Determinants of Profitability of Selected Quoted Consumer Firms in the Nigerian Exchange Group

By

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Abstract

Factors accounting for the nature of profitability of some quoted firms in the consumer sector of Nigerian Exchange Group are not known due to the recent paucity of researches in the sector. Therefore, this research is motivated by inquisitiveness triggered by agency theory problem to find out whether the managements are exercising due diligence given the firm specific variables under their control. The study focused on examining factors that affect profitability of selected quoted companies in the Nigerian Exchange Group's consumer sector. The population comprised 20 quoted consumer firms from which a sample size of 13 firms was selected using a purposive sampling technique. Data of ten years (2012-2021) based on information taken from the released yearly financial accounts of the firms was used. The data were described using descriptive statistics and the variables were also tested for correlation using Pearson correlation analysis. Panel regression was used to estimate the model. Hausman test was conducted and it was found that random effect model was more appropriate. The result revealed that: financial leverage has a positive but insignificant effect; firm growth, a negative and significant effect; and firm size, a considerable improvement effect, all on profitability. Therefore, it is recommended that the management of the firms should invest wisely while the board of directors should monitor expenses. Secondly, the firms' management should consolidate on their respective size so as to enjoy more economies of scale

Keywords*:* Profitability, Financial Leverage, Firm Size, Firm Growth .

1.0 Introduction

Profitability is the tendency to make profit by a business venture. It can be said to be the ability of firms to make return in excess of cost which all stakeholders thrive to achieve. There are some factors responsible for the nature of firm's profitability. The factors can include firm-specific characteristics and macro-economic variables. This work focuses on the firm-specific attributes (financial leverage, firm growth and firm size) as determinants of profitability. This is because the characteristics can be influenced by the management of the firms who are suspected by stakeholders to be using funds/profit to satisfy their personal needs at the detriment of the business as postulated in the agency theory.

Premised on the agency theory, this research was first motivated by the inquisitiveness to find out whether the managements are

exercising due diligence given the firm specific variables under their control to determine the nature of profitability of quoted consumer firms in Nigeria. Secondly, because there is a paucity of research in the said quoted sector in Nigeria, see for example the works of Muhammad et al. (2021), Eisa (2018), Fuertes-Callen and Cuellar-Fernande (2019). These studies were limited only to banks in foreign countries and as a result, this study bridges the gap by examining the determinants of profitability among quoted consumer businesses in the Nigeria Exchange Group. Three null hypotheses are formulated as:

H_{01}: Financial leverage has no significant effect on profitability of quoted consumer firms in Nigeria.

H_{02}: Firm growth has no discernible impact on profitability of quoted consumer firms in Nigeria.

H_{03}: Firm size has no discernible impact on profitability of quoted consumer firms in Nigeria.

The study consists of six sub headings: this being the first section, the introduction, followed by literature review then the methodology of the study, results and discussion of findings, conclusion and recommendations and lastly, suggestion for further studies section.

2.0 Literature Review

This section presents the conceptual, empirical and theoretical review of the study's variables (profitability, financial leverage, firm growth and firm size).

2.1 Conceptual Review

This subsection reviews concepts of profitability, financial leverage, firm growth and firm size respectively. The capacity to turn a profit from all of a company's business operations is known as profitability in organizations (Saptarshi & Tasnima, 2018). According to Paul and Agbo (2014), in order to be profitable, a company must generate returns on its assets that have a positive net present value. In a similar vein, Pouraghaljan and Milad (2012) defined profitability as the capacity to produce income in excess of cost of generating such revenue. Higher profitability ratios indicate better performance of banks (Mangla & Rehman, 2010; Ajlouni & Omari, 2013). Profitability is a relative term, several variables such as return on assets, return on equity, net profit margin and gross profit margin etc. can be used as proxies for profitability. Return on assets is adopted in this study because it is a ratio that measures how efficient a management is in utilizing its assets. In other words, it tells how much naira/kobo is generated for every naira spent in assets. Net income divided by total assets is how ROA is calculated. ROA is a reliable and popular metric for evaluating efficiency and profitability (Wasiuzzaman & Gunasegavan, 2013).

