On The Nexus between Ownership Structure and Capital Structure in the Listed Brewery Firms in Nigeria

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Abstract
This study investigates the relationship between ownership structure and capital structure in the listed brewery firms in Nigeria for the period of 2006-2020. The data used was collected from the Nigeria Stock Exchange (NSE) statistical bulletin/fact-book and the audited annual financial statements of the brewery firms. Nigerian Breweries and Guinness Nigeria are the two major players in the industry with Nigerian Breweries leading the market with about 65% market share while Guinness Nigeria follows with about 25%. A fixed effects regression model has been used on panel data of the sampled firms. Ownership structure has been explored in three dimensions: foreign, direct, and managerial shareholdings whereas leverage ratio was used as a proxy for capital structure. Our results show that there is significant positive relationship between ownership structure and capital structure in the Nigeria Listed Brewery Firms. However, foreign shareholding indicates insignificant and negative relationship with firms leverage in Nigeria brewery firms.

Key words: Corporate governance, ownership structure, capital structure, brewery firms, foreign shareholding, Nigeria

I. Introduction
The relationship between ownership structure and capital structure of firms is far from being unambiguous. Ownership and capital structures are interrelated through agency problem and control Aftab (2009). Managers in their capacity as owners’ representatives do make investment and financing decisions to increase the value of firm. The decision of the manager either creates value or reduces the value of the shareholders. When managers fail to act in line with owners’ tendency, agency problems may set in (Boroujeni, Naroozi, Nadem and Chdegani, 2013). Traditional literature maintains that agency problems between managers and shareholders may reduce the leverage ratio (capital structure) below the optimum level, in an effort to enhance the survival of the firm (Driffield, 2005). Capital structure of a firm is dependent on agency cost and asymmetric information, and ownership structure mitigates these costs and at the same exhibiting shareholders’ preferences for control.

In line with corporate governance practice, firms are differentiated with regards to the extent at which ownership is concentrated among managers and investors. The distribution of ownership among different groups (families, foreigners, managers, individuals, institutions, governments, and so on) can impact on managerial opportunism that invariably has significant implications for managerial behaviour and firm performance (Brailsford, Oliver and Pua, 2002). In the opinion of La Porta, Lopez-de-Silanes and Shleifer (1998), concentrated ownership could be facilitated by peculiar reasons such as remarkable legal and financial benefits of control, controlling interest in shareholding to better monitor the managers, and to circumvent the poor legal protection at the disposal of small investors, so on. It is understandable that the majority shareholders have more control on the firm assets and finances, which subsequently results in the concentration of control and ownership with the managers (insiders). Also, capital markets are less developed in Nigeria and the size of primary and secondary debt market is remarkably small. For this reason, Shah (2007) observed that companies are relying more on the banking sector for their debt financing needs than the debt market.

Capital structure is described by Putro and Risman (2021) as that aspect of the financial structure that is the reflection of the balance between long-term debt and equity. Esiprieh, Dadgarnejad and Jerjerzadeh (2013) observed that capital structure represents the solution adopted by the firms to fund their assets, combining stocks, debts, and hybrid equities. Different scholars have studied on corporate structure and performance of firms (Bayero and Bambale, 2017; Abu, Okpe and Okpe, 2016; Twairesh, 2014). However, there is still no...
generally accepted theory on the optimal capital structure (Vintila, Nenu and Gherghina, 2014). But the bottom line is that firm’s decision about its source of capital should be the suitable mix of debt and equity that will maximize the firm’s profitability.

Ownership structure affects corporate governance and the decision making process of the firm and among the decisions is the leverage decision. This means that there is a relationship between the ownership structure and capital structure (Karati, 2014). But the causal relationship between them is yet to be determined. Nigeria has an economy typical of developing country and harsh corporate operating environment. Although many studies have been conducted in developed countries on the relationship between ownership structure and capital structure, few in-depth investigations have been conducted in developing economy like Nigeria. Also, the objective of most prior research was to examine the relationship between either capital structure or ownership structure and firm performance in Nigeria. Again, previous studies only considered state or family ownership; no study to the knowledge of the author in Nigeria have investigated the effect of other types of ownership structures, such as foreign ownership, managerial ownership, and direct ownership. This current study, therefore, aims to fill this gap in literature by investigating the relationship between ownership structure and capital structure in the listed brewery firms in Nigeria for the period 2006-2020. In this study, the relationship between foreign shareholders, managerial shareholders and direct shareholders (institutional and individual investors) and capital structure is also investigated since most Nigerian brewery firms report a significant number of their shares held by foreigners and directors (managers).

The remaining parts of the paper are sectionalized as follows: literature review and hypotheses development, empirical review, theoretical framework, methodology, model specification, results and discussions, conclusion, and policy recommendations.

