

## CASH-FLOW, PROFITABILITY AND DIVIDEND PAYOUT OF BANK-FINANCIAL INSTITUTIONS IN NIGERIA (2006-2017): A PANEL ANALYSIS

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### Abstract

The study examined the effects of cash-flow and profitability on dividend payout of bank-financial institutions in Nigeria, covering the period 2006-2017. Upon the framework of the dividend relevancy theory of the dividend supremacy school, the study employed secondary data, sourced from financial statements of five fast-growing bank-financial institutions in Nigeria. Deposit to Assets Ratio (DAR) proxied cash-flow while Net Profit Margin (NPM) and Return On Assets (ROA) proxied profitability; however, Loan to Assets Ratio (LAR) and Loan to Deposit Ratio (LDR) were used as control variables. Data were estimated with cointegration test, vector error correction model, and panel regression analysis. The study found a long-run relationship between cash-flow, profitability and dividend payout of banks in Nigeria. It also obtained that the dividend payout of bank-financial institutions in Nigeria was directly (i.e. positively) affected by cash-flow (liquidity) and inversely (i.e. negatively) affected by profitability. The study therefore concluded that dividend payout is negatively related to cash flow and positively related to profitability. As such, it was recommended that, in the formulation and implementation of the payout policy of bank-financial institutions and other firms, the board of directors should adopt the dividend relevancy models of James Walter and Myron Gordon, by following a low payout policy when the firm has very profitable investment opportunities and high payout policy when these ample investment opportunities have been exhausted.

**Keywords:** Cash-flow, profitability, dividend payout, banks, dividend supremacy school

### I. INTRODUCTION

Dividend policy is one of the most complex and controversial aspects of Finance; and as a result of this, the area of corporate dividend policy has attracted attention of most Finance and Economics scholars, culminating in different theoretical modelings and empirical investigations so as to unravel the puzzle behind dividend policy. However, there are two major schools of thought on dividend policy; namely, the dividend supremacy school and the dividend irrelevancy school. The former's leading apostles are James Walter and Myron Jules Gordon while the latter's leading proponents are Franco Modigliani and Merton Miller.

The apostles of dividend relevancy (supremacy) school, Walter (1956) and Gordon (1959), postulated that, dividend policy is all what matters in determining the shareholders' wealth and value of the firm, depending on whether it is a growth firm, decline firm or normal firm (Pandey, 2015). This school of thought argued that, shareholders' wealth, or market value of a company, is determined by the size of dividend paid, growth rate of dividend paid and shareholders' rate of return, thus claiming the signaling properties of dividend, that there is information content of dividend. However, to Miller and Modigliani (1961), in the absence of market imperfections, such as taxes, asymmetric information and agency cost, dividend policy, as a means of maximising shareholders' wealth, will be irrelevant, as payment of dividend to shareholders cannot determine the shareholders' wealth or the value

of the firm. These proponents of dividend irrelevancy school argued further that, growth in the shareholders' wealth and market value of the firm will be as a result of the size of its earnings from investment and assets (Pandey, 2015).

In reality, disregarding the assumptions made by Miller and Modigliani (1961) is of great prominence, because a good number of scholars have contended that dividend policy has an impact on the company's value. One of the first studies that claimed dividend policy plays a major role in the value of the firm was that of Lintner (1956), which found that dividends are determined by a target payout level that depends on the company's long-term earnings. Lintner's findings were supported by Gordon (1959) by stating that, shareholders prefer dividends rather than capital gains. If this is true, the company's dividend payouts are of major importance both to shareholders and managers since it contributes to a higher value, and shareholders would be willing to pay a higher price for stocks that pay dividends.

