



EFFECT OF FIRM CHARACTERISTICS ON STOCK RETURNS OF SELECTED QUOTED EQUITY FIRMS IN NIGERIA

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Abstract

Emerging markets have different structures and institutional characteristics from developed stock markets, and in view of the fact that investors are interested in getting more insights into the activities of blue chip companies, it is imperative to find out whether stock returns in Nigeria respond differently to effects of firm level attributes factors or not. Hence, the study examined the effects of firm size, ratio of market to book value per share, and price to earnings ratio on stock returns of selected quoted equity firms in Nigeria from 2010 – 2019. The population comprised of top twenty-five most capitalized quoted equity firms, out of which twenty-one companies represent the sample of the study. The study adopted ex-post facto research design. The study used secondary data obtained from the audited accounts of the

sampled firms, Central Bank of Nigeria Statistical Bulletin and the Nigerian Stock Exchange database and website. Analysis of data

KEYWORDS: Firm size, Ratio of market to book value per share, Price to earnings ratio, and stock return

was carried out using panel data regression. The panel regression results indicated significant positive effect between ratio of market to book value per share and stock

returns in Nigeria, and insignificant negative effect between firm size and stock returns in Nigeria. A further regression result indicated insignificant positive effect between price to earnings ratio and stock returns of selected quoted companies in Nigeria. The study recommended among others; monitoring and surveillance by the Securities and Exchange Commission, careful use of market to book value per share ratio by investors, determination of correct and comparable earnings per share by investors and investment analysts.

INTRODUCTION

Individual, institutional or investors hold one common goal when they invest in shares and hope to maximize expected return at some preferred level of risk. Researchers have tried to use different types of information to explain firm value. For example, the change in economic and financial factors have been commonly used to explain the behavior of different stock markets around the world. As suggested by signaling theory, the stock price should reflect the expectation of corporate performance. This is because investors seek to maximize their returns by purchasing stocks of firms that report high profits. In addition, the stock market has been the major driver for economic growth and plays a significant role in allocation of economic resources into the productive activities of the economy in both emerging and developed countries (Sudhahar & Raja, 2010).

Statement of the Problem

Stock returns from investments in equity are subject to vary because changes in stock prices which are a product of several factors and the impacts could either be positive or negative. These factors could be internal/firm specific or external/macro. The internal factors are firm size, ratio of market/book value, debt/equity financing, firm age, dividend per share, ratio of price-to-earnings, sales-to-price, return on assets, and earning per share. Others include premium growth, loss ratio, interest coverage, dividend yield, firm's riskiness, and profitability

Objectives of the Study

To examine the effect of firm level, attributes on stock returns of selected coated firms in Nigeria.

Hypothesis

The study is based on the following hypotheses;

- H1:** Firm size has no significant effect on stock returns of quoted equity firms in Nigeria.
- H2:** Book value per share has no significant effect on stock returns of quoted equity firms in Nigeria.
- H3:** Price to earnings ratio has no significant effect on stock returns of quoted equity firms in Nigeria.

Literature Review

Conceptual Framework

Stock Returns

In simple terms a stock refers to a share in the ownership of a company. Stock represents a claim on the company's assets and earnings. The percentage stake that an investor holds is reflected in the number of stocks the investor acquires from the company's stocks. Thus the more shares that one acquires, the greater his/her ownership rights in the company. When one holds a company's stock, it means that person is one of the many owners (shareholders) of the company and as such has a claim (albeit usually very small) to everything the company owns. An investor's share ownership is represented by a stock certificate. That is a piece of paper which serves as a proof to one's ownership. According to Beni and Alexander (1999), an ordinary stock simply represents an ownership interest in a corporation. In this modern age of business however, such certificates are rarely given the shareholder because the brokerage firms keep these records electronically otherwise known as holding shares "in street name". This is done in an attempt to make the stock easily tradable. Unlike in the past where one has to physically take a share certificate to the brokerage in order to sell, now with just a click on the mouse or even a

phone call; stocks can easily be traded.

