

Empirical Analysis of Firm Attributes' Effect on Stock Returns of Listed Consumer Goods Companies in Nigeria

Adigizey, John Dollay

Department of Business Administration
Nasarawa State University, Keffi, Nigeria

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Abstract

The corporate world of finance is said to have high affinity of well-managed, firm's attributes for engendering its solid growth and popularity among investors and creating Blue-chip stocks notable for superior stock returns. This ex-post-facto study was set to analyze the effect of firm attributes on stock returns of listed consumer-goods companies in Nigeria, with specific focus on the combined effect of firm size, firm age and profitability. Using purposive sampling technique, a sample size of sixteen (16) firms out of the population of twenty-three (23) listed consumer goods firms on the Nigerian Exchange Group (NGX) as at 2020, was obtained, with the criterion that a firm's financial information covering the study period (2011-2020) was complete. Extracted secondary data came from the annual financial reports of the sampled companies, and analyzed using pooled OLS regression technique. The result output revealed that firm size and firm age had negative insignificant effect, while profitability had positive significant effect on stock returns of quoted consumer goods companies in Nigeria. It was thus concluded that firm attributes had effects on the stock returns of companies in the consumer goods sector. Recommendations are that firms should ensure assets are effectively managed to have healthy firm size that will impart profits and firm value and hence improved stock returns to investors.

Keywords: *Consumer-goods, Firm size, Firm age, Profitability, Stock Returns, Pooled OLS regression.*

Corresponding Author: **Adigizey, John Dollay**

Background to the Study

In the corporate world, a company can be differentiated from another company on the basis of financial and non-financial characteristics which are unique to the particular company; such uniqueness provides a perception in the mind of the users of information regarding the performance and future of the company. In the current scenario where all critical decisions of firm management quickly reach the markets as well as information users, an important issue regarding financial research is the impact of these characteristics on returns of stocks. The value of a company or the value of its stock can be determined in many different ways. The most basic and easiest way to understand and measure each of these values is to look at the company's market value (Akwe, Garba and Dang, 2018); this is also known as the company's market capitalization, (or its market cap)—which is the value you get when you multiply all the outstanding shares of the company's stock by the current price of a single share. The stock exchange is an exceedingly fluid, dynamic and engaging entity. It facilitates thousands of transactions which occur simultaneously from traders striving to outbid and outsell each other. From the moment it opens there is unceasing activity until the second it closes (Nguyen and Nguyen, 2015). Decisions to buy, sell or hedge are based on analysis of sophisticated theoretical models or the instinct of a speculator. New information about company developments and stock recommendations are continuously made available while papers are released on new and different ways in which the market can be exploited.

Basically, good firm performance and prospects will be more attractive to investors (Paryanto and Sumarsoso, 2018). As a matter of necessity, in the corporate world of finance, a firm's attributes well-managed can engender impetus to solid growth and popularity leading to its offering becoming Blue-chip stocks that attract investors, and hence a healthy cycle of sustainable growth for the firm.

When investing, investors usually intend to obtain expected returns in the future (Acheampong, Aktas and Unal, 2014). In order to obtain the expected return, investors need to consider the investment decisions they take before investing; which should include "checking whether the invested capital can provide the expected return or by looking at the nature of what has happened, such as the realized return, which is important to measure and know the performance of a firm before investing". This study therefore, provides measurement of stock returns variation that is caused by firm attributes. For instance, firm attributes such as size, leverage, age and profitability can be used to predict the variations in stock returns. Nyikyaa (2021) declared that "firm-size is one of the first empirically documented firm characteristics associated with realized stock returns". This is because the size of the company matters, as in all countries, dividends are paid by the biggest and most profitable firms (Denis and Osobov, 2008). Large firms use their assets to generate much income and such performance would send a good signal to the market. Also, firm-size is related to profitability, as bigger and more profitable firms are more likely to guarantee higher returns (Consler and Lepak, 2016). In the case of firm age—it is widely added as a determinant of stock returns (Custódio and Metzger, 2014; Lin and Zhang, 2011). As firms grow older, they are characterized by lower rate of failure and low costs to obtain capital (Koh et al., 2015), and moreso, at older age, they have experience to negotiate favorable debt

capital to increase returns, and obviously, the reverse could be true for young firms in the birth stage.

It is understood that Nigeria is a developing market with diverse structure and institutional features from developed stock markets; and with the assumption that investors are interested in getting more insights into the activities of consumer goods companies in the country because of the indispensability of their products in the Nigerian market, it is imperative to find out whether stock returns in Nigeria respond differently to effects of firm level attributes. Hence, the broad objective of this study was to examine the effect of firm specific attributes on stock returns of quoted consumer goods companies in Nigeria; the specific objectives included: (i) ascertaining the effect of firm size on stock returns of quoted consumer goods companies in Nigeria; (ii) examining the effect of firm age on stock returns of quoted consumer goods companies; and (iii) assessing the effect of profitability on stock returns of quoted consumer goods companies in Nigeria. Hence the following hypotheses were formulated to guide the study;

- H₀1: There is no significant effect of firm size on stock returns of quoted consumer goods companies in Nigeria
- H₀2: Firm age has no significant effect on stock returns of quoted consumer goods companies in Nigeria
- H₀3: There is no significant effect of profitability on stock returns of quoted consumer goods companies in Nigeria

Conceptualisation

Firm Attributes

The concept of 'firm attributes' as described by [Lang and Lundholm \(1993\)](#) relates to the wide varieties of information disclosed in the financial statement of business entities that serve as the predictors of the firms' quality of accounting information and performance. Certain unique characteristics (called firm attributes) possessed by companies serve to differentiate them from each other; these attributes which exist at the firm's level have the potential to influence the decisions of the managers in the company. [Shehu and Farouk \(2014\)](#) described firm attributes to include variables at the firm level that affect the decision of the firm both internally and externally over time. Such variables include Size, Leverage, Growth, Value, Profitability, For the purpose of this study the attributes of concern include Firm size, Profitability, and Firm age.

