Test Equation:
Dependent Variable: D(ROA)
Method: Least Squares
Date: 12/28/20 Time: 23:39
Sample: 2004 2019
Included observations: 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(DY)	-0.000823	0.002072	-0.397006	0.7077
D(DY(-1))	-0.007708	0.006516	-1.182930	0.2900
D(DY(-2))	-0.006945	0.003194	-2.174183	0.0817
D(DPR)	0.009389	0.009886	0.949759	0.3858
D(DPR(-1))	0.012339	0.013469	0.916091	0.4016
D(DPR(-2))	0.025272	0.012505	2.020989	0.0992
D(DPR(-3))	0.017590	0.008114	2.167958	0.0824
C	0.005117	0.003808	1.343926	0.2367
DY(-1)	0.005128	0.009228	0.555761	0.6023
DPR(-1)	-0.023211	0.022030	-1.053583	0.3403
ROA(-1)	-0.014232	0.244808	-0.058135	0.9559

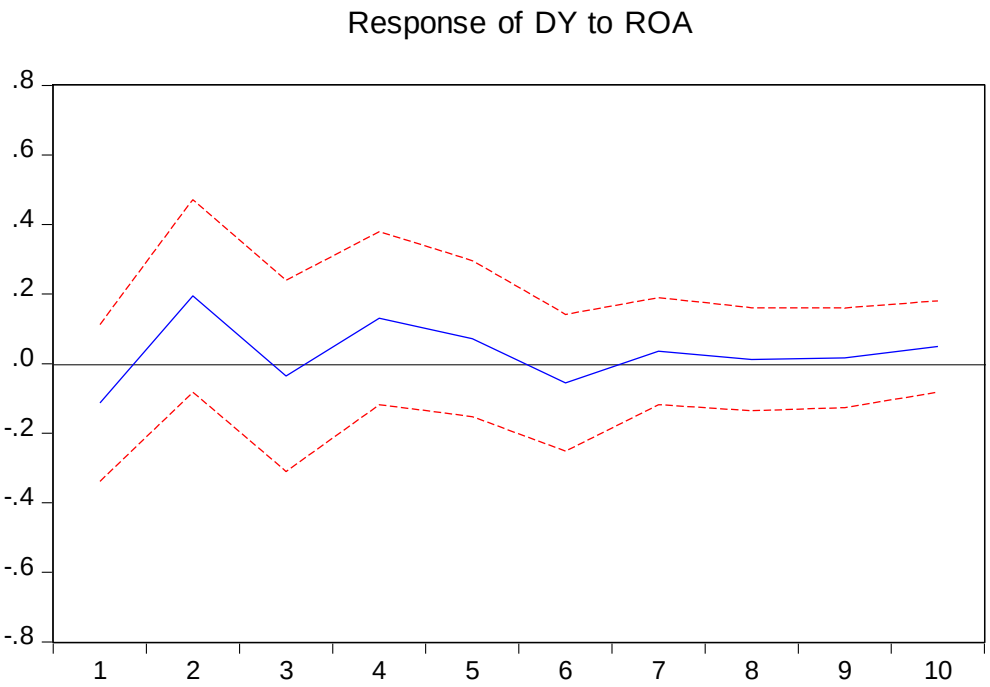
R-squared	0.940552	Mean dependent var	-0.000835
Adjusted R-squared	0.821657	S.D. dependent var	0.007353
S.E. of regression	0.003105	Akaike info criterion	-8.499591