The concept of leverage is a significant piece of financial management as it helps in setting

the system for financial decision of an association. It additionally helps in choosing the ideal extent of obligation and equity in capital structure, so the expense of capital can be decreased (Dhagat, 2012). Financial leverage implies the measure of debt financing in an organization's capital structure. Leverage ratios are determined to measures the financial risk and the association's capacity of utilizing obligation furthering investors' potential benefit (Pandey, 2014). Leverage defines capital structure of the firms. It is one of the most challenging decisions for the management of the organization to choose the mixture of debt and equity.

Furthermore, financial leverage saves cost and reduces the risk of the owners. However, it becomes costly when firms are unable to use it efficiently. Firms have to pay financial charges on the leverage. If firms fail to apply leverage effectively, they have to suffer from cost of interest expenses on the amount of leverage which is to be repaid. Profitable firms prefer to use leverage because it reduces the risk of owner and more cost saving for the shareholders of such firms. According to Meyers and Majluf (1984), financial leverage influences company's profitability, which directly affects managerial performance (Hashini & Madumali, 2018). Debt to capital, debt to equity, long debt to asset, short debt to assets and total debt to assets ratios among others are prominent ratios use for measuring financial leverage. This study adopts total liability to total assets ratio as proxy for financial leverage. This is because it takes debt and other liabilities in financing the assets of the firm. It is calculated by dividing total liabilities by total assets.

However, firm's common assumption behind using growth as a metric for measuring an organization's success is that it is a necessary step towards achieving sustained competitive advantages and profitability (Markman, 2002). Additionally, larger businesses are more likely to survive (Aldrich, 1986), and they could profit from size-related economies of scale. The opposing viewpoint holds that rapidly expanding businesses may have problems related to expansion, which might impair profitability and perhaps cause financial instability. Based on this, data show that new enterprises become more successful when they join markets rapidly and on a big scale, MacMillan and Day (1987) hypothesized that fast growth may result in an increased profitability. However, Hoy (1992) came to the conclusion that the pursuit of high growth and business profitability may have only weak or even negative relationships. Delmar et al. (2003) emphasized the fact that company's development is not constant and can fluctuate significantly over time. Growth in the business sector is anticipated to be beneficial.

Firm size refers to the volume and diversity of production capacity and potential that a

company has, or the volume and variety of services that a company may offer at the same time to its clients as a result of the phenomena of economies of scale (Shaheen et al., 2012). The size of a company is crucial in today's world since larger companies can produce goods at considerably cheaper costs than smaller ones. Additionally, business size is becoming a common factor in accounting for organizational profitability (Abeyrathna & Priyadarshana, 2019). Firm size is anticipated to have a favorable impact from an a priori perspective.

2.2 Empirical Studies

Several empirical studies were carried out worldwide. Brief reviews of similar study are presented below:

Muhammad et al. (2021) investigated the factors that affect profitability taking a case study of Pakistani commercial banks. A sample size of twenty-five banks was purposively selected. Data were collected within the span of ten years (2009-2018). Panel regression was used to estimate the model and it was found that financial leverage has a significant and negative effect on return on assets.

Bui and Nguyen (2020) investigated the factors impacting a company's profitability in the Vietnamese oil and gas sector; a total of 203 samples were taken from 29 businesses listed on the Vietnam Stock Exchange over a six-year period from 2012 to 2018. The study's results showed that financial leverage has a negative influence on ROA.

Eisa (2018) studied bank specific and macro-economic using a panel data approach to the factors affecting the profitability of Indian commercial banks. A sample of 69 banks was used within the span of ten years (2008 – 2017) and panel regression was used to estimate the data. It was found that financial leverage has a positive and significant effect on return on assets.

Margaretha and Supartika (2016) examined the factors influencing the profitability of SMEs listed on the Indonesian stock market. The population of the study was 22 listed firms and data were collected for six years. Multiple regression was used to estimate the data and the analysis located that firm growth has a significant and negative effect on profitability.

Fuertes-Callen and Cuellar-Fernande(2019) used a large firm-level data set made up of manufacturing enterprises in Spain between the pre-crisis (2000-2007) and the crisis to study the relationships between growth and profitability in an economic crisis (2008–2014) period, static and dynamic panel data models were used for estimation. Growth was discovered to have a negative and substantial effect on profitability.