Firm Size

Firm size is associated with the rate and extent of increase that is right for a specific company, through which the firm impacts its economic overall performance. [Shaheen and Malik \(2012\)](#) described firm size as "the quantity and array of production capability and potential a firm possesses or the quantity and diversity of services a firm can concurrently make available to its clients".

Firm size is commonly measured by either natural logarithm of assets, or sales or employees. [Pervan and Visic \(2012\)](#) posited that larger firms are associated with having more

diversification capabilities, ability to exploit economies of scale and scope and also being highly formalized in terms of procedures, and hence more effective in comparison to small firm. Firm size is one of the first empirically documented firm attributes associated with realized stock returns. Several scholars (see; [Fama and French, 1992](#); [Keim, 1983](#); [Reinganum, 1981](#); [Banz, 1981](#)) considered 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". [Babalola \(2013\)](#) argued that, the larger a firm is, the more the influence it has on its stakeholders, and so large firms tend to outperform small firms. Large-size company obviously indicates high number of assets that can be used to provide a good firm value, and hence reasonable return to investors. This fact conforms with the studies carried out by several authors (e.g., [Ernayani and Robiyanto, 2016](#); and [Sudarsono and Sudiyatno, 2016](#)) that firm size had an effect on stock return was a contradiction to the Capital Asset Pricing Model (CAPM). Furthermore, Small companies are basically riskier than big companies. Firm size is perhaps considered most acknowledged determinant of stock return, and also plays a significant and crucial role in explaining the kind of relationships the firm has within and outside its operating environment. Strictly, thus, in the parlance of stock and securities, [Nguyen and Nguyen \(2016\)](#) posited that firm size measure indicators are many: for instance, [Hopkins \(1988\)](#) used Total Assets to represent firm size; while [Al-Khazali, Osamah and Zoubi \(2011\)](#) used market capitalization; nevertheless, [Moore \(2000\)](#) used total assets for firm size rather than market capitalization to avoid inflation or deflation of securities. This assumption is appropriate for the context of a market that is inefficient—market stock prices do not reflect (or mirror) all accompanying information.

Firm Age

The length of time of existence of a company is the age of the company. [Shumway \(2001\)](#) revealed that some are of the believe that listing age, should define the age of the company; however, he is of the view that firm's age should be defined in terms of the number of years of incorporation. [Shumway \(2001\)](#) argued that incorporation listing is a defining moment in a company's life; hence, age listing in terms of incorporation has become more economical. His argument is set straight from person, a company is born through incorporation ([Gitzmann, 2008, Pickering, 2011](#)). On the hand, [Pham and Nguyen \(2017\)](#) thought firm age should relate to year of listing on stock exchange; they thus defined firm age as "the difference between the observed year and the initial year of listing on stock exchange". Again, firm age is widely added as a determinant of stock returns ([Custódio and Metzger, 2014; Lin and Zhang, 2011](#)). Firm age is an important factor in determining stock returns. This is because as firms grow older, they are characterized by lower rate of failure and low costs to obtain capital ([Koh, Durand, Dai and Chang, 2015](#)), and they have experience to negotiate favorable debt capital to increase returns. The reverse is true for young firms in the birth stage ([Stepanyan, 2012](#)). The fact is as listed firms becomes older and closer to maturity stage in their firm life cycle, they acquire more business experience to make effective capital structure decisions and do utilize debt to increase returns. Firm age plays an important role in the firm's decisions to seek debt capital. Specifically, older companies use more debt in their capital structure to take advantage of the benefits of an interest tax shield to maximize shareholders' returns.

Profitability

While firm size and firm age were discussed as prosperous dimensions of a firm, profitability is another critical aspect that cannot be left out, and thus had a place in the study discuss. [Dioha, Mohammed and Okpanachi \(2018\)](#) posited that "profitability of corporate organizations has been one of the major concerns of management experts, investors and as well as researchers", and agreed with [Ahmed, Naveed, and Usman \(2011\)](#) that it is "the most important and reliable indicator of corporate growth as it gives a broad indicator of the ability of companies to raise their income level." Earnings per share (EPS) is one form of profitability measure, and usually has significant positive influence on market return as shown in many past researches. This explains that the higher the firm's EPS, the higher market adjusted return and abnormal return that can result from firm's stock, because a higher EPS means higher profit obtained from every naira-price earned by the firm. Investors/shareholders consider current earnings, future earnings, and earnings stability as important, thus they focus their analysis on firm's profitability. They concern about financial condition which will affect firm's ability to pay dividend and avoid bankruptcy. Also, profitability, which is frequently used as measure of financial performance, is one of the main objectives for the existence of many companies. Profit is an essential prerequisite for any company operating in today's increasingly competitive and globalized market. In addition, profit does not only serve as a means of attraction to investors; it also improves the level of solvency, and thus, strengthens consumers' confidence ([Ismail, 2013](#)). The concept of profitability is fundamental to both accounting and economic theories. Since it is an offshoot of income, it also has its foundation form the famous Hicks' concept of income. Using the Hicksian approach, profit can be explained as the maximum value which can be consumed at a given period of time without tempering with "well-offness" ([Glautier, Underdown and Morris, 2011](#)). This definition has been staunchly supported by economists. It provides a sound basis for appreciation of what actually constitutes income and hence, profit.