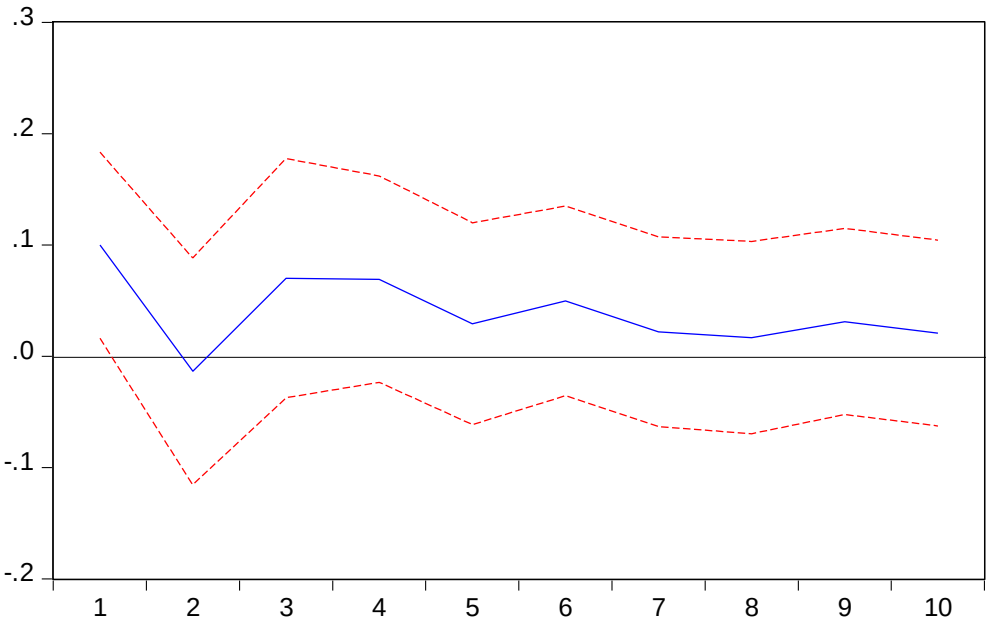
VAR Analysis

Vector Autoregression Estimates
Date: 12/28/20 Time: 23:41
Sample (adjusted): 2002 2019
Included observations: 18 after adjustments
Standard errors in ( ) & t-statistics in [ ]

	ROA	DY	DPR
ROA(-1)	0.513671	11.39996	3.879130
	(0.26965)	(22.4636)	(8.84169)
	[1.90497]	[0.50749]	[0.43873]
ROA(-2)	-0.103016	6.913160	10.35072
	(0.26655)	(22.2052)	(8.73999)
	[-0.38648]	[0.31133]	[1.18429]
DY(-1)	-0.000913	0.290489	0.164141
	(0.00341)	(0.28367)	(0.11165)
	[-0.26820]	[1.02404]	[1.47010]
DY(-2)	0.002058	-0.232872	0.247614
	(0.00299)	(0.24946)	(0.09819)
	[0.68726]	[-0.93352]	[2.52188]
DPR(-1)	-0.004896	1.613902	-0.175695
	(0.00760)	(0.63314)	(0.24920)
	[-0.64415]	[2.54905]	[-0.70503]
DPR(-2)	0.024787	-1.669430	-0.067675
	(0.00811)	(0.67584)	(0.26601)
	[3.05532]	[-2.47016]	[-0.25441]
C	0.001923	0.197617	-0.069492
	(0.00452)	(0.37691)	(0.14835)
	[0.42511]	[0.52431]	[-0.46843]

Impulse Response Function


Response of DY to ROA
.8
.6
.4
.2
.0
-.2
-.4
-.6
-.8
1
2
3
4
5
6
7
8
9
10


Response of DPR to ROA
.3
.2
.1
.0
-.1
-.2
1
2
3
4
5
6
7
8
9
10

Variance Decomposition

Variance Decomposition of ROA: Period	S.E.	ROA	DY	DPR
1	0.005822	100.0000	0.000000	0.000000
2	0.006431	98.34104	0.183573	1.475391
3	0.007857	79.22525	0.438345	20.33640
4	0.008222	73.71171	3.178460	23.10983
5	0.009188	61.35943	19.48272	19.15785
6	0.009766	60.31480	21.95000	17.73520
7	0.009966	61.04701	21.87466	17.07834
8	0.010119	61.82944	21.36209	16.80847
9	0.010232	61.80422	20.90025	17.29552
10	0.010308	61.35792	21.30209	17.33998

Variance Decomposition of DY: Period	S.E.	ROA	DY	DPR
1	0.484982	5.428825	94.57118	0.000000
2	0.588905	14.61244	66.26390	19.12367
3	0.646708	12.42166	57.28214	30.29620
4	0.661843	15.74562	55.32547	28.92891
5	0.695084	15.33921	56.88943	27.77136
6	0.698393	15.81923	56.40901	27.77176
7	0.708012	15.64736	55.80726	28.54538
8	0.708879	15.63829	55.87555	28.48616
9	0.712977	15.51254	56.04179	28.44567
10	0.715059	15.89350	55.73623	28.37027