In recent time, many research studies have been conducted on the impact of cash-flow and profitability on dividend payout of firms; however, the controversies on this subject are yet unresolved, and the debate is still ongoing: for, there is mixed evidence within literature on the relevancy of dividend, supporting either positive or negative (or even no) impact of cash-flow and profitability on dividend payout. In the last two decades, studies which have supported a positive link between cash-flow, profitability and dividend payout include those of Adelegan (2003), Mohammed (2007), Adediran and Alade (2013), and Rachid and Wiame (2016). On the contrary, studies which have supported no or insignificant link include those of Kozul and Mihalina (2013), and Elmi and Muturu (2016). However, studies which came up with mixed results, having positive link on one hand and negative link on the other hand include those of: Cristiano, Fernanda and Denis (2015), Ibrahim (2015), Ayukun and Etale (2016), and Tijanni and Sani (2016).

Arising from the continued controversies in literature, three gaps have been identified. First, several studies on dividend policy concentrated on either cash-flow or profitability, by combining either of these two variables with other variables, and not the two variables combined in a single model. Second, previous studies concentrated on performance of non-financial firms. Third, little research attention has been given to the dynamic relationship between cash-flow, profitability and dividend payout. Consequent upon these, this study was initiated to examine the effects of cash-flow and profitability on dividend payout of bank-financial institutions in Nigeria.

## II. LITERATURE REVIEW CONCEPTUAL CLARIFICATION

Cash-flow is the movement of cash in and out of an organization (i.e. cash inflow and cash outflow) as cash receipts and cash payments, whether existing now as a present cash-flow, or expected later as a future cash-flow. This is investible into a savings plan, an asset, a project or sinking fund either as a lump sum or an annuity; repayable for loan amortization; or receivable as an income, a reward, a return, a compensation or a yield. Cash-flows could be cash inflows, cash outflows or net cash-flows (Ayodeji, 2013). In the same vein, Olang, Abenga and Mwangi (2015) described cash-flow as liquidity, which is the ability of the firm to meet its financial obligation as at when due; and as such, managing the firm's liquidity is essential, as it eliminates default charges on firm's obligations.

Cash-flow is vital and important to the health of a business. Many businesses may

continue to trade in the short to medium term even if they are making losses. This is possible if they can, for example, delay in paying creditors and/or have enough money to pay variable costs. However, no business can survive in a long time without enough cash to meet its immediate needs (Gilchrist & Himmelberg, 1995). Similarly, Almeida, Campello and Weisbach (2004) noted that, maintaining suitable amount of liquidity within the firm is essential to the smooth operations of the firm. Managers have a propensity to hold large percentage of firm's assets in the form of cash and cash equivalents in order to reinvest on other physical assets, make payments to stockholders and to keep cash inside the firm. Thus, cash-flow represents the liquidity profile of a firm; and the whole essence of cash-flow in the management of a firm cannot be over-emphasized.

It is instructive to note that, the allotment of cash-flows into different uses by corporate managers is one of the major sources of conflict between shareholders and managers. This is particularly due to the fact that, managers may want to improve their social status by allocating more cash-flows into investments that would build large empires so that they can be seen as large-company managers, even if it means having to accept negative-net present value projects, which would in turn have a negative effect on shareholders' wealth (this is called agency conflict). Therefore, it is arguable that, the firm should define its dividend payout policy within its free cash-flow before further physical investments can be made so as to mitigate managers' excesses, and reduce the extent of agency conflict. This would amount to a direct application of the active dividend policy model, which pays out dividend to shareholders irrespective of the firm's current capital commitments or investment needs, so that investments are considered only after dividend payments have been made.

Free cash-flow, therefore, is the cash-flow generated by a firm's operations that is available to pay its financial obligations to those that have provided its funding; these include its equity shareholders and long-term creditors, and to grow and expand the business. Free cash-flow helps mitigate the agency conflict between management and shareholders. This is because management's action may not always be in the interest of the shareholders. Therefore, cash-flow was important in determining the level of cash dividend paid by the firms (Fama & Jensen, 1983). Simply put, free cash flow is the operating cash flow less annual capital expenditure. Thus, operating cash flow is the cash generated from the operations of the firm, which is obtainable by calculating Earnings Before Interest and Tax (EBIT) and adding back notional charges (i.e. provision for bad and doubtful debts, depreciation and amortization charges).