Stock Returns

A stock simply refers to a share in the ownership of a company—it represents a claim on the company's assets and earnings. The percentage take 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 \(1999\)](#), 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. The word 'return' in Finance 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, (whether it be 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 return is very important as it is the main objective of investment in ordinary shares. Investors, both existing and potential ones' regard return as the fundamental reason for investing in a particular firm. Stock return can be in form of capital appreciation/depreciation (as obtained in the Nigerian stock exchange) plus dividend received if any. Stock prices are important metrics of measuring stock market returns. Therefore, the value attached to them matters a lot to both existing and prospective investors in the stock market. There are several factors in stock prices determination in the stock market. These factors range from accounting and non-accounting information. Stock Market Returns are the returns or gain that the investors generate out of the stock market ([Lin and Zhan, 2011](#)).

Theoretical Framework

Arbitrage Pricing Theory (APT)

The Arbitrage Pricing Theory (APT) of [Ross \(1976, 1977\)](#), and extensions of that theory, constitute an important branch of asset pricing theory and one of the primary alternatives to the Capital Asset Pricing Model (CAPM). The Arbitrage Pricing Theory (APT) of [Ross \(1976, 1977\)](#), and extensions of that theory, constitute an important branch of asset pricing theory and one of the primary alternatives to the Capital Asset Pricing Model (CAPM). This theory developed by [Ross \(1976\)](#) as a Capital Asset Pricing Model (CAPM), is based on the foundation that stock returns are caused by a specific number of economic factors. According to this theory, there are different risks in the economy that cannot be eliminated by sole diversification. It is a one-period model in which every investor believes that the stochastic properties of returns of capital assets are consistent with a factor structure. [Ross \(1976\)](#) argued that if equilibrium prices offer no arbitrage opportunities over static portfolios of the assets, then the expected returns on the assets are approximately linearly related to the factor loadings. [Ross' \(1976\)](#) heuristic argument for the theory is based on the preclusion of arbitrage. Her formal proof showed that the linear pricing relation is a necessary condition for equilibrium in a market where agents maximize certain types of utility. The subsequent work, derives either from the assumption of the preclusion of arbitrage or the equilibrium of utility-maximization. A linear relation between the expected returns and the betas is tantamount to an identification of the stochastic discount factor (SDF). Basically, at the core of APT is the recognition that only a few systematic factors affect the long-term average returns of financial assets. APT does not deny the myriad factors that influence the daily price variability of individual stocks and bonds, but it focuses on the major forces that move aggregates of assets in large portfolios. By identifying these forces, one can gain an intuitive appreciation of their influence on portfolio returns. The ultimate goal is to acquire a better understanding of portfolio evaluation and so as to improve the overall portfolio design and performance. The returns on an individual stock in, say, the coming year, will depend on a variety of anticipated and unanticipated events. Anticipated events will be incorporated by investors into their

expectations of returns on individual stocks and thus will be incorporated into market prices. Generally, however, most of the return ultimately realized will be the result of unanticipated events. Of course, change itself is anticipated, and investors know that the most unlikely occurrence of all would be the exact realization of the most probable future scenario. But even though it is realized that some unforeseen events will occur, their direction or their magnitude is still unknown. What can be known is the sensitivity of asset returns to these events.

Empirical Review

In Nigeria, [Dioha et al. \(2018\)](#) carried out a study that examined the effect of firm characteristics on profitability of listed consumer goods companies in Nigeria. They used firm age, firm size, sales growth, liquidity and leverage as proxies for the independent variable, against the dependent variable of Profitability. For the study population, they used the twenty-two (22) consumer goods companies that were listed as of 2016 out of which eighteen (18) were selected to form the sample of the study covering a period of six years (2011-2016), from which secondary data were obtained from the financial statements of the companies for analysis. The tool for the analysis was the multiple regressions on a panel data. The random effects model (from Hausman test) was the appropriate model used for the study. The results indicated that firm size ($\beta = .0880$, p -value=0.038), sales growth ($\beta = .001$, p -value=0.078), and leverage ($\beta = -.696$, p -value=0.000) had significant effects on profitability, while firm age ($\beta = .0855$, p -value = 0.171) and liquidity ($\beta = -.0031$, p -value = 0.851) showed no significant effect on profitability of listed consumer goods companies in Nigeria. They thus recommended that consumer goods companies in Nigeria should conduct careful evaluation and take into consideration the firm characteristics (firm size, sales growth, and leverage) that affect the profits of the company before making major business decisions as this will help in improving their profitability. The strength of this study is on its methodology, as the sample size was reasonable such that conclusions are reflective of the entire population of listed consumer goods companies in Nigeria. Its weaknesses is on the fact that the study had a focus on profitability rather than on stock return. But the response is that stock return has a direct bearing with profitability. After all, dividends are paid by the biggest and most profitable firms ([Denis and Osobov, 2008](#)).

Another study carried out in Nigeria was by [Akwe et al. \(2018\)](#) who examined the effects of firm level attributes on stock returns of top twenty-five most capitalized quoted equity firms. Specifically, the study investigated the effects of firm size, ratio of market to book value per share, and price to earnings ratio on stock returns of selected quoted firms in Nigeria from 2007–2016. The population comprised top twenty-five (25) most capitalized quoted equity firms, out of which twenty-one (21) companies were taken as the sample size. 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 Exchange Group (NGX) database and website. Analysis of data was carried out using panel data regression. Results indicated insignificant negative effect between firm size ($\beta = -416.4$, p -value = 0.3642) and stock returns in Nigeria. The study used selected equity firms in Nigeria while the current study used consumer goods companies which make for the much differences.

Another study was by **Nyikyaa (2021)** who examined the combined effects of firm size, price earnings ratio, firm age, and leverage on stock returns of quoted industrial companies in Nigeria from 2009-2018. Stock returns was measured by the amount of dividend paid in a year. The study adopted *ex-post-facto* research design; with the population of nineteen (19) quoted industrial goods companies in Nigeria, out of which fourteen (14) were selected for the purpose of data collection. The study used secondary data obtained from the audited accounts of the sampled firms while analysis of data was done using Ordinary Least Square (OLS). The result of the study showed that firm size and price earnings ratio had significant effect on stock returns, leverage had positive insignificant effect on stock returns while firm age had negative insignificant effect on stock returns of quoted industrial goods companies in Nigeria.