Variance Decomposition of DPR: Period	S.E.	ROA	DY	DPR
1	0.190890	27.36472	2.756934	69.87835
2	0.210460	22.92407	17.81481	59.26112
3	0.253134	23.48391	33.81376	42.70233
4	0.263640	28.51242	31.23668	40.25090
5	0.267507	28.88015	31.19566	39.92418
6	0.274905	30.61069	29.61366	39.77565
7	0.276605	30.85559	29.25872	39.88569
8	0.280029	30.45762	30.56034	38.98204
9	0.283601	30.89275	30.61230	38.49494
10	0.284778	31.16366	30.65858	38.17776

Cholesky Ordering: ROA DY DPR

ROE = f(DY DPR)

Regression Analysis

Dependent Variable: ROE
Method: Least Squares
Date: 12/28/20 Time: 23:47
Sample: 2000 2019
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.137450	0.047553	2.890444	0.0102
DY	-0.005627	0.040353	-0.139433	0.8907
DPR	0.106454	0.103519	1.028357	0.3182

R-squared	0.061005	Mean dependent var	0.170203
Adjusted R-squared	-0.049465	S.D. dependent var	0.095295
S.E. of regression	0.097624	Akaike info criterion	-1.677908
Sum squared resid	0.162017	Schwarz criterion	-1.528548
Log likelihood	19.77908	Hannan-Quinn criter.	-1.648751
F-statistic	0.552228	Durbin-Watson stat	0.816284
Prob(F-statistic)	0.585651		

Serial Correlation

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	3.481722	Prob. F(2,15)	0.0573
Obs*R-squared	6.340940	Prob. Chi-Square(2)	0.0620

Test Equation:
Dependent Variable: RESID
Method: Least Squares
Date: 12/28/20 Time: 23:47
Sample: 2000 2019
Included observations: 20
Presample missing value lagged residuals set to zero.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.022638	0.045737	0.494974	0.6278
DY	0.007237	0.041602	0.173948	0.8642
DPR	-0.083030	0.097892	-0.848180	0.4097
RESID(-1)	0.571953	0.277226	2.063125	0.0569
RESID(-2)	0.054088	0.298475	0.181214	0.8586

R-squared	0.317047	Mean dependent var	-2.78E-18
Adjusted R-squared	0.134926	S.D. dependent var	0.092343
S.E. of regression	0.085888	Akaike info criterion	-1.859237
Sum squared resid	0.110650	Schwarz criterion	-1.610304
Log likelihood	23.59237	Hannan-Quinn criter.	-1.810643
F-statistic	1.740861	Durbin-Watson stat	1.676291
Prob(F-statistic)	0.193451		

Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	1.118275	Prob. F(2,17)	0.3497
Obs*R-squared	2.325312	Prob. Chi-Square(2)	0.3127
Scaled explained SS	1.286080	Prob. Chi-Square(2)	0.5257

Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 12/28/20 Time: 23:48
Sample: 2000 2019
Included observations: 20

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	0.003475	0.004978	0.697977	0.4946
DY	0.006231	0.004225	1.474841	0.1585
DPR	0.003869	0.010838	0.356969	0.7255

R-squared	0.116266	Mean dependent var	0.008101
Adjusted R-squared	0.012297	S.D. dependent var	0.010284
S.E. of regression	0.010220	Akaike info criterion	-6.191362
Sum squared resid	0.001776	Schwarz criterion	-6.042002
Log likelihood	64.91362	Hannan-Quinn criter.	-6.162206
F-statistic	1.118275	Durbin-Watson stat	2.345048
Prob(F-statistic)	0.349732		

ARDL

Dependent Variable: ROE
Method: ARDL
Date: 12/28/20 Time: 23:49
Sample (adjusted): 2004 2019
Selected Model: ARDL(4, 4, 4)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
ROE(-1)	0.484726	0.003052	158.8149	0.0040
ROE(-2)	0.876888	0.004441	197.4512	0.0032
ROE(-3)	0.851458	0.005251	162.1411	0.0039
ROE(-4)	-0.577796	0.004051	-142.6357	0.0045
DY	0.042128	0.000537	78.43846	0.0081
DY(-1)	0.160669	0.000944	170.2513	0.0037
DY(-2)	0.362074	0.001952	185.4980	0.0034
DY(-3)	0.335509	0.001687	198.9216	0.0032
DY(-4)	0.075801	0.000995	76.17544	0.0084
DPR	-0.755873	0.003630	-208.2024	0.0031
DPR(-1)	-0.839857	0.004965	-169.1697	0.0038
DPR(-2)	-0.182776	0.002393	-76.39075	0.0083
DPR(-3)	0.020022	0.001394	14.36695	0.0442
DPR(-4)	0.110254	0.001943	56.75543	0.0112
C	-0.144721	0.001266	-114.3466	0.0056