Return refers to the financial rewards gained as a result of making an investment. The nature of the return depends on the form of the investment. For instance, a company that invests in fixed assets and business operations expects returns in the form of profit, which may be measured on before –interest, before tax or after tax basis, and in the form of increased cash flows. An investor who buys ordinary shares expects returns in the form of dividend payment and capital gains (share price increases). Again, an investor who buys corporate bonds expects regular returns in the form of interest payments (Frimpong, 2010).

Stock Market Returns are the returns that the investors generate out of the stock market. This return could be in the form of profit through trading or in the form of dividends given by the company to its shareholders from time-to-time. Stock Market Returns can be made through dividends announced by the companies. Generally, at the end of every quarter, a company making profit offers a part of the kitty to the shareholders. This is one of the source of stock market return one investor could expect. The most common form of generating stock market return is through trading in the secondary market. In the secondary market an investor could earn stock market return by buying a stock at lower price and selling at a higher price. Stock Market Returns are not fixed ensured returns and are subject to market risks. They may be positive or negative. Stock Market Returns are not homogeneous and may change from investor-to-investor depending on the amount of risk one is prepared to take and the quality of his Stock Market Analysis. In opposition to the fixed returns generated by the bonds, the stock market returns are variable in nature. The idea behind stock return is to buy cheap and sell dear. But risk is part and parcel of this market and an investor can also see negative returns in case of wrong speculations.

Firm Size

Firm size is one of the first empirically documented firm characteristics associated with realized stock returns (Banz 1981; Reinganum 1981; Keim 1983). Fama and French (1992) consider the size effect the most prominent.

Investors can see the level of company's stock return through the size of the company, because the larger the size of the company, the greater the rate of stock return to investors. Large company indicates that the company has a lot of assets that can be used to provide return to investors. This is consistent with the studies conducted by Ernayani and Robiyanto (2016) and Sudarsono and Sudiyatno (2016) that firm size has an effect on stock return contradiction to the Capital Assets Pricing Model (CAPM). Furthermore, Small companies are basically, riskier than big companies. For example, some types of risk associated with small businesses can be thought of difficulty to approach financing sources, lower market share or less reputable brand names. According to CAPM, small companies will get higher returns. Investments in these companies can be considered to be at the highest level of risks and are deserved to earn higher returns. However, there is an assumption which need to be made in this study. The risk levels of firms also depend on the risks of the industry as well as the projects that the companies are undertaking. Hence, big companies can also bear higher risk if they are in a risky industry. The assumption is that this study will neglect factors which make big companies to be riskier than smaller companies. With the assumption, CAPM can successfully support the hypothesis of small firms can bring higher profits where high risks investments should be compensated with higher returns. Ojochemi and Bawa (2020) assert that the liquidity requirements of Nigerian companies is necessitated by cash. Nigerian companies create account receivable by granting trade credit due to the economic situation and its effects on income of buyers in Nigeria.

Book Value per share

Book value of equity per share (BVPS) is the equity available to common shareholders divided by the number of outstanding shares. This represents the minimum value of a company's equity. Since preferred stockholders have a higher claim on assets and earnings than common shareholders, preferred stock is subtracted from shareholders' equity to derive the equity available to common shareholders. Shareholders' equity is the owners'

residual claim in the company after debts have been paid. It is equal to a firm's total assets minus its total liabilities, which is the net asset value or book value of the company as a whole. The book value of equity per share (BVPS) metric can be used by investors to gauge whether a stock price is undervalued, by comparing it to the firm's market value per share. If a company's BVPS is higher than its market value per share, its current stock price, then the stock is considered undervalued. If the firm's BVPS increases, the stock should be perceived as more valuable, and the stock price should increase.