The work carried out in Nigeria by **Bala and Idris (2015)** was done on firms' specific characteristics of firm size, debt-equity, and earnings-per-share and stock market returns in Nigeria. Out of the twenty-one (21) quoted food and beverages firms in Nigeria, they used a sample size of nine (9), and collected their secondary data covering the period 2007 to 2013; they conducted their analysis by use of multiple regression models. Their results found that firm-size had a significant but negative effect on stock returns of quoted food and beverages firms in Nigeria. Furthermore, the effect of earnings-per-share and debt-to-equity was found to be statistically significant and positive. The weakness of this study stemmed from the fact that research did not factor in dividend in the measurement of the Regressand (stock market returns). Stock return is the combination of dividend yield and capital appreciation. One other weakness is the sample taken. The use of only nine (9) out of over 170 sampled quoted firms fell short of being the representative of the entire market. More firms would perhaps have predictive results. The developed model could have included suitable control variables (including other internal non-financial variables that have been found to explain stock returns in other areas of influence) that might stem down level of spurious result outcome.

The study of **Olowoniyi and Ojenike (2012)** on "Determinants of stock return of Nigerian listed firms was predicated on identifying the factors that influenced stock returns. Panel econometric approach was used to analyse panel data obtained from 70 listed firms for the period 2000-2009. The fixed effect (FE), random effect (RE) and Hausman-test based on the difference between fixed and random effects estimators were conducted. Their findings suggested that expected growth and size positively influenced stock return while tangibility negatively impacted on stock return of listed firms. A study done in 2012 could not stand the dynamism of present conditions, such as the changes in governance, economic fluctuations and other regulatory requirements, and may thus not deliver on informed business decisions.

In faraway Malaysia, **Matemilola, Bany-Arifin, Nassir and Azman-Saini (2017)** investigated the moderating effects of firm age on the relationship between debt and stock returns. The system generalized method of moment's results indicated that firm age had a positive moderating effect on the relationship between book debt and stock returns. The results were robust, as firm age positively moderated the relationship between market debt and stock returns. Moreover, firm age had a direct positive effect on stock returns. Results

suggest that as firms grow older, they use their experience to make effective capital structure decisions (i.e. optimal debt-equity mix) to maximize debt interest-tax-shield and increase shareholders' returns. This current study used multiple regression technique to analyse the data for the study which had a different methodological approach.

Nguyen, Nghiem and Roca (2017) investigated the existence of size effect in Vietnamese financial market, with particular focus on the relationship between firm size and stock returns. The authors used information covering 160 observations of the companies in the service sector from 2009 to 2014. The correlational research design was adopted and the multiple regression model was employed to test the effect. The result revealed a significantly negative relationship between firm size and stock returns. This study carried out from far Asian country may have a different implication in a Nigerian setting possibly due to differences in political and economic setting. Their study was done in 2017, but today, there is high dynamism in studies involving stock returns, and so present finding may not completely match current study's. Moreso, their study focused on firm size as the only explanatory variable, and such an isolated situation where no control variables were introduced along with the could bring about spurious results. In while this current study employed both firm characteristics and corporate governance variables.

From the empirical studies reviewed, there is a research gap to be filled here: most empirical work done had inferences on firm size, and had few or nothing regarding firm age and profitability. This study thus boosted literature in these areas particularly with respect to stock returns of listed consumer goods companies in Nigeria.

Methodology

This study adopted a descriptive *ex-post facto* research method and positivist research philosophy for the purpose of addressing the research problem. The target population of the study represents the total items about which information is desired (**Kothari and Garg, 2014**); this comprised all the twenty-three (23) listed consumer goods firms on the Nigerian Exchange Group (NGX) as at 2020. The study used purposive sampling technique to obtain a sample size of sixteen (16) of the listed firms. This number was based on the criteria that a company must have complete information for the number of years under consideration (2011-2020), for it to be qualified in extracting the secondary data needed. The data for the study were panel in nature (that is cross-sectional time series data). These were extracted from the annual reports of the sampled companies for a period of ten (10) years (2011 to 2020), thereby providing the study with possible 160 observations in all. With the aid of STATA version 13 software, a multiple regression technique was employed to analyse the data.

Defining Study Variables

The variables of measurement in this study are described on table 1.

Table 1: Variable Nomenclature and Measurement

S/N	Variable Designation	Definition	Variable Type	Measurement	Construct Validity/ Source
1	SR	Stock Returns	Dependent	If P_1 = Stock price in current year as quoted at end of the financial year; P_0 = Stock price in the last financial year end, then $SR = \frac{P_1 - P_0}{P_0} \times 100$	Ayuba (2018); Bala and Idris (2015).
2	FZ	Firm Size	Independent	Measured by Natural logarithm of Total Assets.	Nguyen and Ngyuyen (2016); Bala and Idris (2015); Akwe et al. (2018).
3.	FA	Firm Age	Independent	Measured by firm's listing age; that is the number of years that have elapsed since the year of the company's IPO.	Shafana, Fathima and Jariya (2013)
4.	PROF	Profitability	Independent	Measured by ROA = PBIT divided by Total Assets.	Sani, (2016); Handoko (2016).

Source: Researcher's Compilation, 2022.

