Effect of Investment Portfolio Selection on Investors' Wealth Maximization

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Abstract

The aim of this study is to analyze the behavior of investment portfolio and how it affects the wealth/returns of investors in Nigeria. In order to achieve this objective, the study is reduced to two null testable hypothesis, which centers on the relationship that exists between Investment Portfolio and shareholders wealth. In particular the study has evaluated how investors' wealth could rise or fall as a result of the types of investment held in the portfolio. The researcher has made use of judgmental sampling in the selection of Individual/Corporate Investors and Institutional Investors. Investors were thus categorized into two major group; 'Diversified Investment Portfolio' and 'Undiversified Investment Portfolio'. The study made use of descriptive statistics and is based on secondary and panel data model.. The Hausman test was also formulated to assist in making a choice between the fixed effects and random effects approaches. The panel data, made the appropriate choice between the fixed effects and the random effects and investigates whether the regressors are correlated with the individual effect. Jarque-Bera test was employed and used to test for the normal distribution of the data. The analysis was also furnished by the value of the skewness and kurtosis of all the variables involved in the model. The Pearson Product Moment Correlation Co-efficient has also been used to test the relationship that exists between Investment Portfolio and Shareholders' Wealth. The major finding of the study is that, there is a strong and positive relationship between a well-diversified investment portfolio and Shareholders wealth. Another major finding of the study is that there is a weak and insignificant relationship between investment portfolio and investors' wealth for a Portfolio that is not properly diversified. It is also worthy to note that Investors also construct and hold portfolios majorly because of the returns that come to them to increase their wealth. It is therefore strongly recommended that investors pay particular attention to the type of investments they hold in a portfolio, as this could further increase/decrease their wealth.

Keywords: Investment, Portfolio Selection, Wealth Maximization

INTRODUCTION

A portfolio of any type involves the choice of the ways to invest some given amount of money to alternative assets in order to optimize some criteria. Portfolio Selection is a never ending issue which involves a continuous decision making progress to arrive at a portfolio, which maximizes returns for shareholders. They require maximum or adequate returns on their investments and be willing to continue to provide additional resources when needed. The stock market is a very fertile avenue for wealth creation and the interest in stock buying is obviously on the increase. The investors' wealth comprise of the combination of her assets and investments. The sum of current income and the present value of all future income inform the investors' wealth creation process. Many people have come to realize that investment is a good avenue for making their money work for them while they themselves sit relaxed on easy chairs, watching their money fetch more wealth for them (Benjamin, 1984). No matter how bright the prospects, an investor should bear in mind that to invest is to take a risk. Some of the hazards involve losing your capital, which might have been borrowed. It could be ones pension or entire life savings. Unfortunately, resources available for investments' are scarce, yet people look for where they can put their limited resources in order to get some reasonable returns as compensation for investments made. It is important to know that merely having the fund does not end the investment process. Investors should not only go for investments yielding high returns, or stocks making rounds on the Nigerian Stock Exchange as events now and then have shown that investment is not so simple but has a scientific approach to it. A wise investor can avoid the pitfalls by consulting an expert on professional grounds (Dikko, 1988).

The limitation of the investable funds available and the urge to have maximum return on it makes portfolio analysis; selection and management assume a significant place in investment appraisal. The

needs of the investor must be known before a stock can be recommended or selected. If an investor does not know what hios or her investment objectives are, it does not make any difference what securities he/she buys. Many investors make bad investment decisions because they have never bothered to ask what their investment goals are. To answer that question, it is assumed that the investment goal is to maximize wealth; and maximizing wealth must be considered within the context of how much financial risk one is willing to take (Williams, 2002). "Caveat emptor" – Let the buyer beware – is an appropriate motto for investors because investing in marketable securities offers exceptional opportunities for profits as well as risks. It is an established fact that the best investment decision that an investor can make depends on the risk – return trade – off. This may not result in the greatest increase of wealth. However, a substantial amount of judgment is required to determine how much risk is acceptable for each individual. Meanwhile, the expertise available for this is scarce. So many investors and financial advisers deal loosely with the concept of risk and return, therefore resulting in the use of subjective, non – analytical criteria in making decisions and advising their clients. At best these estimates are imprecise; at worst they are completely wrong. This situation has therefore necessitated this study which investigates the effect an investment portfolio "selected scientifically or non-scientifically" would have on investors wealth maximization objective.