Muhammad et al. (2021) investigated the profitability factors taking a case study of Pakistani commercial banks. A size of a sample of twenty-five banks was purposively

selected. Data were collected for ten years (2009-2018). Panel regression was used to estimate the model and it was found that company size has a big negative impact on return on assets.

Margaretha and Supartika (2016) looked at variables influencing the profitability of SMEs listed on the Indonesian stock exchange. The population of the study was twenty-two listed firms and study data were collected for six years. Multiple regression was also used to estimate the data. It was found that firm size has a significant and negative effect on profitability.

Eisa's (2018) study using panel data examined the macroeconomic and bank-specific factors that affect the profitability of Indian commercial banks. A sample of 69 banks was used within the time frame of 10 years (2008 – 2017) and panel regression was used to estimate the data. It was discovered that firm size has a strong and beneficial impact on return on assets.

2.3 Theoretical Framework

Agency Theory

This theory was presented by Jensen and Meckling in 1976. They asserted that agency expenses brought on by the separation of ownership and control dictate dividend policy. According to the hypothesis, managers of corporations may prefer to pursue dividend policies that cater for their own personal interests and perks rather than those that maximize shareholder value. Given this reality, shareholders will want to create tactics for regulating managers' actions (Jensen & Meckling, 1976).

3.0 Methodology

The ex post facto research design was used in the study. The study's population cuts across 20 quoted firms in the consumer goods sector in Nigerian Stock Exchange Market from 2012-2021 that is, 10 years. The consumer sector was chosen because it is deemed the quoted sector with the largest number of firms in non-financial sector. The study equally adopted purposive/criterion sampling method based on a firm that recorded profit in its financial statement for at least seven years. This is to allow for substantial collection of recent data. The sampled firms are 13 (Guinness, Honeywell, International Brewery, Nascon, Nestle, Nigerian Brewery, Nigerian Enamelware, PZ Cussons Nigeria, Unilever, Vitafoam, Dangote Sugar, Cadbury and, flourmills Plc.) Stata 13.0 statistical software was used for the analysis.

Testing for the best model (fixed effect/random effect) to explore the The Hausman test, which is based on the null hypothesis that the random effect model is preferable to the fixed effect model, was performed to determine if there was a cause-and-effect link between the dependent and independent variables. While the estimate of the random effect panel regression assumes a connection between the error term and explanatory factors, estimation of the fixed

effect panel regression was based on the assumption that there was none. The model of this study is as follows:

$PROF = a + \beta LEV_{it} + \beta GRW_{it} + \beta SI_{it} + \mu$

Where:

PROF = Profitability (measured as return on assets)

a = Constant term

β = Coefficient

LEV = financial leverage (total liabilityto total assets)

GRW= firm growth ($sales\text{-}sales_{t-1}/ sales_{t-1}$)

SIZE = firm size (natural log of total assets).

i = Cross-sectional dimension

t = time series dimension

μ = Error term

4.0 Results and Discussions

The statistical results such as the descriptive statistics, correlation analysis, multi-collinearity test and the panel regression together with their discussions are presented in this section as follows.

4.1 Descriptive Statistics

In this section, we looked at descriptive statistics for the relevant dependent and explanatory factors. Each variable's mean, median, maximum, and lowest values are investigated. The study's descriptive data are shown in Table 1 below.

Table 1: Summary statistics

	Mean	Median	Std. Dev.	max	min	N
ROA	.236	.045	0.455	342	-.006	130
LEV	.234	.231	0.167	.605	.322	130
GROWTH	.253	.015	1.355	8.638	-.622	130
SIZE	9.682	9.752	6.628	24.317	.012	130

Source: **Researchers' Computation**, **2022**

Table1 showed that the mean value of return on assets (ROA) is .23 and the median is 0.45 among the sampled firms, this shows the absence of outliers. The maximum and minimum value of ROA is found to be .342 and -.006 respectively, this means that firms that are making profit and those making loss are included in the sample. The standard deviation from the mean is 0.455 and there are 130 observations.

The mean value of financial leverage is .23 and the median is .23 among the sampled firms, this shows the absence of outliers. The maximum and minimum value of financial leverage is found to be .605 and .322 respectively and this means all the firms used in the study are levered. The standard deviation from the mean is 0.16 and there are 130 observations.