*Note: p-values and any subsequent tests do not account for model selection.

Bounds Test

ARDL Bounds Test
Date: 12/28/20 Time: 23:50
Sample: 2004 2019
Included observations: 16
Null Hypothesis: No long-run relationships exist

Test Statistic	Value	k
F-statistic	22.75535	2

Critical Value Bounds

Significance	I0 Bound	I1 Bound
10%	2.63	3.35
5%	3.1	3.87
2.5%	3.55	4.38
1%	4.13	5

Test Equation:
Dependent Variable: D(ROE)
Method: Least Squares
Date: 12/28/20 Time: 23:50
Sample: 2004 2019
Included observations: 16

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ROE(-1))	-1.150550	0.006746	-170.5521	0.0037
D(ROE(-2))	-0.273662	0.004637	-59.01781	0.0108
D(ROE(-3))	0.577796	0.004051	142.6357	0.0045
D(DY)	0.042128	0.000537	78.43846	0.0081
D(DY(-1))	-0.773384	0.004346	-177.9459	0.0036
D(DY(-2))	-0.411310	0.002533	-162.3634	0.0039
D(DY(-3))	-0.075801	0.000995	-76.17544	0.0084
D(DPR)	-0.755873	0.003630	-208.2024	0.0031
D(DPR(-1))	0.052500	0.002396	21.90972	0.0290
D(DPR(-2))	-0.130276	0.002062	-63.19366	0.0101
D(DPR(-3))	-0.110254	0.001943	-56.75543	0.0112
C	-0.144721	0.001266	-114.3466	0.0056
DY(-1)	0.976181	0.005473	178.3643	0.0036
DPR(-1)	-1.648231	0.009235	-178.4767	0.0036
ROE(-1)	0.635276	0.006214	102.2316	0.0062
R-squared	0.999995	Mean dependent var		-0.016927

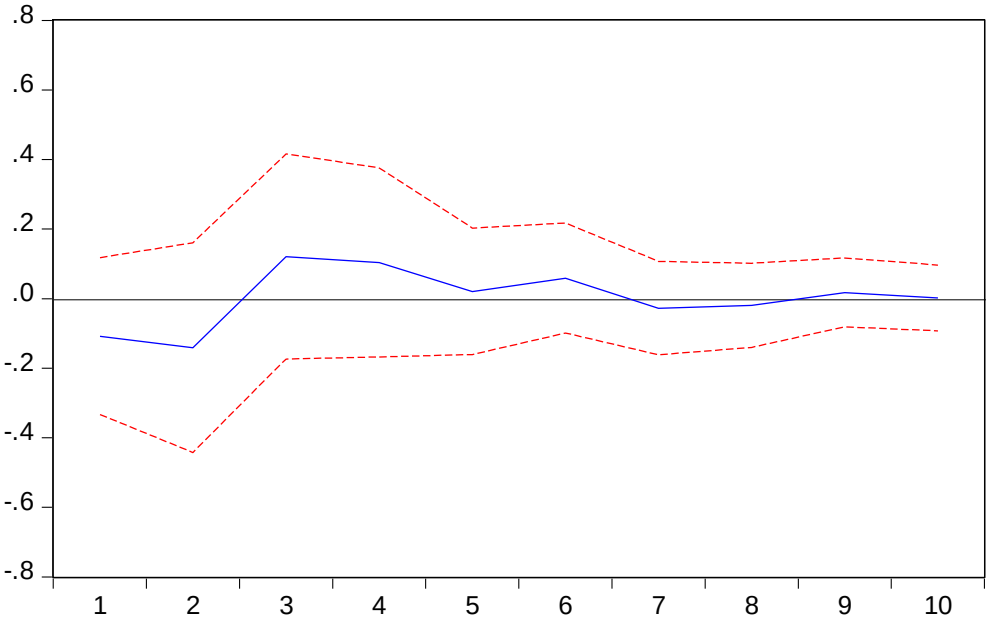
VAR

Vector Autoregression Estimates
Date: 12/28/20 Time: 23:52
Sample (adjusted): 2002 2019
Included observations: 18 after adjustments
Standard errors in ( ) & t-statistics in [ ]