From another angle, Jensen (1986) defined free cash-flow as cash in excess of what is required for funding all positive net present value projects. To him, free cash-flow tempts managers to expand the scope of operations and the size of the firm, thus increasing managers' control and personal remuneration by investing free resources in projects that have zero or negative net present values. These unprofitable investments are an aspect of the basic conflict of interest between owners and managers. Jensen argued that some industries are particularly susceptible to the generation of free cash-flow; and thus posited that life insurers constitute a low-growth industry that is likely to generate such excessive cash-flow.

To Adelegan (2003), free cash-flow measures directly the liquidity position of companies, and liquidity serves as the determining factor, contributing to dividend payment since

management may manipulate earnings. This is important because it allows a company to pursue opportunities that enhance shareholders' value. It is therefore better to pay this cash as dividend if the firm has excess in order to avoid discretionary activities of management and to reduce the agency conflict between management and shareholders. Similarly, Mohammed (2007) described free cash-flow as cash-flow available for the capital providers, which is for reinvestment, after fulfilling all the requirements of the business; such cash-flow which is extra or free is free cash flow. This implies that, it is the cash available for resource providers (i.e. equity and debt providers). The free cash-flow hypothesis implies that dividends are paid out to stockholders in order to prevent managers from building unnecessary empires in their own narrow interests. Managers have the tendency to invest free cash-flow in size-increasing but non-profitable projects. Stockholders would prefer to see an increase in dividend that would reduce the free cash-flow available to the managers.

But, profitability is the expression of efficiency in the firm's capacity utilization in generating returns on investment. It is, simply, earning profit with respect to capacity utilization in terms of capital or assets employed; hence, capacity utilization efficiency could be achieved through either efficiency in the utilization of capital employed in generating maximum possible returns; this is return on capital employed (ROCE), or efficiency in the utilization of assets in generating maximum possible returns; this is return on assets (ROA). Return on assets could be return on total assets (ROTA) or return on net assets (RONA) (Ayodeji, 2011). Accordingly, profitability refers to the earning capacity or capability of a company to earn profit currently and in the future in relation to its capital employed or assets base.

Though profitability is nearly the same as efficiency, it is considered an index or measurement of efficiency and a guide for management for greater efficiency (Lakhtaria, 2013). It is essential to a firm because it enables the smooth running of the business in a competitive setting, influences its performance and contributes to economic development (Sohail, Iqbal, Tariq & Mumtaz, 2013). A common numerator for profitability is profit (net profit) while the denominator is either capital employed or assets base. This numerator, profit, is a key element in dividend policy, as dividends are declared out of the distributable profits of the company, that is, earnings available for equity shareholders or net income of the firm. Profit is more pronounced in Accounting, but earnings is a Finance concept while income is an Economics concept, so that distributable profit in Accounting is the same as earnings available for equity in Finance and net income in Economics.

Current and past years' profits are important factors in influencing dividend payments. Firms which continually post good profits are in a better position to pay dividends to their shareholders. On the contrary, companies that perform poorly over many years are unable to sustain dividend payments to their shareholders (Abor & Bokpin, 2010; Elmi & Muturu, 2016). However, Al-Malkawi, Rafferty and Pillai (2010) noted that risk (year-to-year variability of earnings) also determines firms' dividend payout. A firm that has relatively stable earnings is often able to predict approximately what its future earnings will be. Such a firm is therefore more likely to pay out a higher percentage of its earnings than a firm with fluctuating earnings. But, Baker and Weigand (2015) found that, a major determinant of dividend payment was the anticipated level of future earnings, apart from past and anticipated future earnings.