Previous research has shown that many investors and financial advisers use subjective and non-analyticalcriteria in making decisions and advising their clients on the types of investment portfolio to keep. Regardless of how careful and informed these investors are, the future is unknown and mistakes are bound to occur when the analytical and scientific approach of portfolio analysis, selection and management are not employed. At best these estimates are imprecise; at worst they can be completely wrong. What boarders the researcher most is the nonchalant attitude investors display when selecting investment portfolios'. Little or no attention is given to the effect this will have on the maximization of their wealth. In some very rare cases where complex calculations are made in portfolio selection, the effects of such portfolios on investors' wealth maximization objective have not been given much attention to. Considering these variations, it is therefore paramount to establish a deliberate policy spelling out the effect an investment portfolio will have on investors' wealth, so that both present and prospective investors can make effective decisions during the selection process to enhance their wealth maximization objective. From the foregoing therefore, the following hypothesis are the basic ones fundamental to this study:

H_{01}: Undiversified investment portfolio has no significant impact on the wealth of Investors

H_{02}: Diversified investment portfolio has no significant impact on the wealth of Investors

LITERATURE REVIEW

The underlining theoretical basis of diversification, Capital Asset Pricing Model (CAPM), Portfolio volatility and its effect was explored by Professor Harry Markowitz in 1952. This conceptual framework was latter given the title; "Modern Portfolio Theory" (Markowitz, 1952). Before the emergence of these theories, investors knew intuitively that it was smart to diversify. Today, the field of investments is even more dynamic than it was only a decade ago. The individual has so many assets from which to choose, and the amount of information available to the investor is staggering and continually growing (Chandra, 2002). Several factors affect the construction of a Portfolio. These include the goals of the investor, the risk involved, the taxes that will be imposed on any gain and knowledge of the available opportunities and alternative investments. Investing must have a purpose for without a goal, a portfolio is like a boat without a rudder. Some objectives must guide the composition ofthe Portfolio (Wachowicz, 2002). It is impossible to know an asset effect on the portfolio as a whole without first knowing its characteristics. Stocks and bonds differ with respect to risk, potential return and valuation. The investor needs to know and to understand these differences as well as the relative merits and risk associated with each of the assets. After understanding how individual assets are valued, the investor may then construct a portfolio that will aid in the realization of his/her financial goals (Corrado, 2000).

The issue of managing the funds invested in fixed assets of an enterprise was considered by Germeier (1976) and Pavlov (2004). In this paper, management of an investment portfolio is considered. A financial institution creates an investment portfolio in order to obtain maximum profit from the funds invested in it. The organization can use its financial resources, as well as attract external investors. A financial organization takes advantage of the total income from the portfolio functioning. An external investor receives income in the form of dividends from his share in the portfolio, as well as interests from the invested funds. Thus, the formation of an investment portfolio, which participants are a financial organization (enterprise) and an external investor is considered. A portfolio of maximum efficiency on a basis of the portfolio theory of Markowitz (1952) is compiled. Availability of original capital to create a portfolio is considered. Investing encompasses very conservative positions as well as aggressive speculation. It is also important for those concerned with how to live after retirement. Investors who have established their overall financial plan and are now interested in managing and enhancing their wealth by investing in an optimal combination of financial assets, the idea of an optimal combination is important because our wealth which we hold in the form of various assets should be evaluated and managed as a unified whole. Wealth should also be evaluated and managed within the context of a portfolio, which is made up of the asset holdings of an investor. Almost every one ones a portfolio of investments. In this study, the term investment refers to financial assets, securities, fixed assets, current assets, other tangible assets and in particular marketable securities (bonds, stocks and so on).

Conceptual Framework

Concept of Investment

According to Encarta (2006), Investment involves, spending or setting or setting aside money for future financial gain. For an individual, investment might include the purchase of financial assets, such as stocks, bonds, mutual funds or life insurance. Investment can also be defined as the commitment of funds to one or more assets that will be held over some future time period (Jones, 1994). It can cover a wide range of activities. It often refers to investing money in certificates of deposits, bonds, common stocks and mutual funds. More knowledgeable investors could include other 'paper' assets such as warrants, bonds, stocks, futures contracts and convertible securities, as well as tangible assets such as gold, real estate and collectables. In the broadest sense, an investment is a sacrifice of current money or other resources for future benefits. Other avenues of investment available include depositing money in bank account, purchasing long term government bonds, or invest in the equity shares of a company or acquiring a piece of land.