In theory, BVPS is the sum that shareholders would receive in the event that the firm was liquidated, all of the tangible assets were sold and all of the liabilities were paid. However, as the assets would be sold at market prices, and book value uses the historical costs of assets, market value is considered a better floor price than book value for a company. If a company's share price falls below its BVPS a corporate raider could make a risk-free profit by buying the company and liquidating it. If book value is negative, where a company's liabilities exceed its assets, this is known as a balance sheet insolvency.

Book value of a firm represents an important feature that offers useful information on firm value at any point in time. The company book values occupy a prominent role towards valuation process (Ohlson, 2001). The research carryout by Penman (1996) stated that, Price book value multiple is intensely related with prediction of future company equity value. In addition, the study of Aras and Yilmaz (2008), discloses that, market-book multiple has important part towards share returns prediction of 12 countries 1997-2003 cross sectional information analysis.

Price Earnings Ratio

PE Ratio is widely used and recognized by securities analysts and investors for common stocks valuation. Basically, PE Ratio can be calculated by dividing stock price per share with its earnings per share. However, there are two main variations of PE Ratio, based on the way it is calculated, which are trailing (current) PE and leading (forward) PE. The usage of most recent

four quarter or past 12 months EPS in the denominator resulting in trailing PE while the usage of next year expected EPS in the denominator resulting in leading PE. Price to Earnings (PE) Ratio has been extensively used by financial (securities) analysts and investors as an investment tool to pick which stocks to be bought. PE Ratio gains popularity among securities analysts and investors since it is easy to calculate and understand. Thus far, many securities analysts, particularly in Indonesia, recommend investors to buy certain stocks if their PE Ratio is low compared to their counterparts. Stock with low PE ratio is perceived as having cheaper current price hence expected to generate higher return in subsequent period. Some researches support this PE Ratio hypothesis. Using NYSE common stocks as sample of analysis, Basu (1977, 1983) confirmed by Jaffe et al. (1989) found that stocks with high (low) PE ratios generate lower (higher) returns. Tseng (1988) conclude that low PE ratio portfolios are found to have higher risk adjusted return than high PE ratio portfolios. Trevino & Robertson (2002), using US stock market data, found that current PE ratios are useful in estimating long-term average stock returns but not for short-term average stock returns. Bawa, Abdullahi and Yohanna (2020) noted that it is the financial intermediaries that pursue credit demanding customers and loans are granted on the basis of the parameters of profitability, liquidity and risk of applications and not just their social or development venture.

Empirical Review

Uwubanmwun and Obayagbona (2012) investigated the influence of firm attributes and equity returns in the stock market of Nigeria. The study uses eight sample firms with 11 years' observation. The proxies employ firm's unique attributes to include: leverage, book/market value of equity, ratio of price/earnings and firm size. The study establishes that the size of firm and returns of common stocks have no statistical significant relationship or effect. The study uses total asset natural log which is the traditional measure of firm size. This is as against previous studies use of firm size or market capitalization as the best and appropriate representative for examining the effect of size of firm on returns of common stocks.

Bala and Idris (2015) examined firms' specific characteristics of firm size, debt-equity, and earnings per share and stock market returns in Nigeria. The study samples nine (9) out of the twenty-one (21) quoted food and beverages firms in Nigeria from 2007 to 2013 by means of multiple regression models. The findings show that firm size has a significant and negative effect in stock returns of quoted food and beverages firms in Nigeria. The effect of earnings per share and debt-to-equity is found to be statistically significant and positive. The study did not factor in dividend in the measurement of the dependent variable (stock market returns). Stock return is the combination of dividend yield and capital appreciation. Also, the results of nine (9) out of over 170 sampled quoted firms cannot be the representative of the entire market. More firms would have explained the effect better. The study should have also included other internal non-financial variables that have been examined and found to explain stock returns in other jurisdictions.