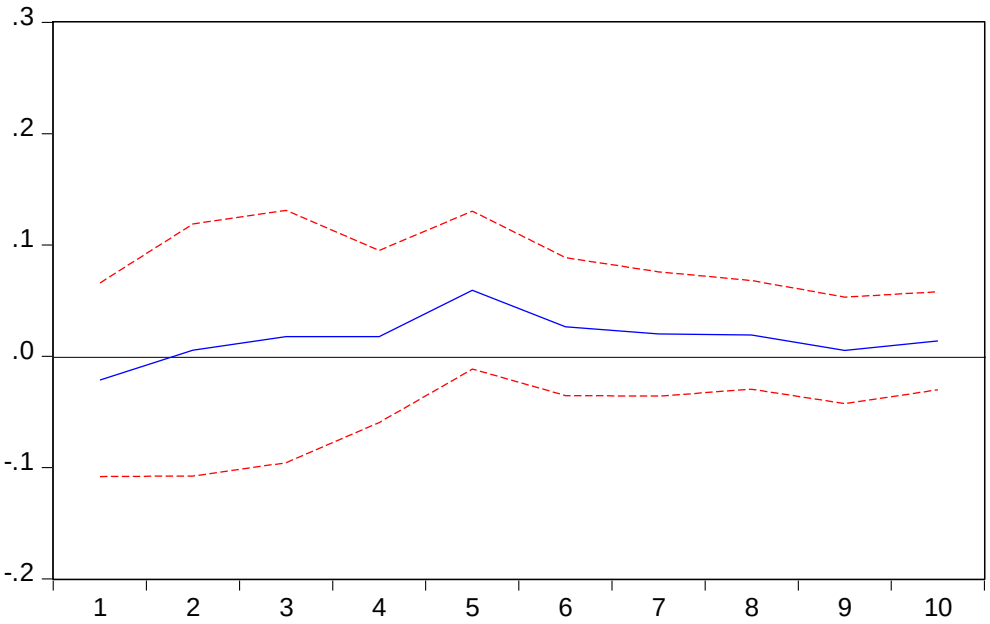
	ROE	DY	DPR
ROE(-1)	0.401483	-1.197792	0.329095
	(0.29284)	(2.00905)	(0.76779)
	[1.37099]	[-0.59620]	[0.42863]
ROE(-2)	0.108412	1.772983	0.847878
	(0.26737)	(1.83430)	(0.70101)
	[0.40548]	[0.96657]	[1.20952]
DY(-1)	-0.009886	0.204400	0.196456
	(0.03759)	(0.25789)	(0.09856)
	[-0.26299]	[0.79257]	[1.99329]
DY(-2)	0.014053	-0.188993	0.225581
	(0.03539)	(0.24281)	(0.09279)
	[0.39705]	[-0.77835]	[2.43099]
DPR(-1)	0.057575	1.610991	-0.164163
	(0.09225)	(0.63289)	(0.24187)
	[0.62411]	[2.54544]	[-0.67873]
DPR(-2)	0.170943	-1.358554	-0.070918
	(0.10624)	(0.72888)	(0.27855)
	[1.60899]	[-1.86388]	[-0.25459]
C	-0.011561	0.314995	-0.028411
	(0.04893)	(0.33570)	(0.12829)
	[-0.23626]	[0.93832]	[-0.22145]
R-squared	0.615439	0.551339	0.572162
Adj. R-squared	0.405679	0.306615	0.338796
Sum sq. resids	0.054764	2.577609	0.376459
S.E. equation	0.070559	0.484074	0.184996
F-statistic	2.934010	2.252900	2.451776
Log likelihood	26.61490	-8.049306	9.264966
Akaike AIC	-2.179433	1.672145	-0.251663
Schwarz SC	-1.833177	2.018401	0.094593
Mean dependent	0.157570	0.506032	0.329031
S.D. dependent	0.091525	0.581333	0.227507