Empirical Model Specification

The working independent variables may be related to the dependent variable in a linear funtion given as: $SR = f(FZ, FA, PROF)$, from which a mathematical equation is generated in consonant with the previous studies of Igbal et al. (2016), Nguyen and Nguyen (2016) and Ltaifa and Khoufi (2016), and modified to suit the variables of this current study, thus:

$$SR_{it} = \lambda_0 + \lambda_1 FZ_{it} + \lambda_2 FA_{it} + \lambda_3 PROF_{it} + \mu_{it} \dots \dots \dots (i)$$

Where: SR_{it} = Stock return of firm i at year t , FZ_{it} = Size of firm i at year t , FA_{it} = Age of firm i at year t , $PROF_{it}$ = Profitability of firm i at year t , λ_0 = intercept on the SR axis (a constant term representing Stock returns when all variables = 0) and μ_{it} = residual- or unique-errors.

λ_1, λ_2 and λ_3 = the vectors of parameters (coefficients) for explanatory variables (FZ, FA, PROF) in the SR Model; and μ_{it} = Unique error term for firm i at year t .

Results and Discussions

Descriptive Statistics

This section contains the description of the properties of the variables ranging from the mean of each variable, minimum, maximum and standard deviation. The summary of the descriptive statistics of the variables are presented in table 2.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
SR	160	84.73062	264.197	.17	1485
FZ	160	7.665492	2.200851	2.83181	14.87833
FA	160	28.3	14.39025	1	54
PROF	160	.3020525	.233	-.2239673	.891987

Note: SR = stock returns; FZ = firm size; FA = firm age; PROF = profitability.

Source: Researcher's Extraction from STATA13 OUTPUT, 2022.

The descriptive statistics shown in table 2 (using 5 significant figures) reveal that the measure of SR (stock return—which is the inverse of the share price) of consumer goods firms has a mean value of 84.731 and a corresponding standard deviation of 264.19. This implies that the deviation between consumer goods companies within the period significantly differed. Also, the minimum and maximum values stood at 0.17 and 1485 respectively, indicating that the firms recorded a significantly low (0.17) and high (1485) stock returns in varying years. The table also indicates that the sampled firms had an average firm size of 7.6655 with standard deviation of 2.2009. This means that the average value of firm size within the period of the study was ₦7.67 billion. The figure of the standard deviation means that there was a high level of variance in firm size among the companies. The minimum and the maximum as shown by the Table was 2.8318 and 14.878. This implies that the least firm size was ₦2.83 billion and the largest was ₦14.88 billion. Furthermore, Table 2 shows that on average, the firm age of companies during the period of the study was 28.3 years, with a standard deviation of 14.390 years, meaning that on the average, firms age of existence had been 28 years. The value of the standard deviation which is far from the mean value indicates that there was a lot of differences in age among the individual sampled firms. The value of firm age for minimum and maximum is 1 and 54 respectively; meaning that the youngest company was 1 year old while the oldest was 54.

In terms of profitability, Table 2 also indicates the mean of profitability as 0.30205 signifying that on the average 30% of the companies sampled made profit within the period of the study. In addition, the value of the standard deviation which was 0.23321 (23%) is relatively close to the mean implying a certainty of claim that at least 30% of the companies registered profit at various periods in the ten years captured by this study. Also, the profitability shows a minimum and maximum value of -0.22397 and .89199 respectively. By interpretation, it means that of the sampled firms, the one with the lowest recorded loss had 22%, while the firm with the maximum recorded profit had 89%.

Correlation Matrix

In correlation analysis, the primary objective is to measure the strength or degree of linear association between two variables. Correlation is a pre-diagnostic analysis, and shows the relationship between the explanatory (independent variables) and the explained variables and also the relationship among all pairs of independent variables themselves. In correlation

analysis, the primary objective is to measure the strength or degree of linear association between two variables, that is, its usefulness is in discerning the degree or extent of relationship among all dependent and independent variables (Gujarati, 2004). However, the correlation between pairs of independent variables if excessive could lead to multicollinearity, and consequently to spurious results. Table 3 presents the correlation between the dependent variable SR and the independent variables (firm size, firm age and profitability) on one hand, and among the independent variables themselves on the other hand. Generally, high correlation is expected between dependent and independent variables while low correlation is expected among independent variables. But between two independent variables a correlation coefficient of 0.80 is considered excessive (Gujarati, 2004), and so certain measures are required to correct that anomaly in the data. From the table, it can be seen that all the correlation coefficients among the independent variables are below 0.80, and so this gave indication that multicollinearity was possibly absent; To confirm this was so the variance inflation factor (VIF) and tolerance value (TV) were conducted (see table 4).

Table 3: Pearson Correlation Matrix

Variable	SR	FZ	FA	PROF
SR	1.0000			
FZ	0.1359	1.0000		
FA	0.2490	0.5138	1.0000	
PROF	0.2344	0.3674	-0.0230	1.0000

Source: Computed using STATA 13 from Annual Financial Reports of the sampled firms 2011-2020

In Table 3, it could be seen that there was a positive correlation between the dependent variable (Stock Returns) and the explanatory variables (of firm size, firm age and profitability) with coefficients of 0.1359, 0.2490 and 0.2344 respectively. By implication, it means that the three explanatory variables desirably moved in the same direction with stock returns.

Test for Multicollinearity

Multicollinearity test is a pre-estimation diagnostic test required to ascertain the health or robustness of time series data used for analysis. Absence of multicollinearity between two or more independent variables is key criterion and a necessary condition in the regression analysis, that it makes it possible to determine the separate effects of individual variables. Multicollinearity occurs when the explanatory variables are not independent of each other, but extremely correlated with each other. According to Hair *et al.* (2006), the presence of high correlations (generally 0.90 and above) indicates presence of multicollinearity. It is examined using tolerance and variance inflation factor (VIF) values. as shown in table 4.