Concept of Portfolio

A portfolio is a combination of Assets designed to serve as a store of value (Herbert, 2000). (Pandy, 1999) defines it as a bundle or a combination of individual assets or securities. The theory is based on the assumption that investors are risk averse. This implies that investors hold a well-diversified portfolio with an expectation of an expected return and the risk of the portfolio rather than individual assets or securities. Another assumption on the portfolio theory is that the returns of securities are normally distributed. This means that the expected value and variance (or standard deviation analysis is the foundation of the portfolio decisions.

Portfolio Return

The return of a Portfolio is equal to the weighted average of the returns of individual assets (or securities) in the portfolio with weight being equal to the portfolio of investment in each asset. For a two asset portfolio. Return on another hand can be represented by total dividend plus capital gain in the growth of share value (Lambe, 2021). It is being represented by $E(R)= \sum R_i P_i$

Portfolio Risk

Individual assets or securities are more risky than the portfolio. Risk is measured in terms of variance and standard deviation and risk is usually reduced when an investor is holding a portfolio of assets. However, the standard deviation and risk is usually reduced when an investor is holding a portfolio of assets. The standard deviation or variance of a portfolio is not simply the weighted average of variances (or standard deviations) of individual securities; rather the association of movement of returns of the securities affect it. Portfolio risk depends not only on the riskiness of the securities constituting the portfolio but also on the relationships among those securities (Horne, 2002). In a two asset portfolio, the covariance of two securities measures their co-movement. The variance of a two security portfolio is given by the given equation:

$$\delta p2 = \delta x2Wx2 + \delta y2Wy2 + 2WxWy\delta x\delta yCovxy$$

Optimal Portfolio

A Portfolio that has the lowest level of variance (risk) is referred to as optimum portfolio. It is the best combination of security X and Y in the case of a two asset portfolio that gives rise to a minimum variance portfolio. We can use the following formulae in estimating the optimal weights of securities X and Y.

$$Wx = (\delta y2 - Covxy)/\ \delta x2 + \delta y2 - 2covxy$$

Diversification and Asset Allocation

Diversification is important for managing investment risk (Horne, 2002). But, how exactly does diversification work and how can we be sure that we have an efficiently diversified portfolio? Insightful answers can be gleaned from the modern theory of diversification and asset allocation. In this section therefore, we will examine the role of diversification and asset allocation in investing. Most people have a strong sense that diversification is important. After all, "don't put all your eggs in one basket" is a bit of folk wisdom that seems to have stood the test of time quite well. Even so the importance of diversification has not always been well understood. This study, therefore explains why this is not the best piece of advice. Diversification has a profound effect on portfolio risk and return. The principle of diversification tells us that spreading an investment across many assets will eliminate some of the risk. Risks that can be eliminated by diversification can be called diversifiable risks. There is a minimum level of risk that cannot be eliminated by simple diversifying. This minimum level is labeled "non-diversifiable risk" (Horne, 2002).

Portfolio Analysis and Correlation

In Portfolio analysis, risky investment cannot be evaluated in terms of risk return alone. There is a third characteristic that is the relationship with other projects, which must be introduced into the analysis. The relationship between investments is called correlation coefficient. Correlation coefficient can either be positive, neutral or negative. It is positive when the returns on two investments move in the same direction, such as return to Umbrella producing company and raincoat producing company (Usman, 2005). It is neutral when there is no relationship between the two investments. It is negative when the return to the two investment move in opposite direction like return to Rain Coat Company and return to ice cream producing company. By selecting securities that have little relationship with each other, an investor is able to reduce relative risk. Thus, a project, which shows perfect negative correlation, would reduce the business risk, thus affecting investors' wealth either positively or negatively.

Individual/Corporate versus Institutional Investors

There are two broad categories of investors; Individual/Corporate Investors and Institutional Investors. The latter group consists of bank trust department, pension funds, mutual funds, insurance companies and professional money managers who are often publicized on the popular press. Institutional Investors are indeed the professional investors with vast resources at their command. Individuals/Corporate investors are the indirect beneficiaries of institutional investors because they indirectly own or benefit from these

institutions' portfolio on a daily basis. Other groups are trying to make intelligent trading decisions about securities.