That mean value of firm growth is .25 and the median is 0.015 among the sampled firms, this shows the absence of outliers. The maximum and minimum value of firm growth is found to be 8.63 and -.622 respectively; this means that while some firms are growing, some are not. The standard deviation from the mean is 1.35 and there are 130 observations. It was also discovered that the mean value of

firm size is 9.68 and the median is 9.75 among the sampled firms and this shows the absence of outliers. The minimum and maximum value of firm size is found to be.012 and 24.31 respectively; this means that while some are large, some are small. The standard deviation from the mean is 6.62 and there are 130 observations from Shapiro Wilk normality p- values which are all below 0.05. This means the data are not normally distributed therefore; they are logged to make it approximately normal.

4.2 Correlation

Results and the Pearson correlation coefficient (correlation matrix) of the one hundred and thirty (130) observations are presented in the below table.

Table 2: ***Matrix of correlations***

Variables	**(1)**	**(2)**	**(3)**	**(4)**
	ROA	**LEV**	**GRWTH**	**SIZE**
(1) ROA	1.000			
(2) LEV	0.477	1.000		
(3) GROWTH	-0.068	0.166	1.000	
(4) SIZE	0.442	0.896	0.128	1.000

Source: **Researchers' Computation**, **2022**

It can be observed from Table 2 that leverage is being moderately associated with return on assets (LEV/ROA= -0.4). The growth is negatively and weakly associated with return on assets (GROWTH/ROA= -0.06) but positively and weakly associated with leverage (GROWTH/LEV = 0.16). Size is negatively and moderately associated with return on assets (SIZE/ROA = 0.44), strong and positive with leverage (SIZE/LEV=0.8) and moderately positive with growth (SIZE/ GROWTH=0.12). The correlation coefficients showed that there is absence of multi-collinearity among the variables.

4.3 Multicollinearity

The multicollinearity result for the respective variables vis a vis variance inflation factors (VIF) are presented in Table 3.

Table 3: ***Multicollinearity***

VIF	1/VIF
	0.709
1.410	
	0.717
1.390	
	0.942
1.060	
MEAN VIF	
1.290	

Source: **Researchers' Computation**, **2022**

The VIF values of the variables which are all below the threshold of 10 indicated the absence of multicollinearity. Therefore, the whole variables can be used for statistical inference

4.4 Normality

The test for normality for each variable is presented in Table 4 with the respective p – values. The test was carried out using Shapiro – Wilk test.

Table 4: *Normality Test*

Variable	Obs	W	V	Z	Prob>z
ROA	130	0.563	44.953	8.563	0.000
LEV	130	0.945	5.664	3.902	0.000
GROWTH	130	0.243	77.964	9.802	0.000
SIZE	130	0.949	5.204	3.711	0.000

Source: **Researchers' Computation**, **2022**

4.5 Panel regression Results

The study used Panel regression to examine the cause-and-effect connections between the dependent and independent variables as well as to test the proposed hypotheses. The outcomes of the panel data regression obtained is presented and discussed in Table 5.

Table 5: *Panel Regression*

Fixed Effect Random Effect

	(1) ROA	(2) ROA
LEV	.066	.047
	(.097)	(.081)
GROWTH	-.264***	-.233***
	(.075)	(.065)
SIZE	.05***	.051***
	(.002)	(.002)
_cons	.044*	.043**
	(.023)	(.02)
Observations	130	130
Wald Ch2		1.462 ***
		.
F- stats	296.05***	
Pseudo R^2		

Source: **Researchers' Computation**, **2022**

Standard errors are in parentheses

**** p<.01, ** p<.05, * p<.1*

Note: ***, **, * implies statistical significance at 1%, 5% and 10% significant levels respectively and ( ) are standard errors.

4.5.1 Hausman (1978) specification test

The study used Hausman test to determine whether to use a fixed effect or random effect model. The null hypothesis of the test is that the random effect model outperforms the fixed effect model. The test is presented in Table 6.

Table 6: ***Hausman Test***

	Coef.
Chi-square test value	1.608
P-value	.658

Source: **Researchers' Computation**, **2022**

Taking a look at the Hausman test's p-value at (0.658), the p-value strongly suggests that the null hypothesis cannot be rejected; therefore, the alternative hypothesis is rejected at 0.65% importance level. This suggests that while formulating our conclusions and giving advice, we should use the random effect panel regression findings. The random effect model is therefore, used for the analysis.