Table 4: Variance Inflation Factors

Variable	VIF	1/VIF
FA	1.03	0.491734
FZ	1.89	0.528388
PROF	1.31	0.766126
Mean	VIF = 1.41	

Source: Stata13 Output, 2022

According to [Hair et al. \(2006\)](#), the common cut-off threshold for VIF is a tolerance value of not less than 0.10, which corresponds to a VIF value of less than 10, for non-multicollinearity. From Table 4, the VIF results indicated absence of multicollinearity since VIF values are less than 10. The study thus concludes that the analysis data were healthy and the variables had no multicollinearity, and thus reliable.

Test for Heteroscedasticity

Heteroscedasticity test is conducted to ascertain whether the variance in residuals or error terms is constant (that is having equality of variances), which is the desirable condition; the null hypothesis is that there is constant variance. But where the situation is otherwise, we have heteroscedasticity, where the variance is un-equal which can cause inferences from results in respect of beta coefficients, coefficient of determination (R^2) and F-statistic of the study to be spurious. So, to obviate this undesirable situation, the heteroscedasticity test was conducted, using Breusch-Pagan test, to determine the position of variability:

Breusch-Pagan/Cook-Weisberg test for heteroskedasticity

Ho: Constant variance
Variables: fitted values of SR
Chi2(1) = 0.74
Prob>Chi2 = 0.1202

To check for the fitness of model and reliability of findings, the goodness-of-fit test which is a statistical hypothesis test (that specifies how sample data fit a distribution from a population with a normal distribution) reveals Pearson Chi2 value of 0.74 and a corresponding p -value of 0.1202. This means that the study model had a good fit.

Endogeneity Problem/Hausman Specification Test

Endogeneity broadly refers to situations in which (a predictor or regressor, or) an explanatory variable is correlated to the error term ([Wooldridge,2009](#)). In order to check for endogeneity, the Hausman test proves valuable. It specifies which model is most appropriate: fixed effect model or random effect model. It assumes that the random effect model is the null hypothesis

(that is the preferred model) while the alternative is the fixed effect model. It tests whether the unique errors (u_i) are correlated with the regressors; the null hypothesis is, they are not. That is $H_0 =$ Random Effect; $H_a =$ Fixed Effect.

Hausman Specification Test:

Ho: difference in coefficients not systematic

$$\begin{aligned} \text{chi2}(3) &= (b-B)'[(V_b-V_B)^{-1}](b-B) \\ &= 0.76 \end{aligned}$$

Prob>chi2 = 0.8590

(V_b-V_B is not positive definite)

The result of the Hausman Test revealed that the value of chi2 of 0.76 had prob>chi2 of 0.8590, (which is greater than the 0.05 threshold value), and so insignificant. This therefore means that the Hausman test is in favour of Random Effect model.

Furthermore, to meet the condition that one or more equations had to be satisfied exactly by the chosen values of the variables, the Breusch-Pagan Lagrangian Multiplier test for random effect was conducted to choose between the random effect result and pooled OLS regression, whichever was more appropriate. The result as shown below revealed a prob>chi2 =0.0000. From this result, the best model to be interpreted is the pooled OLS regression model since the prob>chi2 is less than 0.05.

Breusch and Pagan Lagrangian multiplier test for random effects.

Table 5: Breusch-Pagan LM test for random effects

Var	sd	= sqrt(Var)
SR	69800.07	264.197
E	3988.291	63.15292
U	57406.42	239.5964

Test: $\text{Var}(u) = 0$
 chibar2(01) = 553.13
 Prob > chibar2 = 0.0000

Regression Results

The regression model, $SR_{it} = \lambda_0 + \lambda_1 FZ_{it} + \lambda_2 FA_{it} + \lambda_3 PROF_{it} + \mu_{it}$, stated earlier aimed at achieving the specific objectives of the study. The first model examined the effect of firm attributes (firm size, age and profitability) on share returns. The results of the study using pooled OLS regression as specified by the outcome of the Breusch-Pagan LM Test for random effect is presented below as well as the test of hypotheses.

Table 6: Pooled OLS Regression Result

Source	SS	df	MS	Number of obs = 160		
				----- F(3, 156) = 7.73		
Model	1436709.98	3	478903.326	Prob > F = 0.0001		
Residual	9661500.61	156	61932.6962	R-squared = 0.1295		
				----- Adj R-squared = 0.1127		
Total	11098210.6	159	69800.0666	Root MSE = 248.86		

SR	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	

FZ	19.19973	11.6543	1.65	0.101	-3.82086	42.22032
FA	2.940353	1.658177	1.77	0.078	-.335023	6.21573
PROF	327.9157	94.37998	3.47	0.001	-514.3432	-141.4881
CONS	-46.60901	71.63107	-0.65	0.516	-188.101	94.88295

Source: Computed (2022) using STATA 13.0 from Annual Reports/Accounts of the sampled firms (2011-2020)

In regression analysis, the result of the R-square value showed the level at which the explanatory variables explain the variation in dependent variable. The regression result in Table 5 reveals that the R-square is 0.1295. This means that the firm attributes in the study explained stock returns to the tune of 13%. The value of F-statistic=7.73 with probability of $\chi^2 = 0.0001$. The probability of χ^2 is significant at 5%, indicating that the model is fit. This serves as substantial evidence to conclude that the firm attributes selected for the study are suitable and can be used to predict the behaviour of the dependent variable.