Empirical Discussion

Harry Markowitz, was the first to develop portfolio diversification in a formal way. In his path-breaking article published in 1952, he showed that there is a scientific approach to diversification; he also explains that it is not enough to merely diversify, but that diversification has an analytical and scientific approach to it. To buttress his point further, he said that the adequacy of diversification is not thought by investors to depend solely on the number of different securities held. His conclusion is that it is generally more likely for firms within the same industry to do poorly at the same time than for firms in dissimilar industries. In another related paper titled, 'creating a result oriented investment portfolio', the researcher took a look at investments in general, and sought to build a platform necessary for creating a credible and sustained investment portfolio at the cheapest cost; yet with a potentially optimal return in order to yield a more profitable investment portfolio on the long run. According to the paper, the main goal of allocating assets among various asset classes is to maximize return for a chosen level of risk or stated in another way, to minimize risk given a certain expected level of return. From the various reviews made by the researcher, different scholars have been able to spell out the importance of an efficient investment portfolio. However, the effects of such portfolios on investors' wealth have not been given much attention to.

Theoretical Framework

Modern Portfolio Theory (MPT)

Markowitz (1952), stock selection position and his Modern Portfolio Theory (MPT) continues to be a popular investment strategy, and this portfolio management tool—if used correctly—can result in a diverse, profitable investment portfolio. The study adopts the theory of hypothesis testing of both diversified and undiversified investment portfolio to underpin its effect on wealth generated by investors. This is in line with the Harry Markowitz's Modern Portfolio Theorywhich states that there is no such thing as the perfect investment, but crafting a strategy that offers high returns and relatively low risk is priority for modern investors. While this hallmark seems rather straightforward today, this strategy actually didn't exist until the latter half of the 20th century. As the philosophical antithesis of traditional Instead of focusing on the risk of each individual asset, **Markowitz** demonstrated that a diversified portfolio is less volatile than the total sum of its individual parts. While each asset itself might be quite volatile, the volatility of the entire portfolio can be quite low.

METHODOLOGY

This study examines the effect investment portfolios have on investors' wealth. Investment portfolios were further categorised into diversified and undiversified portfolios while the significance of diversification or non-diversification was measured on wealth. Attention was paid particularly to corporate organisations quoted on the Nigerian Stock Exchange to ensure that the data collected is comprehensive and authentic. Data gathered was sourced from annual financial reports and audited statements of institutions. The Population of this study is on the different types of investors currently investing in Nigeria. However, the undiversified investment portfolio was taken from the financial sector of the economy and concentrated solely on the banks.Five Nigerian banks were studied such as the Guaranty Trust Bank, United Bank of Africa, First Bank of Nigeria, Access Bank Nigeria Plc, and Zenith Bank. On the other hand the sample size for the diversified portfolio was taken from different sectors in the economy including the financial sector. This is made up of the Guaranty Trust Bank, Dangote Cement plc, Nestle Nigeria Plc, Vita Foam Nigeria Ltd and Ooando Nigeria Plc. The financial statements of the above listed was explored using equity and earnings of financial years 2011 – 2020 to represent investment portfolios and wealth.

The study made use of descriptive statistics and is based on secondary and panel data model. This was used because the time series effect was to be established.The Hausman testwas also formulated to assist in making a choice between the fixed effectsand random effects approaches.The panel data, made the appropriate choice between the fixed effects and the randomeffects and investigates whether the regressors are correlated withthe individual effect.Jarque-Bera test was employed and used to test for the

normal distribution of the data. The analysis was also furnished by the value of the skewness and kurtosis of all the variables involved in the model.In order to determine inter-relationships among variables, correlation matrix of the variables was conducted. In testing the strength of this inter-relationship, the Product Moment Pearson Correlation Coefficient(r) was utilized.