The Wald chi square statistic 1.462(0.00) for random effect model shows that the model considers that it is statistically significant at 1% and it is appropriate for inference. Financial leverage (LEV) random effect=0.47as a factor that is independent of profitability appears to have both a large and beneficial impact on ROA at more than 5% level. This therefore, means the null hypothesis cannot be rejected i.e. hypothesis 1 (H_{01}: financial leverage has no significant effect on profitability). The coefficient indicates that for every 1% increase in financial leverage, return on assets is expected to increase by 0.47%. This implies financial leverage is not an important determinant of profitability.

Contrary to a priori expectation, firm growth (GRW) random effect = -0.233 (0.01) as an independent variable to profitability (ROA) appears to have a negative and significant influence on ROA at 5% level. This implies that hypothesis 2 should be rejected (H_{02}: Firm growth has no significant effect on profitability). The coefficient indicates that for every 1% increase in firm growth, profitability is expected to decrease by 23%. This implies that the firms are either experiencing a decline in sales revenue due to rising inflation or increase in operating expenses. This finding is in conformity with that of Fuertes-Callen and Cuellar-Fernande (2019)

Firm size (SIZE) Random effect=0.51(0.000) as an independent factor of profitability (ROA) appears to have a large and favorable impact influence on ROA at 5% level. This implies that we should reject hypothesis 3 (H_{03}: Firm size has no has no significant effect on profitability). The coefficient indicates that for every 1% increase in firm size, profitability is expected to increase by 51%.

This implies the study population constitutes of larger firms and because compared to smaller businesses, giant corporations can produce goods at substantially reduced costs, their profitability increases (Abeyrathna & Priyadarshana, 2019). The finding is in line with that of Eisa (2018).

4.6 Multicollinearity

This is a test carried out to ensure that one or more independent variables do not correlate to each other or one another in order not to break the assumption of linear dependence among the explanatory variables in multiple regres-sions. The test is shown in Table 7.

Table 7: Multicollinearity

VIF	1/VIF
Lev	0.709
1.410	
Growth 1.390	0.717
Size	0.942
1.060	
Mean	1.290

Source: **Researchers' Computation**, **2022**

The VIF values of the variables which are all below the threshold of 10, indicated the absence of multicollinearity. Therefore, the whole variables can be used for statistical inferences.

4.7 Heteroskedasticity

This test is carried out to test constant variance of assumption of ordinary least squares and it is presented in Table 8.

Table 8: Heteroskedasticity

Breusch-Pagan / Cook-Weisberg test for heteroskedasticity
Ho: Constant variance
Variables: fitted values of ROA
chi2 (1) = 154.05
Prob> chi2 = 0.0000

Source: **Researchers' Computation**, **2022**

The probability value 1% suggests that there is no uneven variance present in the model. Therefore, the probabilities used to make inferences about the level of significance are reliable and valid.

5.0 Conclusion and Recommendations

This study examined the determinants of profitability of quoted consumer firms in Nigeria. It was found that financial leverage is not a significant determinant. This means that leverage is not a major determining factor of profitability and cannot be used for statistical inference.

Firm growth and size are significant determinants of profitability. Furthermore, firm growth has a significant and negative effect on profitability. It can then be concluded that the quoted consumer firms are in the pursuit of high growth which has

necessitated a negative effect on profitability (Hoy, 1992). The management of the firms should invest wisely and the board of directors should monitor expenses.

On the other hand, firm size has a significant and positive effect on profitability. This is because most of the firms are large firms. Compared to smaller companies, large manufacturers can produce goods at significantly reduced costs (Abeyrathna & Priyadarshana, 2019). The firms' management should consolidate their size so as to enjoy more economies of scale.

6.0 Suggestion for Further Studies

As earlier stated, this study evaluated the influences of firm growth on profitability of quoted consumer firms in Nigeria. It was found that firm growth has a substantial negative effect on profitability. The reason for the negative effect should further be investigated by introducing operating expenses as independent variables. The expenses are introduced to find out whether the management is actually using funds/profit to invest for further growth as a cover up for unnecessary exorbitant expenses for personal aggrandizement which can further validate the agency theory argument if established.

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