In the most essential respects, dividend is the return that accrues to shareholders as a result of the money invested in acquiring the stock of a given company (Eriki& Okafor, 2002). It may be defined as the sum of money paid or payable to the shareholders out of the distributable profits of the company as a return on investment of the shareholders in the company (Ayodeji, 2011). Comprehensively, Kajola, Adewunmi and Oworu (2015) noted that dividend is the reward that is attributable to the shareholders of corporate entity from their investment in the business through the provision of equity share capital. It is from the profit realized by the business at the end of the year that is either distributed as dividend or re-invested into the business as retained earnings. Whereas the shareholders would have loved greater part (if not all) of the profit made to be distributed to them as dividend, the management would prefer lower dividend to be distributed to the shareholders and larger part to be retained by the business for future investment and expansion.

Similarly, Ashamu, Abiola and Badmus (2015) defined dividend as payments made to stockholders from a firm's earnings, whether those earnings were generated in the current period or in the previous period. Dividend could also be referred to as that part of the enterprise's earnings that is given to shareholders as interest on their investment. Also, it represents the return to investors who put their money at risk in the company. Company pays dividend to reward existing shareholders and encourage others that are prospective shareholders to buy new issues of the common stock at high price.

More importantly, dividend policy is the determination of the distribution of corporate earnings between dividend payout and corporate retention. Put differently, it is the determination of the amount of corporate earnings available for equity shareholders to be distributed in the form of dividend and that which is to be retained in the business. However, dividend payout is that part of corporate earnings which is distributed as dividend to equity shareholders. Dividend payout in a financial year is the total dividend, which is the addition of interim and final dividend. When dividend payout is stated as a ratio of corporate earnings, it is referred to as payout ratio, and as such, it is obtained by deducting retention ratio (b) from the corporate earnings unity ratio (1), so that the payout ratio of a corporate entity is  $1 - b$  (Ayodeji, 2011).

### **Theoretical framework**

A plethora of dividend theories exists in literature (Stulz, 2000; Pandey, 2003; DeAngelo, DeAngelo&Stulz, 2006). The theories view dividends as either relevant or irrelevant in making financial decisions. But, the theoretical underpinning of this study is the dividend relevancy theory of the dividend supremacy school. This theory was postulated by Professor James E. Walter in 1956. It suggests that dividend policy and investment policy of a firm cannot be separated from each other; rather, they are interlinked; and as such, choice of the former affects the value of a firm. This proposition clearly states that, the relationship between the firm's internal rate of return and its cost of capital is important in determining the dividend policy that will maximize the wealth of shareholders. That is, an optimum dividend policy will have to be determined by the relationship between internal rate of return (return on investment) and required rate of return (cost of capital). The theory suggests that, a firm should retain its earnings if the return on investment exceeds the cost of capital, and in the opposite case, it should distribute its earnings to the shareholders.

### Empirical Review

Adelegan (2003) examined the relationship between cash-flow and dividend changes in Nigeria. Sourcing data from the financial statements of 63 quoted firms from 1984 to 1997, and estimating them using Ordinary Least Squares (OLS) method, the study found a significant relationship between dividend changes and cash-flows, and that, the relationship between cash-flows and dividend changes depends substantially on the level of growth, the capital structure choice, size of each firm and economic policy changes. Following this, Mohammed (2007) assessed the effects of dividend policy on performance of firms on Ghana Stock Exchange from 1997 to 2004. Obtaining secondary data from the annual reports and accounts of selected banks, and analyzing them using pooled panel cross-section regression, the study found positive relationship between return on assets, dividend policy, and growth in sales; and as such, it supported the dividend relevancy theory of the dividend supremacy school.

Similarly, Adediran and Alade (2013) evaluated dividend policy and corporate performance in Nigeria. The study employed secondary data from annual reports and accounts of twenty five randomly selected companies quoted on the Nigeria Stock Exchange for 2010 only, and analyzed them using multiple regression analysis. It found that, there is a significant positive relationship between dividend policies, corporate profitability, investments and earnings per share of organizations. Likewise, Rachid and Wiame (2016) evaluated the relationship between dividend policies and financial performance of selected listed firms in Morocco. The study sourced secondary data from annual reports and accounts of 44 sampled quoted firms from 2010 to 2014, and analyzed them using panel data regression model. It developed two models in an attempt to provide a theoretical explanation of the bird-in-hand dividend relevance theory and Modigliani and Miller's dividend irrelevance theory. It found that, dividend policy is an important factor affecting firm's performance, and that, the relationship was strong and positive; thus, supporting the dividend relevancy theory.