Panel data model used is as described below:

$$Y_{it} = \beta_0 + \beta_i X_{it} + \varepsilon_{it} ------- (1)$$

Where:
Y= dependent variable
X= all the independent variables

β_0 = the constant term

β_i = slope/coefficient of the independent variable

ε= error term
$i = (1, 2, 3, 4, 5)$ – number of Banks
$t = (1, 2, 3, 4, 5….10)$ – number of years
ix $t = (5*10)$

Incorporating the variables into the panel regression model framework that would enable the testing of hypotheses, we have:

Undiversified Model

$$RET = \alpha_{0it} + \alpha_{1it} INV + \mu_{it} ----------(2)$$

Diversified Model

$$RET = \beta_{0it} + \beta_{1it} INV + \varepsilon_{it} ----------(3)$$

Where:

RET	=	Returns
INV	=	Investments
α_{0it}	=	Intercept of undiversified portfolio
α_{1it}	=	Intercept of diversified portfolio
β_{0it}	=	Intercept of undiversified portfolio
β_{1it}	=	Intercept of undiversified portfolio
μ_{it}	=	Error term (from diversified model)
ε_{it}	=	Error term (from diversified model)

RESULT AND DISCUSSION

The study adopted panel least square estimates for the analysis. The panel least squares estimation technique is a modified Ordinary Least Squares (OLS) technique with common constant, fixed and random effects as variants. The study however first examined the correlation and descriptive statistics of the series to show basic characteristics within the series. In order to have glimpse of the data used in the study, a first pass at the data in form of descriptive statistics was carried out. This gives us a good idea of the patterns in the data used for the analysis.

Correlation Analysis

In order to determine inter-relationships among variables, correlation matrix of the variables was conducted. In testing the strength of this inter-relationship, the Product Moment Pearson Correlation Coefficient(r) was utilised. The sign of the correlation coefficient indicates the direction of the association and the magnitude of the correlation coefficient indicates the strength of the association. The closer the correlation coefficient value is to one, the

stronger the correlation (0.50 to   0.99) and the closer the correlation coefficient is to zero, the weaker (0.01 to 0.49) the correlation.

Table 1: Correlation Matrix

	Undiversified Model		Diversified Model	
	RET	INV	RET	INV
RET	1		1	
INV	0.137946	1	0.912616	1

Source: Authors Computation, 2021 (Eviews-10)

The results in Table 2 indicate that a positive and weakcorrelation exists between undiversified portfolio investment and bank returns. This relationship was captured by the coefficient value of 0.137946. However, a positive and strong correlation was found to exist between diversified portfolio investment and returns. This was captured by the correlation coefficient value of 0.912616among the two variables of interest.

Descriptive Statistics Results

The summary statistics is presented in Table 2

Table 2: Descriptive Statistics Results

Undiversified Model			Diversified Model	
	RET	INV	RET	INV
Mean	89400000000'	382000000000	44600000000	174000000000
Std. Dev.	158000000000	272000000000	92400000000	285000000000
Skewness	3.937072	0.265428	1.683768	1.662895
Kurtosis	18.40882	2.677787	6.320801	4.376855
Jarque-Bera	623.8203	0.803395	44.73602	25.9132
Probability	0.000000	0.669183	0.000000	0.000002
Observations	50	50	48	48

Source: Authors Computation, 2021 (Eviews-10)

From the descriptive statistics results in Table 2, it could be observed that the mean value for returns for undiversified banks was quite higher than that of the diversifies banks as captured by their mean values of 894 billion and 446 billion respectively. More so, the mean value of undiversified investment portfolio was found to be higher than that of the diversified investment portfolios which has a mean value of 382 billion and 174 billion respectively. The analysis was also furnished by the value of the skewness and kurtosis of all the variables involved in the model. All the variableswere found to be positively skewed; and showed that they all tailed to the right-hand side of the normal distribution. Variables with value of kurtosis less than three are called platykurtic (fat or short-tailed), and only undiversified investment portfolio variable qualified for this during the study period. On the other hand, variables whose kurtosis value is greater than three are called leptokurtic (slim or long tailed) and undiversified bank returns, diversified bank returns and diversified investment portfolio variables qualified for this during the study period. Jarque-Bera test which was used to test for the normal distribution of the data showed that only undiversified portfolio investment variable is normally distributed; while the rest shows that they are not normally distributed as their probability values were found to be less than 5%. This thus revealed that on the average, the data sets are not normally distributed.