Kazeem (2015) examined firm specific attributes and financial performance of quoted insurance firms in Nigeria. The company fundamentals the study investigates are firm age, firm size, premium growth, loss ratio, liquidity and leverage from 2006 – 2013. The study employs multiple regression models for data analysis. The results of the study show that firm size was negatively related with finance performance of insurance companies in Nigeria. This study used natural log of total assets as a substitute for firm size as against previous studies use of market value of equity as appropriate representative for examining the effect of size of firm on returns of common stocks. The study should have also included other internal non-financial variables that have been examined and found to explain stock returns in other jurisdictions.

Zaremba and Konieczka (2014) analyzed the relations between select company features and stock returns on the Polish market for a study period of 2000 to 2012. The study uses the Ordinary Least Square (OLS) and obtains data from Bloomberg. The empirical results indicate a significant positive association between book to market ratio and stock market returns. The use of Ordinary Least Square Regression (OLS) does not seem to explain the

individual or cross sectional effect of the sampled firms given their respective peculiarities. Panel data stand to tackle a more set of problems and address more sophisticated issues than either pure time series or pure cross sectional data alone would address. Thus the use of panel regression is capable of given more robust result that can be acceptable than OLS.

Hasan, Alam and Rahaman (2015) analyzed the effects of size and value on cross-section of expected returns in Dhaka Stock Exchange (DSE). The study deploys the Fama and French (1993) three-factor methodology in conjunction with Ordinary Least Square (OLS) model. The study period is divided into three periods; the pre-boom (2004 – 2008), boom period (2009 – 2010) and post-crash period (2011 –2013). The result of the study reveals that book to market equity ratio and stock returns have positive effect in Bangladesh. The use of Ordinary Least Square Regression (OLS) does not seem to explain the individual or cross sectional effect of the sampled firms given their respective peculiarities. Panel data stand to tackle a more set of problems and address more sophisticated issues than either pure time series or pure cross sectional data alone would address. Thus the use of panel regression is capable of given more robust result that can be acceptable than OLS.

Ltaifa and Khoufi (2016) investigated empirically the determinants of stock market returns of Banks in the MENA countries between 2004 and 2014. The study uses the three-factor model of Fama and French (1993) and the capital asset pricing model (CAPM) to analyze the relationship. The findings reveal that firm size, book to market value, and stock returns have positive relationship. That is, companies with high book to market value ratio earn superior returns. The study of Ltaifa and Khoufi (2016) suffers from some limitations. One, the study did not clearly state the technique for data analysis. Two, the study should have included more internal variables with a view to determining their behavior on stock returns. Investors would want to know this as it will help in their investment.

Arslan and Zaman (2014) examined the impacts of price to earnings ratio and dividend yield on stock returns in Pakistan. The study uses advance econometrics techniques in determining the impacts between the variables

using a period from 1998 to 2009. The impact of the variable of stock returns was determined using the fixed effect model. The findings indicate that stock returns and price to earnings ratio have significant positive impact. However, the study was limited to Pakistan and the use of more variables (internal and external) and the use of panel seems to be absence in the study. Also, the study was carried out in year 2009, therefore, the need to update it and in Nigeria.

Kumar (2017) investigated the influence of earning per share and price to earnings ratio on market price of share in India. Multiple regression analysis is used to examine the impact between the variables using a study period of 2011 to 2016 with sample of eight (8) auto based companies. The findings show that price to earnings ratio has significant effect on stock price prediction of select companies in India. However, the study did not carry out pre and post diagnostic tests to validate and confirm assumptions of classical linear regression model. The result of significance effect between the variables may be spurious. There is therefore, a need to add more independent variables and use panel regression analysis with a view to getting more robust results.

Theoretical Framework

Arbitrage Pricing Theory (APT) developed by Ross (1976) as a Capital Asset Pricing Model (CAPM), is premised on the basis that the stock returns are caused by a specific number of economic variables. The theory further suggests that there are different risks in the economy that cannot be eradicated by sole diversification. CAPM was introduced by Sharpe (1964), Lintner (1965) and Mossin (1966). The theory states that non-diversifiable market risk impacts expected security returns. According to Al-Shami and Ibrahim (2013), the general notion behind the APT is that compensation is provided for the investors due to the time value of money or systematic risk which is characterized by the risk-free rate. Another compensation for taking up extra risk can be calculated through a risk measure (Beta) by comparing the asset returns with the market for a time period and with the market risk premium.