However, Kozul and Mihalina (2013) examined the determinants of dividend size in Croatia's listed firms. The study sourced cross-sectional data from financial statements of 52 firms listed on Zagreb Stock Exchange from 2010 to 2011, and analysed them using ordinary least squares method. The results show, on the average, significant influence of profitability and debt level on size of dividends. Influence of size of company and stability of profitability/earnings on dividend size is not statistically confirmed. The study, however, concluded that, the reason for high sensitivity of dividend size on profitability and debt level can be found in high financial constraints under which Croatian companies operate. In like manner, Elmi and Muturu (2016) assessed the effect of profitability on dividend payout by commercial banks and service firms listed on Nairobi Securities Exchange. The study sourced secondary data from audited financial statements of 10 listed commercial banks and service firms from 2005 to 2014, and analyzed them using descriptive and panel regression analysis. It found that, profitability was an insignificant factor in determining dividend payout.

Nevertheless, Cristiano et al (2015) assessed the determinants of dividend policy of companies listed on Brazilian Securities, Commodities and Future Exchange from 1995 to 2011. The study employed Generalized Method of Moments (GMM) to control for endogenous regressors, and found that, firm's size, profitability, market value, liquidity

and profit growth significantly and positively correlate with firm's propensity to distribute money to shareholders, and that leverage, liquidity squared and capital expenditure (CAPEX) significantly and negatively correlate with dividend payout, thus supporting the dividend relevancy theory. Moreover, Ayukun and Etale (2016) investigated the relationship between dividend payout policy and performance of listed firms in Nigeria. The study obtained secondary data from financial statements of a sample of listed firms on Nigeria Stock Exchange (NSE) from 2002 to 2012, and adopted comparative/descriptive research design with panel data estimation techniques. It found a positive and significant relationship between dividend payout policy and profit after tax (indicating that dividend payout policy enhances firm performance in Nigeria), and that, earnings per share has a negative influence on dividend payout policy of firms in Nigeria.

In any case, Ibrahim (2015) investigated the impact of liquidity and profitability on dividend

policy in UAE banking sector, and examined the variations between Islamic and conventional banks prior and subsequent to the financial crisis in UAE. The study analyzed the data of 18 out of the 24 UAE national banks over the period 2005-2012, whereby dividend payout ratio was analyzed in relation to six liquidity and profitability ratios using correlation and regression analysis. It found that dividend payout ratio has a significant and positive correlation with liquidity and insignificant negative correlation with profitability, and that, there is a significant variation of the variables in Islamic banks but not significant with the period. Also, Tijanni and Sani (2016) examined the impact of free cash-flow on dividend policy of oil and gas companies in Nigeria. Sourcing data from annual reports and accounts of the sampled companies from 2003 to 2014, and estimating them using correlation and multiple regression analysis, the study found that, free cash-flow and earnings per share have positive effects on dividend policy while a negative significant relationship was found between leverage and dividend policy of listed oil and gas companies in Nigeria.

### III. METHODOLOGY

The study employed secondary data, which were sourced from annual financial statements of five sampled banks in Nigeria, covering a period from 2006 to 2017. These banks are First Bank Nigeria, Zenith Bank Nigeria Plc, Access Bank Nigeria Plc, Diamond Bank Nigeria Plc, and Fidelity Bank Nigeria Plc. This selection of these banks was based on the fact that they are fast-growing banks in Nigeria. The data obtained were estimated using co-integration test, vector error correction model, and panel regression analysis.