Firm Size and Stock Returns

Based on the individual explanatory variables, the result revealed that firm-size had an insignificant positive effect on the stock returns of sampled consumer goods firms in Nigeria, from the coefficient of 19.19973 with t-value of 1.65 and a p-value of 0.101 which is statistically insignificant at 5% level of confidence. This result suggests that, an increase in firm size will increase the level of stock returns of firms. However, looking at the p-value such increase is considered insignificant. Hence, the study accepts the assertion that firm size has no significant effect on the stock returns of listed consumer goods firms in Nigeria. This conclusive finding was consistent with the work of [Nguyen, et al. \(2017\)](#), whose work in the Viatmese banks revealed a significantly negative relationship between firm size and stock returns; it is also in agreement with the work of [Dioha et al. \(2018\)](#), but only partially with the work of [Bala and Idris \(2015\)](#); also, the work of [Akwe et al. \(2018\)](#) that indicated insignificant negative effect between firm size and stock returns in Nigeria conformed with the current study.

Firm Age and Stock Returns

The result obtained from the pooled OLS regression (Table 6) indicates that firm age had a

positive but insignificant effect on stock returns (as indicated by $\beta = 2.9403$, $p\text{-value}=0.07$). This implies that the age of firms had some positive contribution to stock returns. However, since the p-value is above the 5% level of significance, the study lacks evidence to conclude that age can significantly influence the stock returns of firms in the area covered by the study; this finding is in conformance with the work of [Dioha et al. \(2018\)](#), but does not tally with the findings by [Matemilola, et al. \(2017\)](#), who had a direct positive effect of firm age on stock returns; the finding is also contrary to those of [Nyikyaa \(2021\)](#) who found that firm-age had negative insignificant effect on stock returns of quoted industrial goods companies in Nigeria.

Profitability and Stock Returns

The regression result in Table 5 indicates that profitability can significantly determine the stock returns of quoted consumer goods companies in Nigeria, (as shown by $\beta = 327.92$, $p\text{-value} = 0.001 < 0.05$). This means that the null hypothesis that profitability has no significant effect on stock returns of quoted consumer goods companies in Nigeria, is rejected. With this, the study is on the view that there is a strong likelihood that profitability could be used to predict the level of stock returns in the consumer goods sector. This has a partial agreement with the work of [Dioha et al. \(2018\)](#) who found that a relationship between firm attributes and profitability

Conclusion and Recommendations

Stock return and its effect on the activities of firms has become a topical issue in the literature of business and finance. Attempt was made in this study to examine the effect of three firm specific properties on stock returns of quoted consumer goods firms in Nigeria, with three formulated hypotheses linking firm size, firm age to stock returns. Based on the result obtained, the study concluded that in-so-far, the aggregated firm attributes were concerned, their combined influence on stock returns was significant. The effect however got diluted as the variables were considered on individual basis. Specifically, the study found that firm size and firm age did not have any significant influence on stock returns. Based on this result, the study lacked any statistical evidence to conclude that these variables formed determinants of stock returns of quoted consumer goods companies in Nigeria. However, the study found statistical evidence to conclude that profitability had a great influence on the level of stock returns of quoted consumer goods companies in Nigeria, as there was sufficient statistical and empirical evidence to support that this attribute had significant influence on stock returns among quoted consumer goods firms in Nigeria. It is therefore, recommended that the Security and Exchange Commission (SEC) should continually subject the reported profits of consumer-goods sector to stress quality tests to insulate the investors and potential investing public from possible rip off. Furthermore, firms should ensure effective management of assets so as to have healthy firm size that would impart reasonable profits and firm-value, and consequently yield improved stock returns to investors. This is justifiable since poor handling of firm's asset can make them poisonous, and could begin to work against profitability, and hence poor stock returns to investors.

References

- Acheampong, S., Aktas, R., & Unal, S. (2014). Relationships between stock markets and macroeconomic variables: An empirical analysis of the Istanbul Stock Exchange. *Investment Management and Financial Innovations*, 5(1), 7-16. DOI: 10.2139/ssrn.2126479.
- Akwe, J., Ayuba, I., & Dang, G. H., (2018). Effects of firm level attributes on stock returns in Nigeria. *Doctor of Philosophy Dissertation*, University of Dhaka.
- Al-Khazali, O. M., & Zoubi T. A. (2011). Empirical Testing of Different Alternative Proxy Measures for Firm Size. *Journal of Applied Business Research*, 21(3). <http://dx.doi.org/10.19030/jabr.v21i3.1471>
- Babalola Y. A. (2013). Triangulation Analysis of Capital Structure and Firms' Performance in Nigeria. *East Ukrainian National University [Vol. Dahl] 91034 Lugansk, Ukraine*
- Bala, H., & Idris, I. (2015). Firm's specific characteristics and stock market returns (evidence from listed food and beverages firms in Nigeria). *Research Journal of Finance and Accounting*, 6(16), 188-200.
- Banz, R. W. (1981). The relation between return and market value of common stocks, *Journal of Financial Economics*, 9, 3-18.
- Beni, L. & Alexander, V. (1999). *Ownership Structure and Firm Performance; Evidence from Israel*; Kluwer Academic Publishers Netherland, Volume number. 3: 189–201.
- Consler, J., & Lepak, G. M., (2016). *Dividend initiators, winners during 2008 financial crisis*, *Managerial Finance*, Emerald Group Publishing, 42(3), 212-224.
- Custodio, C., & Metzger, D. (2014). Financial expert CEOs: CEO's work experience and firm's financial policies. *Journal of Financial Economics*, 114(1), 125–154.
- Denis, D. J. & Osobov, I. (2008). Why do firms pay dividends? International evidence on the determinants of dividend policy. *Journal of Financial Economics*, 89(1), 62-82.
- Dioha, C., Mohammed, N. A. and Okpanachi, J. (2018). Effect of Firm Characteristics on Profitability of Listed Consumer Goods Companies in Nigeria. *Journal of Accounting, Finance and Auditing Studies* 4/2 (2018) 14-31
- Ernayani, M., & Robiyanto, L., (2016). Firm size has an effect on stock return contradiction to the Capital Asset Pricing Model (CAPM). *Journal of Financial Economics*, 53 (3), 353-384.