According to Gatuhi, Gekara and Muturi (2015), APT assumes that various market and industry related factors contribute towards returns on stocks. These multi factor models have been developed with the assumption that stock returns are based upon several economic factors which include market return as well as other factors, and can be grouped into industry wide and macroeconomic forces. The industry related variables can vary with the nature of industry and economic conditions. The exact number of industry related variables is not identified so far. The frequently used macroeconomic and industry variables in existing literature are interest rate, exchange rate, money supply, consumer price index, risk free rate, industrial production, balance of trade, dividend announcements, and unexpected events in national and international markets. Amtiran, Indiastuti, Nidar and Masyita (2017) concluded that model APT one factor is valid more than multi-factor APT. Other studies that found APT useful in relating changes in returns on investments to unanticipated changes in a range of key value drivers for these investments include Acikalin, Aktas and Unal (2008), Ali (2013), Ibrahim and Musah (2014), and Kirui, Wawire and Onono (2014).

Methodology

In undertaking this study, ex-post facto research design was adopted. The justification is that the research involves panel data on multiple phenomena of 25 companies observed over multiple periods of ten (2010 - 2019) years, which events have already taken place. The population of the study is the top twenty-five (25) most capitalized equity firms that have been listed on the premium and main boards of the Nigerian Stock Exchange. This constitutes about ninety (90) percent of the total market capitalization as at December 31, 2019. The justification for using Nigeria is that Nigerian capital market has been a rewarding destination for both foreign and domestic investors and it is thriving very quickly in recent years. For example, the according to Nigerian Stock Exchange (2018), domestic composition of transactions on the Nigerian Stock Exchange (NSE) between January and December 2018 increased by 27.32% while the institutional

composition of the domestic market increased by 63.16% from N21.85b in January to N35.65b in December. Also, in 2016, the NSE was ranked by the International Finance Corporation (IFC) as the best performing emerging market in the world [Securities and Exchange Commission, (SEC), Nigeria]. All these evidences emphasize on the importance of the Nigerian capital market, and hence it is a very gainful opportunity for investors. While selecting sample of companies from the top twenty-five (25) most capitalized quoted equity firms, a company had been regarded eligible for inclusion in sample if it satisfied the following conditions:

- i. The earnings per share for any four successive years was not zero or negative during the period 2010 to 2019;
- ii. The company did not erode its shareholders' fund for more than three successive years from 2010 to 2019;
- iii. Furthermore, only company whose price data was available for the years (2010 to 2019) was retained in the sample size;
- iv. The company must have been in existence from 2010 to 2019;
- v. The currency in which the financial statements were prepared was the local (Naira) currency.

The study adopts the purposive sampling technique. The period of sample is ten (10) years; from 2010 – 2019. This sample period of 10 years in my opinion, is sufficient to draw reliable and verifiable conclusions and/or findings. The study is based on secondary data. The main data source is the Nigerian Stock Exchange (NSE) database and website, the 2016 edition of the Central Bank of Nigeria (CBN) Statistical Bulletin and the annual published accounts of the affected companies.

In achieving the objective of the study, panel regression analysis was used. The Jarque-Bera statistic was used to describe the normality of the residuals. Correlation matrix was used to describe the degree of relationship linking the regressors (microeconomic factors) with the dependent parameters/variable (stock returns). Post-residual diagnostic (multicollinearity and heteroscedasticity) tests to check for validity of model assumptions were carried out.