#### Model Specification

The study employed the model from the works of Ibrahim (2015). This model is stated as:  $DPR = f(LIQ, PROF)$ . This implies that, Dividend Payout Ratio (DPR) is a function of (i.e. dependent on) Liquidity (LIQ) and profitability (PROF). However, in this study, Deposit to Assets Ratio (DAR) was used to proxy liquidity (cash-flow) while profitability was disaggregated into its component units, such that Net Profit Margin (NPM), i.e. profit after tax/sales\*100, and Return on Assets (ROA) were used to proxy profitability. However, Loan to Assets Ratio (LAR) and Loan to Deposit Ratio (LDR) were used as control variables, as they are measures of banks' exposure i.e. risk, and are a bridge between

liquidity (cash-flow) and profitability. The new functional model is thus stated below:

$$DPR=f(DAR, NPM, ROA, LAR, LDR) \dots\dots 1$$

The explicit form of the model is stated as:  $DPR_{it} = \beta_0 + \beta_1 DAR_{it} + \beta_2 NPM_{it} + \beta_3 ROA_{it} + \beta_4 LAR_{it} + \beta_5 LDR_{it} + \mu_{it} \dots\dots 2$  Where:

DPR=Dividend Payout Ratio DAR=Deposit to Assets Ratio NPM=Net Profit Margin ROA=Return on Assets LAR = Loan to Assets Ratio LDR = Loan to Deposit Ratio  $\mu$ = Stochastic Error Term  $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ = coefficients of deposit to assets ratio, net profit margin, return on assets, loan to assetsratio and loan to deposit ratio respectively.

#### IV. RESULTS AND FINDINGS

Table 1 below presents the descriptive statistics of the dependent and explanatory variables of the model of this study.

**Table 1: Summary of Descriptive Statistics**

	DPR	DAR	NPM	ROA	LAR	LDR
Mean	0.594175	0.683685	0.181071	0.021122	0.377419	0.546290
Median	0.350339	0.682213	0.192083	0.023607	0.391246	0.581732
Maximum	6.071279	1.000000	0.489251	0.038938	0.730353	0.974010
Minimum	-0.02165	0.342132	-0.19252	-0.02023	0.012976	0.021639
Std. Dev.	0.990986	0.099494	0.108801	0.010781	0.149824	0.213190
Skewness	3.955588	0.155555	-0.41075	-1.03482	-0.74262	-0.87533
Kurtosis	19.69769	6.532689	4.449326	4.957354	3.816181	3.800166
Jarque-Bera	825.0488	31.44170	6.938484	20.28658	7.180218	9.262614
Probability	0.000000	0.000000	0.031141	0.000039	0.027595	0.009742
Sum	34.46214	41.02108	10.86426	1.267312	22.64512	32.77739
Sum Sq.Dev.	55.97699	0.584042	0.698419	0.006858	1.324387	2.681537
Observations	58	60	60	60	60	60

Source: Author’s Computation, 2018

The mean value, which is the average value of the series, for deposit to assets ratio is 68.36%, which is the highest, followed by that of dividend payout ratio of 59.41%, while the least is that of return on assets which is 2%. The standard deviation, which measures the degree of dispersion from the mean value for dividend payout ratio is 99%, which is the highest (having highest volatility) while the least is that of return on assets which is 1.07%. The results also show that all the variables examined are both negatively and positively skewed; this indicates that the distribution has both long left and long right tail. The kurtosis statistics reveals that, all the variables have kurtosis value that is greater than 3.0, which indicates that the distribution is peaked i.e. leptokurtic relative to normal distribution. The Jarque-Bera statistics of the series reveals that the p-values of all the variables are below 0.05, that is, 5% level of significance, which indicates that the series is not normally distributed: for, the p-values of the series are DPR (0.000000), LAR (0.027595), DAR (0.000000), LDR (0.009742), NPM (0.031141), ROA (0.000039); but, Jarque-Bera statistics requires p-values that are greater than 0.05 (i.e. 5% level of significance) for the series to be adjudged normally distributed.

#### Co-Integration Test

This section presents a co-integration test to know if long-run relationship exists between the dependent variable and the independent variables, using Pedroni Residual Co-integration test.