II. Literature Review And Hypotheses Development

Ownership Structure and Capital Structure

Firm ownership is one of the firm structural characteristics that influence corporate performance. It is conceptualized as the shareholding structure of the firm. Ezeoha and Okafor (2010) defined ownership structure as the percentage of share held by managers (managerial ownership), institutions (institutional ownership), government (state ownership), foreign investors (foreign ownership), family (family ownership) and so on. Bansal (2005) reiterated that the ownership of a firm is generally composed of individuals, groups and institutions whose interests, goals, investment horizons and capabilities may differ considerably. In this study, ownership structure will be categorized into foreign ownership, direct ownership and managerial ownership.

Atseye, Edim and Eke (2014) stated that capital structure is the decision made by a firm to combine equity, long-term and short-term debt as the capital mix of the firm. Capital structure, in Margaritis and Psillaki (2010) refers to mix of debt and equity capital maintained by a firm with different sources of funds, particularly to the long-term funds. To them, it is a framework, which shows how equity and debt is used for financing firms operations. Pandey (2010) stated that capital structure involves the use of the fixed-charges sources of finance such as debt and preference capital along with the owners’ equity. The main objective of capital structure is to determine the optimal mix of debt and equity. Optimal capital structure is the combination of debt and equity that leads to the maximization of the value of the firm (Ageyi and Owuru, 2014). Aftab (2009) are of the opinion that companies need to identify their optimal capital structure and make effort to reach and keep it. In this study, leverage ratio will be used as a proxy for capital structure of the firm.

Foreign Ownership Structure and Capital Structure

Foreign share ownership is measured by the sum of percentage shareholding, directly and/or indirectly, by foreigners (Aftab, 2009). Foreign investors investing in brewery firms in Nigeria have the experience and motivation to influence managers to protect their investment. Foreign shareholders’ responsibility is to make sure that there is a high return on their investments (Le, 2015). Also, it is believed that foreign investors are at vantage position to access global information thereby being better equipped to interpret firm performance (Agrawal and Mandell, 1992). They have the experience and strong incentive to supervise managers’ activities to protect their portfolios (Le, 2015). Most studies suggest that there is a negative relationship between foreign ownership and capital structure, with the exception of the studies by Zou & Xiao (2006) and Gurunlu & Gursoy (2010). In their different studies, they hypothesized a positive effect of foreign ownership on capital structure but their results show a negative relationship between foreign ownership and capital structure.

In emerging markets like Nigeria, as a result of increasing foreign investment inflow, the influence of foreign investors on brewery firms’ activities in Nigeria is also increasing. Despite this increase, no research has been conducted to examine the relationship between foreign ownership and the capital structure of the brewery firms. Thus, this study hypothesized that:

\[ H_{05}: \text{Foreign shareholding has no significant relationship with the leverage of brewery firms in Nigeria.} \]
Direct Ownership Structure and Capital Structure

Direct ownership structure of a firm is the total shareholding percentage of both institutions and individual investors. It is defined as the total holding of control (voting) rights by different categories of shareholders. It is measured in percentage terms. Institutions can be contextualized as to mean government, families and corporate organizations while individual investors are any other individual outside the directors, managers and foreigners. Institutional shareholders invest in companies as representatives of other individual investors or their customers; with their major interest being to enhance a high return on investments of those investors. Prior studies on capital structure and its relationship with ownership structure are predominantly anchored on the assumption that a shareholder has direct ownership interest in such a way that his voting rights are in direct proportion to cash flow rights (Aftab, 2009). Different types of direct owner would utilize debt to accomplish various goals. An example is a family as direct owner of a firm would employ debt as protection to avoid takeover bid by other investors. Hence the analysis of direct ownership in this study would give deeper insight into the interaction of ownership structure with capital structure. Thus, this study proposed a hypothesis that:

**H0:** Direct shareholding has no significant relationship with the leverage of brewery firms in Nigeria.

Managerial Ownership Structure and Capital Structure

Managerial ownership is measured as the sum of percentage shareholding by managers and directors (insiders). Fama & Jensen (1983) were able to prove that the increase of managerial ownership leads to the increase in managerial entrenchment. It can thus be explained that the increase of the shareholdings by managers/directors will result in the increase influence on corporate performance by managers and a corresponding decrease of the external investors’ influence on financial performance (Quang & Xin, 2014). Therefore, managerial ownership is a special medium through which managers can entrench themselves. That is why Berger, Ofek & Yermack (1997) explained managerial entrenchment as managerial preference to eschew pressure from shareholders both from internal and external investors.