- Fama, E. F. & French, K. R., (1992). "The Cross-Section of Expected Stock Returns". *Journal of Finance*, 47, 427-465.
- Frimpong, M. (2010). The impact of external debt on economic growth in Ghana: A Cointegration Analysis. *Journal of Science and Technology*, 26(3): 121-130
- Gitzmann, M., (2008). Based on the belief that as a legal person, a company is born through incorporation. *The International Journal of Accounting*, 42: 123-142.
- Glautier, K., Underdown, H., & Morris. R. D., (2011). "Corporate transparency in China: Factors influencing financial disclosure levels". Working Paper, School of Accounting, University of New South Wales.
- Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate Data Analysis* (6th ed.). Upper Saddle River, NJ: Pearson Prentice Hall.
- Hopkins, H. D. (1988). Firm size: The interchangeability of measures. *Human Relations*, 41(2), 91-103. <http://dx.doi.org/10.1177/001872678804100201>
- Ismail, A (2013), 'Impact of Firm's Characteristics on Stock Return: A Case of Non-Financial Listed Companies in Pakistan', *Asian Economic and financial Review*. 3(1), 51-61.
- Keim, D. B., (1983). "Size-Related Anomalies and Stock Return Seasonality." *Journal of Financial Economics* 12(1), 13–32.
- Koh, S., Durand, R. B., Dai, L. & Chang M. (2015). Financial distress: Lifecycle and corporate
- Kothari, C. & Garg, G. (2014). *Research methodology*. New Age International (P) Ltd. Publishers. New Delhi
- Lang, M. H. and Lundholm, R. J. (1993). cross-sectional determinants of analysis rating of corporate disclosures. *Journal of Accounting Research*, 31(2); 246-271.
- Lin, W., & Zhang, R. (2011). Corporate social responsibility, ownership structure, and political interference: Evidence from China. *Journal of Business Ethics*, 96(4), 631-645.
- Matemilola, M., Bany-Ariffin, A., Nassir, K., & Azman-Saini, W. N. W. (2017). Moderating effects of firm age on the relationship between debt and stock returns, *Journal of Asia-Pacific Business* 18(1), 1-16, DOI: 10.1080/10599231.2017.1272999
- Nguyen, T. & Nguyen, H. (2015). Capital structure and firms' performance: Evidence from Vietnam's Stock Exchange. *International Journal of Economics and Finance*; 7(12) 2015 ISSN 1916-971XE-ISSN 1916-9728

- Nguyen, T. D. & Nguyen, P. H. P. (2016). The relationship between firm sizes and stock returns of service sector in Ho Chi Minh City Stock Exchange. *Review of European Studies*; 8(4), ISSN 1918-7173 E-ISSN 1918-7181.
- Nguyen, T. P. T., Nghiem, S. H. & Roca, E. (2017). Management Behaviour in Vietnamese Commercial Banks. *Australian Economic Papers*, 55(4), 317-510. <https://doi.org/10.1111/1467-8454.12085>
- Nyikyaa, M. N. (2021). Effect of firm specific characteristics on stock returns os selected quoted industrial goods companies in Nigeria. *International Journal of Managerial Science and Entrepreneurship*: Cambridge Research and Publications. 21(7). ISSN-1994-0386.
- Olowoniyi A. O. & Ojenike, J. (2012). Determinants of Stock Return of Nigerian Listed Firms. *Journal of Emerging Trends in Economics and Management Sciences* 3 (4), 389-392.
- Paryanto, J., & Sumarsoso, G. R. (2018). The external control of organizations: A resource dependence perspective. New York: Harper and Row.
- Pervan, M. & Visic, J. (2012). Influence of firm size on its business success. *Croatian Operational Research Review*, 3; 235-248.
- Pham, H. N. & Nguyen, M. C. (2017). Determinants of firm growth: Evidence on ownership structure effects and Gibrat's Law Validity. *Electronic copy available at: <https://ssrn.com/abstract=2997301>*
- Pickering, H., (2011). Based on the belief that as a legal person, a company is born through incorporation. *The International Journal of Accounting*, 42: 123-142.
- Reinganum, M. R. (1981). Misspecification of capital asset pricing: Empirical anomalies based on earnings' yields and market values. *Journal of Financial Economics*, 9, 19-46.
- Ross, S.A. (1976). The Arbitrage Theory of Capital Asset Pricing. *The Journal of Economic Theory*, 13, 341–360.
- Rossi, S. P., Schwaiger, M. S. & Winkler, G. (2009). How loan portfolio diversification affects risk, efficiency and capitalization: A managerial behavior model for Austrian banks. *Journal of banking & finance*, 33(12), 2218-2226.
- Shaheen, M. A. & Malik, K., (2012) “Investigating the Relationship between Corporate Governance and Accounting Conservatism in the Published Financial Statements: An Application on the Egyptian Exchange,” *The Scientific Journal of Economics & Commerce*.

- Shehu, U. H. & Farouk, B. (2014). Firm Characteristics and Financial Reporting Quality of Listed Manufacturing Firms in Nigeria. *International Journal of Accounting, Banking and Management*, 1 (6), 47-63.
- Shumway, T. (2001). Forecasting bankruptcy more accurately: A simple hazard model. *The Journal of Business*, 74(1), 101-124.
- Stepanyan, G. G. (2012). Revisiting Firm Life Cycle Theory for New Directions in Finance.
- Sudarsono, K. & Sudiyatno, S., (2016). Firm size has an effect on stock return contradiction to the Capital Asset Pricing Model (CAPM). *International Journal of Business and Economics Research*. 3 (5), 187-195.
- Wooldridge, J. M. (2009). *Introductory Econometrics: A Modern Approach*, 4th Edn., Australia: South-Western. p. 88. ISBN 978-0-324-66054-8.