**Table 2: Summary of the Co-Integration Test of Long-run Relationship**

	Statistic	P-value	Weighted	P-value		Statistic	P-value
Panel rho-Statistic	-1.179461	0.8809	-1.259525	0.8961	Group rho-Statistic	3.004179	0.9987
Panel rho-Statistic	2.405826	0.9919	2.127104	0.9833	Group PP-Statistic	2.348731	0.0094
Panel PP-Statistic	-1.82811	0.0338	-0.865144	0.1935	Group ADF-Statistic	1.200183	0.8850
Panel ADF-Statistic	-3.920565	0.0000	1.943011	0.9740			

Source: Author's Computation, 2018

The results obtained, as contained in Table 2 above, reveal that, there exists long-run relationship between dividend payout ratio, cash-flow and profitability of banks in Nigeria. This is confirmed from the three significant p-values in the table, which are less than 0.05, that is, 5% level of significance. The Panel PP-Statistic has a p-value of 0.0338, the Panel ADF-Statistic has a p-value of 0.0000, and the Group PP-Statistic has a p-value of 0.0094.

**Vector Error Correction Model (VECM)**

Table 3 below shows the summary of the vector error correction model, which explains the long-run and short-run dynamic relationship between the variables.

**Table 3: Summary of Vector Error Correction Model (VECM) Results**

	DPR	
VARIABLES	COEFFICIENT	STANDARD ERROR
ECM	-0.2309	0.1017
DAR	10.7153	2.7675
NPM	17.6492	2.481
ROA	-161.6148	21.0746
LAR	-17.9143	3.523
LDR	13.8383	2.7803
R <sup>2</sup> =75.30%	CHI-SQR=0.2065	P-VAL=0.0320

Source: Author's Computation, 2018

The results obtained, as contained in Table 3 above, reveal that, there is long-run causality running from independent variables to dependent variables i.e. from cash-flow and profitability to dividend payout ratio. This is confirmed by the negative co-efficient and p-value of the error correction results, which are - 0.2309 and 0.0320. The implication of the error correction coefficient -0.2309 is that, about 23.09% feedback is expected from the past disequilibrium in the short-run, meaning that, the speed of adjustment process is 23% per annum. On the whole, the VECM coefficients are significant and correctly signed. This is due to the fact that, the VECM co-efficient is required to be negative while the p-value is required to be less than 0.05, and the VECM co-efficient, in this study, is -0.2309 (passing the negativity test), and the p-value is 0.0320 (passing the probability test of 5% level of significance). More so, the short-run model shows a moderate R square of 0.7530 (75.30%) in Dividend Payout Ratio (DPR), which means that, about 75% variation in the dividend payout ratio is accounted for by its determinants. The results obtained also reveal that, there is no short-run relationship between the variables of interest, as the Wald test

result is insignificant: for, it is above 0.05 i.e. 5% level of significance, as shown by chi-square 0.2065.

### Panel Regression

Regression estimates of the coefficients of both fixed effect and panel OLS models for the evaluation of the effect of cash-flow and profitability on dividend payout ratio of bank-financial institutions in Nigeria is presented in Table 4 below.

**Table 4: Summary of Panel Regression Results**

Dependent Variable: DPR		
Independent Variables	Fixed Effects	Panel OLS
Constant	0.5708 (4.5971)*	0.5725(4.4123)*
DAR	0.4823 (0.2567)*	0.7070(0.3617)*
NPM	-2.4937 (-2.4616)*	-2.3524(-2.2441)
ROA	-16.0311 (-1.4961)*	-20.3100(-1.8418)*
LAR	-0.2270 (-0.0803)*	-0.6555(-0.1580)*
LDR	-0.4329 (-0.2171)*	0.0508 (0.0245)*
No. of Observations	48	48
R <sup>2</sup>	0.3785	0.2524
F-Statistics	2.572	2.8362
Prob.(F-Statistics)	0.0202	0.0202