Hausman Test

The Hausman test is formulated to assist in making a choice between the fixed effectsand random effects approaches.For the panel data, the appropriate choice between the fixed effects and the randomeffects methods involves investigating whether the regressors are correlated withthe individual (unobserved in most cases) effect. The Hausman statistic may beviewed as a distance measure between the fixed effects and the random effects estimators.Thus, we actually test:

H_0: Random effects are consistent and efficient, versus;

H₁: Random effects are inconsistent (as the fixed effects will be always consistent).

The result of the Hausman Tests result are presented in Table 3 below:

Table 3:Hausman Test Results

Correlated Random Effects - Hausman Test					
Models	**Test Summary**	**Chi-Sq. Statistic**	**Chi-Sq. d.f.**	**Prob.**	**Decision**
Undiversified Model	Cross-section random	4.571731	1	0.0325	Fixed Effect
Diversified Model	Cross-section random	0.000234	1	0.9878	Random Effect

Source: Authors Computation, 2021 (Eviews-10)

Undiversified Model: From Table 3, the Hausman diagnostic test showed that the null hypothesis was rejected at 5% significant level as the probability value of 0.0325 was found to be less than 0.05. Thus, there is asignificant uncorrelated fixed effect in the model. Hence, we conclude that the fixed effect model significantly performs better than the random effect. In view of this, the study adopts the results from the fixed effect model as basis to interpret the relationship between the dependent variable and independent variables inUndiversified Model.

Diversified Model: In the result shown in Table 3, the Hausman Test revealeda Chi-square statistic of about 0.000234, with a probability value of 0.9878 which is greater than 0.05. This provides a strong argument for the alternative hypothesis that there is no misspecification when random effect model is employed and thus provides the justification for the acceptance of the random effect estimates. The implication of this result is that the random effects model will not be bias and inconsistent for Diversified Model

Statistical Test of Hypotheses
Here, the two formulated null hypotheses for the study were tested. In testing the hypotheses which partly satisfies the objective of this study, thestudy adopts 5% level of significance and conclusion was however taken based on the probability values (PV). If the PV is less than 5% or 0.05 (that is PV < 0.05), it implies that the variable in question is statistically significant at 5% level; otherwise, it is not significant at that level.

Test of Hypothesis One:

H₀₁: Undiversified investmentportfolio has no significant impact on returns banks

Table 4: Fixed Effect Model
Dependent Variable: RET
Method: Panel Least Squares
Date: 06/16/21   Time: 11:49
Sample: 2011 2020
Periods included: 10
Cross-sections included: 5
Total panel (balanced) observations: 50

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	1.62E+11	4.31E+10	3.761605	0.0005
INV	-0.190905	0.102346	-1.865287	0.0688

	Effects Specification		

Cross-section fixed (dummy variables)

R-squared	0.395605	Mean dependent var	8.94E+10
Adjusted R-squared	0.326924	S.D. dependent var	1.58E+11

S.E. of regression	1.29E+11	Akaike info criterion	54.12356
Sum squared resid	7.38E+23	Schwarz criterion	54.35300
Log likelihood	-1347.089	Hannan-Quinn criter.	54.21093
F-statistic	5.760026	Durbin-Watson stat	1.816910
Prob(F-statistic)	0.000358		

Source: Authors Computation, 2021 (Eviews-10)

Hypothesis One:
From the random effect regression result in Table 4, it was observed that the calculated t-value for undiversified investment portfolio andreturns of banks in Nigeriais -1.865287and with an associated p-value of 0.0688. Since the p-value is greater than 0.05 (0.0688 > 0.05), it thus falls in the acceptance region and hence, we accept the first null hypothesis $(H0_1)$. The conclusion here is that undiversified investment portfolio has no significant impact on returns of banks.

Summary Statistics
Using the f-statistic, the study sought to investigate the fixed effect regression model whether it was valid or not. The F statistics was used to determine the model validity. The study found out that the model was valid F = 5.760026, PV of0.000358. Therefore, this implies that the model has overall statistical significance. The study also sought to determine the model's goodness of fit statistics. The coefficient of determination as measured by the (R-square: 39.56) shows that undiversified investment portfolioexplains39.56 percent of the total variation in bank returns. This implies that the stochastic disturbance error term (ε) covers 60.44%. Durbin-Watson was used to test for the presence of serial correlation or autocorrelation among the error terms. The model also indicates that there is no autocorrelation among the variables as indicated by Durbin Watson (DW) statistic of 1.8169(as the acceptable Durbin – Watson range is between 1.50 and 2.40). This shows that the estimates are unbiased and can be relied upon for quality and sound investment and managerial decisions.