The econometric model to measure the effects of macroeconomic factors on stock returns of twenty-one (21) most capitalized quoted equity firms in Nigeria are stated below in line with the study objective:

$$SR_{it} = \beta_0 + \beta_1 FZ_{it} + \beta_2 PE_{it} + \beta_3 MBV_{it} + \mu_{it}$$

Where:

SR_{it}: Stock Return represents the yearly All-Share Index (ASI) of the NSE;

FZ_{it}: represents natural logarithm market capitalization of twenty-one most capitalized quoted equity firms in time t;

PE_{it}: represents ratio of price/earnings of twenty-one most capitalized quoted equity firms in time t;

MBV_{it}: represents ratio of market/book value per share of twenty-one most capitalized quoted equity firms in time t;

β₀: represents the constant;

β₁- β₃: represents the coefficient of the regressors;

μ_{it}: represents the error term;

i: represents the cross-sectional dimension;

t: represents the time series effect.

Variables Measurements Expected Sign Reference

Stock Return: measured by NSE Index. Tripathi & Seth (2014), Ntshangase, Mingiri & Palesa (2016), Khalid & Khan (2017).

Firm Size: measured by Natural logarithm of number of outstanding common shares of the corporation at year end multiplied by price of each stock at same financial yearend. Gallizo & Salvador (2006), Tripathi, (2009), Bala & Idris (2015).

Market Book Value: measured by Ratio of Market-to-Book Value per share. Uwubanmwun & Obayagbona (2012), Zaremba & Konieczka (2014), Ltaifa & Khoufi (2016).

Price Earnings Ratio: measured by Ratio of Price-to-Earnings per share. Osano (2010), Mburu (2014), Ali (2017).

Data Analysis and Discussions of findings

Descriptive Statistics

Table 1.

	FZ	MBV	PE	SR
Mean	25.772	5.4561	21.309	31495.34
Median	25.703	3.0495	15.064	28058.82
Maximum	28.948	33.841	246.31	58669.43
Minimum	22.844	0.2249	-62.04	20664.03
STD. DEV	1.1189	6.0858	27.274	10821.25

Source: Researcher's Computations (2018)

Table1 displays the summary of descriptive statistics of the variables included in the model. The variables are stock returns as proxied by NSE ASI, firm size, ratio of market value to book value per share, price to earnings ratio. The above table reveals that NSE ASI has a mean of 31,495.34 over the study period, with a maximum and minimum values of 58,669.43 and 20,664.03 respectively. This connotes that averagely, the market gained up to 28,058.82 between 2010 and 2019. The minimum value indicates that the market did not perform fairly during the period.

The Jarque-Bera test indicated a value of 79.27237 and a corresponding probability value of 0.0000. This means that the residuals are all not normally distributed variables since the probability value is less than 5%. All the variables under study are related to stock price and absence of normality in the residuals may be due to volatilities in the stock prices over the study period.

Correlation Matrix

Table 2: Result of Correlation Matrix

Variables	SR	PE	MBV	FZ
SR	1.000000			
PE	0.118052	1.000000		
MBV	0.206454	0.351848	1.000000	

FZ	0.098860	0.100382	0.216140	1.00000	
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Source: Authors Computation (2020).

The correlation result indicates that firm size, ratio of market/book value per share and price to earnings ratio are positively correlated to stock return. This implies that NSE ASI increases as firm size, ratio of market/book value per share and price to earnings ratio increase. The strongest positive relationship (21%) is between market/book value per share and stock return. Whilst among the independent variables, the strongest relationship (35%) is between ratios of market to book value per share and price to earnings.

Hausman Specification Test

Correlated Random Effects - Hausman Test

Test cross-section random effects

Table 2: result of Hausman Test

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	13.573127	3	0.0035

Cross-section random effects test comparisons:

Variable	Fixed	random	Var (diff)	Prob.
FZ	-416.439572	537.825767	1105764.239927	0.3642
MBV	985.954934	314.266919	41245.478492	0.0009
PE	8.245643	19.950379	294.454295	0.4952

Source: Authors' computation (2020).