Source: Author's Computation, 2018

The results of the fixed effect and panel regression show that, all the variables, except deposit to assets ratio (0.4823), are negatively related to dividend payout ratio (DPR). These variables are loan to assets ratio (-0.2270), loan to deposit ratio (-0.4329), net profit margin (-2.4937) and return on assets (-16.0311). The implication of all these is that, an increase in these variables would bring about a decrease (i.e. would have negative effect) on dividend payout, while an increase in deposit to assets ratio would bring about an increase (i.e. would have positive effect) on dividend payout ratio. The co-efficient of determination (R<sup>2</sup>) for both the fixed effect and panel OLS are very weak, being 0.3785 and 0.2524 respectively. These indicate that, about 37.85% and 25.24% of the variations in dividend payout ratio are explained by the variations in the explanatory variables of the studied banks (cash-flows and profitability). The F-statistics of both fixed effect and panel OLS are significant at 0.022, which indicates the goodness of fit of the model.

### DISCUSSION OF FINDINGS

This study found a long-run relationship between cash-flow, profitability and dividend payout of bank-financial institutions in Nigeria. It also obtained mixed results in examining the effects of cash-flow and profitability on the dividend payout of bank-financial institutions in Nigeria, such that, the dividend payout of bank-financial institutions in Nigeria was found to be directly (i.e. positively) affected by cash-flow (liquidity) and inversely (i.e. negatively) affected by profitability. Thus, the findings of this study are in strong support of the dividend relevancy theory of the dividend supremacy school.

Consequently, the results of this study are in conformity with those of Ibrahim (2015) and

Tijanni and Sani (2016). For, the former had found a positive relationship between liquidity and dividend payout, and a negative but insignificant relationship between profitability and dividend payout. Worthy of note is the fact that, this study adapted Ibrahim's model; hence, the emanating results are a direct confirmation of Ibrahim (2015)'s findings. Also, the latter found a positive relationship between liquidity and dividend policy and a negative relationship between leverage and dividend policy; thus, supporting the dividend relevancy theory. However, the findings of this study are at variance with those of Cristiano et al (2015) and Ayukun and Etale (2016) even though they all found mixed results. This is occasioned on the fact that, Cristiano et al (2015) found a negative relationship between liquidity and dividend payout, and a positive relationship between profitability and dividend payout. This is a reversal of the findings of this study. Also, Ayukun (2016) found a positive relationship between profit after tax and dividend per share, but this study found a negative relationship between net profit margin and dividend payout, what a negation to each other? On the whole, the findings of this study follow the arguments of the dividend supremacy school,

as it found a negative relationship between profitability and dividend payout. That is, the higher the profitability of a firm, the lower its dividend payout and vice versa. The implication of this is that, if the firm is a growth firm, having profitable investment opportunities, it should re-invest more of its earnings and payout less as dividend to its shareholders since it has an internal rate of return ( $r$ ) that is greater than the shareholders' required rate of return, i.e. cost of capital ( $k$ ), meaning  $r > k$ . But if its profitability is lower, having an internal rate of return which is less than its cost of capital ( $r < k$ ), it should pay out more of its earnings as dividend to its shareholders.

## V. CONCLUSION AND RECOMMENDATIONS

Having empirically evaluated the effects of cash-flow and profitability on dividend payout of bank-financial institutions in Nigeria, and based on the findings that emanated therefrom, the study concluded that dividend payout is positively related to cash-flow and negatively related to profitability; thus the dividend policy of a firm is relevant to its investment policy, and both liquidity and profitability are key factors to be considered in the distribution policy (i.e. payout policy) of the firm. Consequently, it was recommended that, in the formulation and implementation of the payout policy of bank-financial institutions and other firms, the board of directors should adopt the dividend relevancy models of James Walter and Myron Gordon, by following a low payout policy when the firm has very profitable investment opportunities and high payout policy when these ample investment opportunities have been exhausted. Not only that, management should make best use of the free cash flows, at their disposal, by fulfilling the firm's financial obligations to the providers of capital as at when they fall due, and committing the remainder into high returns-yielding investments so that the distributable profits of the firm can be increased with their attendant positive effects on the value of the firm.

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