Test of Hypothesis Two:

H_{02}: Diversified investment has no significant impact on returns of banks

Table 5: Random Effect Model
Dependent Variable: RET
Method: Panel EGLS (Cross-section random effects)
Date: 06/16/21   Time: 12:11
Sample: 2011 2020
Periods included: 10
Cross-sections included: 5
Total panel (unbalanced) observations: 48
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-8.97E+09	1.56E+10	-0.573687	0.5690
INV	0.296188	0.033383	8.872501	0.0000

Effects Specification		S.D.	Rho
Cross-section random		3.10E+10	0.5209
Idiosyncratic random		2.98E+10	0.4791

Weighted Statistics			
R-squared	0.634563	Mean dependent var	1.29E+10

Adjusted R-squared	0.626619	S.D. dependent var	4.83E+10
S.E. of regression	2.95E+10	Sum squared resid	4.01E+22
F-statistic	79.87675	Durbin-Watson stat	2.173514
Prob(F-statistic)	0.000000		
	Unweighted Statistics		
R-squared	0.832408	Mean dependent var	4.46E+10
Sum squared resid	6.73E+22	Durbin-Watson stat	1.596330

Source: Authors Computation, 2021 (Eviews-10)

Hypothesis Two

Table 5 indicated that diversified investment portfoliohasa significant influence on returns of banks as captured by the t-value of 8.872501 and its associated PV of 0.0000 which was found to be greater than 0.05. Therefore, the study rejectsthe second null hypothesis (H02) and conclude that diversified investment portfolio has significant impact on returns of banks.

Summary Statistics

The F-statistic which captures the overall significance of the model showed that the random effect model is fit in prediction. This was captured by the F-statistic vale of 79.87675, with an associated p-value of: 0.0000.The coefficient of determination (R-square), which was used to measure the goodness of fit of the estimated model, indicates that the model is reasonably fit in prediction. It showed that 63.45 percent changes in returns was due to diversified investment portfolio, while 36.55percent unaccounted variation was captured by the error term. he model also indicates that there is no autocorrelation among the variables as indicated by Durbin Watson (DW) statistic of 1.5963. This shows that the estimates are unbiased and can be relied upon also for policy decisions.

CONCLUSION AND RECOMMENDATIONS

Portfolio theory is both a theory of diversification and efficiency. As a theory of diversification, it is concerned with combing a number of assets into a portfolio, to achieve some degree of income stabilization without impairing expected return. As a theory of diversification, it is concerned with combing a number of assets into a portfolio, to achieve some degree of income stabilization without impairing expected return. As a theory of efficiency, it seeks to select for an investor, a portfolio that offers the highest return for a given level of risk; or the lowest level of risk for a given return. Portfolio investment selection is therefore concerned with the achievement of efficiency in an investors' risk-return position through a careful planned policy of diversification. Findings from the study showed that undiversified investment portfolio has a negative and insignificant impact on returns of banks. The implication of this findings is that, an undiversified bankposes a serious threat to banks returns and as such diminishes returns recorded from undiversified investments.However, it was discovered from the analysis that diversified investment portfolio has a positive and significant impact on returnsof investors. The implication of this findings is that as investment are been diversified, higher significant returns are recorded by the banks involved.

From the findings outlined above, the conclusions drawn are that; there is a positive relationship between an investment portfolio and investors wealth. Therefore any increase on investment will yield a corresponding increment on investors' wealth. In addition to that, diversification into various investments improves the wealth maximisation objective of portfolio holders. Dividends/Interest/Earnings inform the purchase of securities. Investors therefore invest in such a way as to maximise returns/wealth/satisfaction from their resources. The relationship between wealth and returns is positive since investors derive greater satisfaction from a larger rather than a smaller rate of return. The Nigerian investor depends more on hunches (intuitive feelings) rather than on scientific collation, analysis and study of factual information and data for security management. Since it has been clearly stated from the research conducted above, that a well-diversified investment portfolio has a positive significant effect on investors'

wealth, investors should ensure that they get all information necessary to enable them arrive at efficient portfolios in other to obtain maximum returns.

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