The Hausman Specification Test in Table 3 above reveals that Fixed Effect Model is most appropriate to Random Effect Model in view of the Chi-Square value of 13.573127 and its corresponding probability value of 0.0035 which is less than the critical value of 0.05000. The summary of the Fixed Effect panel regression result can be shown on the table below:

Panel Regression (Fixed Effect Model)

Table 4: Fixed Regression Result

<i>Variable</i>	Fixed	Effect	
	Panel Regression		
	Coefficients	T-Values	P-Values
Constant	36672.69	1.158190	0.2483
<i>LNMCAP</i>	-416.4396	-0.331951	0.7403
<i>MVB</i>	985.9549	4.054516	0.0001
<i>PE</i>	8.245643	0.242925	0.8083
R²	0.112674	-	-
Adj. R²	0.092951	-	-
F-Stat	1.026898	-	0.005260

Source: Researcher’s Computations (2020)

Table 4. above shows the Fixed Effect regression model after the Hausman result in Table 4.4. Therefore, the regression line of $SR = 36672.69 - 416.44 FZ + 985.95M_VB + 8.25PE$ indicates that stock returns of selected quoted companies in Nigeria decreases with increase in firm size (FZ), but increases as ratios of market to book value per share (MVB) and price to earnings (PE) increases. The probability values of 0.7403, 0.0001 and 0.8083 for FZ, MBV and PE respectively indicate insignificant effects of internal factors on stock returns of selected quoted companies in Nigeria at 5% level of significance except in the case of MBV. The coefficient of determination of 0.1127 indicates that about 11.27% of variation in stock returns of selected quoted companies in Nigeria is explained by internal financial factors (FZ, MBV and PE). The remaining 88.73% is explained by error term and other variables not captured in the model. These variables could be external or internal that also have the capacity to explain change in stock returns in Nigeria. The result of the regression indicates that the model is fit with F-statistic of 1.026898 and a probability value of 0.005260. The result implies that the overall effect of the independent variables (Size, M/BV, and P/E) on stock return in Nigeria is statistically significant at 5% level.

The diagnostic checks are hinged on the null hypotheses that: there is no heteroscedasticity for the

Breusch-Pagan-Godfrey heteroscedasticity test and there is no multicollinearity between the variables for the Variance Inflation Factors test.

Table 5. Summary of Post Diagnostic Tests

	Statistics	P-Values
<i>Breusch-Pagan-Godfrey Test</i>	6.299379	0.0979
<i>Mean Variance Inflation Factors</i>	2.00576	-

Source: Researcher’s Computations (2020)

The test from table 4.6 implies that the problem of heteroscedasticity is absent, with the chi-square value of 6.299379 and the p-value of 0.0979. Thus the p-value of 9.79% is greater than 5% level of significance, gives the study proof to accept the null hypothesis that the residuals are homokedastic and the model is good. Also, multicollinearity test using the Variance Inflation Factors (VIF) reveal a mean VIF of 2.00576 with the VIFs for FZ, MBV and PE as 2.089990, 2.084750 and 1.842527 respectively. This implies that the mean VIF is less than 10. Thus, the study accepts the null hypothesis that there is no problem of multicollinearity and suggests that the mode is appropriate in fitting the explanatory variables of the study. The general rule of thumb is that, multicollinearity exists only when the VIF is greater than 10.

The cumulative result shows that the R² has a value of 12%. The coefficient of determination indicates that about 12% of variation in stock returns of selected quoted companies in Nigeria is explained by FZ, MBV, and PE. The remaining 88% is explained by error term and other variables not captured in the model. These variables could be other external or internal that also have the capacity to explain change in stock returns in Nigeria. The result of the regression indicates that the model is fit with F-statistic of 1.026898 and a probability value of 0.005260. The result implies that the overall effect of the independent variables on stock return in Nigeria is statistically

significant at 5%. Empirical evidence from the above results indicate insignificant negative effect of firm size as proxied by natural logarithm of market capitalization on stock returns of twenty-one most capitalized quoted equity firms in Nigeria.