IRF

Response of DY to ROE



Response of DPR to ROE



VDF

Variance Decomposition of ROE: Period	S.E.	ROE	DY	DPR
1	0.070559	100.0000	0.000000	0.000000
2	0.077035	97.26428	1.008312	1.727403
3	0.083993	85.22596	0.848480	13.92556
4	0.088556	77.49767	6.126163	16.37617
5	0.094480	69.12223	13.16593	17.71184
6	0.097642	66.33380	15.71655	17.94966
7	0.100268	65.91281	16.86046	17.22673
8	0.101903	66.01061	16.71165	17.27773
9	0.103005	66.01955	16.53087	17.44958
10	0.103960	65.67418	16.66947	17.65635

Variance Decomposition of DY: Period	S.E.	ROE	DY	DPR
1	0.484074	4.979588	95.02041	0.000000
2	0.578412	9.424423	66.58605	23.98952
3	0.656949	10.68600	57.41153	31.90247
4	0.665693	12.83176	56.09767	31.07057
5	0.688923	12.07066	58.30002	29.62932
6	0.695267	12.56925	57.36865	30.06210
7	0.701713	12.49365	56.32565	31.18070
8	0.702368	12.54684	56.23755	31.21561
9	0.706367	12.46649	56.60167	30.93184
10	0.707062	12.44266	56.49046	31.06689

Variance Decomposition of DPR: Period	S.E.	ROE	DY	DPR
1	0.184996	1.327463	8.310769	90.36177
2	0.213027	1.067718	28.94984	69.98245
3	0.238717	1.396958	38.26253	60.34051
4	0.241136	1.904006	37.53278	60.56321
5	0.253576	7.184015	36.53303	56.28296
6	0.257385	8.029649	35.54328	56.42708
7	0.258595	8.548402	35.27162	56.17997
8	0.260736	8.938388	35.68554	55.37607
9	0.262578	8.851886	35.35339	55.79472
10	0.263678	9.047944	35.58537	55.36669

Cholesky Ordering: ROE DY DPR

Granger Causality Test

Pairwise Granger Causality Tests
Date: 12/28/20 Time: 23:55
Sample: 2000 2019
Lags: 2

Null Hypothesis:	Obs	F-Statistic	Prob.
DY ⟶ ROE	18	0.36509	0.7010
ROE ⟶ DY		1.70360	0.2202
DPR ⟶ ROE	18	2.46197	0.1240
ROE ⟶ DPR		0.58386	0.5717
ROA ⟶ ROE	18	1.35550	0.2919
ROE ⟶ ROA		3.64267	0.0555
DPR ⟶ DY	18	6.69535	0.0100
DY ⟶ DPR		3.60590	0.0568
ROA ⟶ DY	18	0.50777	0.6133
DY ⟶ ROA		0.75018	0.4917
ROA ⟶ DPR	18	0.42355	0.6634
DPR ⟶ ROA		6.39854	0.0116

RESUME

WORK EXPERIENCE

DIRECTOR

JOLAARZ SOLUTIONS NIG LTD [23/10/2014 – 22/09/2019]

City: ABUJA

Country: Nigeria

Playing an integral role in new business pitches and hold responsibility for the effective on-boarding of new clients.

Responsible for the development and achievement of sales through the direct sales channel.

Focusing on growing and developing existing clients, together with generating new business.

Write business plans for all current and opportunity tender business. The key interface between the customer and all relevant divisions.

EDUCATION AND TRAINING

B.sc HEALTH SCIENCE

UNIVERSITY OF ILORIN [15/09/2009 – 19/07/2012]

Address: ILORIN, TANKE., 240211 ILORIN (Nigeria) WWW.UNILORIN.EDU.NG

LANGUAGE SKILLS

Mother tongue(s): English

Other language(s): Turkish

DIGITAL SKILLS

Microsoft Office / Microsoft Word / Social Media / Zoom / Skype / Google Docs / Microsoft Powerpoint / Instagram / Microsoft Excel / Facebook / Outlook / LinkedIn / Organizational and planning skills / Written and Verbal skills / Internet user / Good listener and communicator / Team- work oriented / Presenting / Power Point / Strategic Planning