The implication of this is that, stock returns of quoted firm in Nigeria decreases significantly, as market capitalization increase. The result is in agreement with theoretical prediction and empirical findings of Tahir, Sabir, Alam and Ismail (2013); and Wakil (2015). However, the finding of the study contradicts those of Uwubanmwen and Obayagbona (2012); Bala and Idris (2015); and Kazeem (2015). The finding does not support the study's a priori expectation and agrees with the Arbitrage Pricing Model (APT) which assumes that there are various market and industry related factors that contribute towards returns on stocks.

In addition, the study finds that the ratio of market to book value per share has significant positive influence on stock returns of twenty-one most capitalized quoted equity firms in Nigeria. This implies that since MBV is a firm specific indicator; it may be misleading to solely rely on it for any strategic investment decisions. A low ratio of market to book value per share indicates a firm with value stock, which depicts that investors in Nigeria prefer companies whose stock prices trade lower relative to their fundamentals, thus investors consider them undervalued. The result is in agreement with theoretical prediction and empirical findings of Khan (2009); and Shafana, Rimziya and Jariya (2013). However, the finding of the study contradicts those of Zaremba and Konieczka (2014) and Hasan, Alam and Rahaman (2015). The finding does not support the study's a priori expectation and but agrees with the Arbitrage Pricing Model (APT) which assumes that there are various market and industry related factors that contribute towards returns on stocks.

Furthermore, the regression result indicates that the ratio of price to earnings has an insignificant positive effect on stock returns of twenty-one most capitalized quoted equity firms in Nigeria. This implies that increase in the price to earnings ratio, increases stock returns of quoted firms in Nigeria. A further implication of this result is that, the ratio projects earnings

capacity of firms in Nigeria and investors may focus on those companies because they have above average growth potentials. These growth potentials have implication for firm value and shareholders' wealth. The result is in agreement with theoretical prediction and empirical findings of Mburu (2014); and Ali (2017). However, the finding of the study contradicts those of Leim and Sautma (2012) and Kumar (2017). The finding supports the study's a priori expectation and agrees with the Arbitrage Pricing Model (APT) which assumes that there are various market and industry related factors that contribute towards returns on stocks.

Conclusion and Recommendations

In line with the findings that firm size has insignificant negative effect on stock returns of twenty-one most capitalized quoted equity firms in Nigeria, the study concludes that size is not a good determinant of stock returns in Nigeria. Furthermore, with significant positive influence of ratio of market to book value per share on stock returns of twenty-one most capitalized quoted equity firms in Nigeria, the study concludes that the ratio is a good determinant of stock returns and investors in Nigeria prefer companies whose stock prices trade lower relative to their fundamentals, thus consider them undervalued. Based on the finding that price to earnings ratio has insignificant positive impact on stock returns of twenty-one most capitalized quoted equity firms in Nigeria, the study concludes that price to earnings ratio is not a major determinant of stock returns in Nigeria. Thus, other variables could have more explanatory powers on stock returns in Nigeria. The study further states that investors may focus on those companies because they have above average growth potentials.

In line with the findings of the study, the following recommendations are made:

The Securities and Exchange Commission should closely monitor (including risk-based supervision) and carryout surveillance on firms with large market capitalization as well as all trading activities on the floor of the Nigerian Stock Exchange (NSE) to minimize incidences of stock price manipulations, such that they are reflective of the forces of demand and supply. Firms may

also work toward building strong fundamentals that may affect stock price positively. The investors should carefully use market to book value per share ratio to determine the difference between the firm's net assets and the market valuation as it is a reflection of the premium (or discount) that the market offers to the firm on its net assets and, as such, reveals the efficiency with which the market looks at the firm as being run and managed.

The investors and investment analysts need to exercise utmost care in determining the correct and comparable earnings per share of each company since companies with above average growth potential will traditionally command higher P/E ratios. These growth potentials may influence stock returns, hence be taken into consideration in making investment decisions. This is against the backdrop of positive contribution of price to earnings ratio on stock returns.

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