The correlation between managerial ownership and leverage is inconsistent and can be both positive and negative due to agency problems, control issues, employment risks or the managers’ view (Le, 2015). The positive influence of managerial ownership on leverage is believed to be explained by control issues, with debt as a medium to assist managers to divert share dilution, reinforce their control or resist takeovers Ghaddar (2003) and Kim & Sorenson (1986). Meanwhile, the relationship between managerial ownership and capital structure may be negative (Brailford, 2002). With the inconsistency in the findings of previous studies on the relationship/effects of managerial ownership and capital structure, we then hypothesize in this study as follows:

**H0:** Managerial shareholding has no significant relationship with the leverage of brewery firms in Nigeria.

III. Empirical Literature

Relationship between Foreign Ownership and Capital Structure

Li, Yue & Zhao (2009) conducted a study in non-publicly traded Chinese firms while Huang, Lin & Huang (2011) investigated Chinese listed firms from 2002 to 2005, and their findings revealed that foreign ownership is negatively related to all measures of leverage, including total debt, short-term debt and long-term debt divided by total assets. The result was explained by the fact that in China, foreign-owned firms usually enjoy lower corporate tax rates as incentives locally-owned firms; thus, there is the tendency that the foreign-owned firms would use less debt due to the low level of tax-shield saving.

Ezeoha & Okafor (2010) investigated the local corporate ownership and capital structure decisions in Nigeria with the aim of identifying the nature, degree and direction of the effects of certain classes of corporate ownership on capital structure decisions among firms specifically in Nigeria. The study sampled 71 listed firms in Nigeria Stock Exchange and the result indicate that discrimination between foreign owned and indigenous firms is a major determinant of financial leverage in Nigeria. The study recommends that the consistency of empirical results and capital structure theories across countries depend much on the dominant nature of corporate ownership structure. Dimitris & Maria (2010) examined the relationship between capital structure, ownership structure and firm performance using a sample of French manufacturing firms. The results indicate that concentrated ownership result to improved corporate performance by reducing agency costs while non-concentrated ownership structure is related to a high level of leverage in the firm.

Cheng & Tzeng (2011) used fixed effect model (FEM) and 3SLS to estimate the effect of ownership structure on leverage and firm performance in the electronics, textile and chemical industries in Taiwan from 2000 to 2009. The empirical results show that ownership concentration is positively related to leverage and firm performance for the electronics and textile industries while it is negatively related in chemical industries. Aftab (2009) examined the ownership structure, capital structure and firm performance in Vietnamese listed firms. The study used correlation analysis, pooled OLS, random effect and fixed effect regression to test the
hypotheses. There is a negative relationship between foreign ownership and capital structure. Shahar, Adzis & Baderi (2016) investigated the relationship between ownership structure and firm specific characteristics with capital structure of Malaysian public listed firms. By employing a total of 38 middle-capital firms for the period from 2008 to 2012, the results show that ownership concentration possess a negative relationship with leverage ratio, the measurement for capital structure.

**Relationship between Direct Ownership and Capital Structure**

The study by McConnell & Servaes (1990) revealed that the entrenchment of managers will be affected if institutional ownership is increased. The paper indicates that business performance is in a non-linear relationship with managerial ownership, but a positive linear relationship with institutional ownership. Han & Suk (1998) showed a positive relationship between institutional ownership and business performance (stock returns as a proxy), which confirms that institutional ownership has a negative effect on managerial control.

Ampenberger, Schmid, Achleitner & Kaserer (2009) examined how family firm characteristics affect capital structure decisions using Germany as an evidence of a bank-based economy. Using a special panel dataset of 660 publicly listed companies (5,135 firm years) in the broadest German stock index CDAX from 1995 to 2006. The study finds that family firms have significantly lower leverage ratios than non-family firms, not minding the definition of leverage used. Bodaghi & Ahadpur (2010) revealed that institutional ownership has positive relationship with capital structure. BlancaArosa, Iturralde & Maseda (2010) provide new evidence regarding the way in which ownership concentration influences non-listed firm performance focusing on the conflict between controlling and non-controlling shareholders, and differentiating between the behavior of family and non-family firms, using data from 586 non-listed Spanish firms. In first generation family firms, the classic owner-manager conflict is mitigated due to the large shareholder's greater incentives to monitor the manager. The empirical evidence shows that for family firms, the relationship between ownership concentration and firm performance differs depending on which generation of the family manages the firms.

Hanidullah & Shan (2011) investigated the impact of ownership structure on capital structure and firm value using a random sample of 80 firms listed on the Karachi Stock Exchange, Pakistan from 2003 to 2009. The researchers used pooled OLS, fixed effects, and random effects models on the panel data to investigate the association between ownership variables and leverage. Results of the study indicate the existence of negative association between the institutional ownership and leverage. Also, another study by Liu, Tian & Wang (2011) showed that the regional institutional environment index has a statistically and significantly negative relationship with leverage ratio and long-term debt ratio of Chinese listed firms. The results also show that state-owned enterprises (SOEs) have higher leverage ratios than non-state owned enterprises.

Ageyi & Owuru (2014) empirically examined the relationship between corporate governance, ownership structure and capital structure using a sample of 8 Ghanaian listed manufacturing companies for the period 2007-2011 by employing multivariate regression analysis. The results show that institutional shareholding is significantly and positively correlated with capital structure. Ahsan (2014) examined the relationship between the ownership structure and capital structure in an emerging market like Pakistan for the manufacturing sector. The period of study is 2006-2009 and data was collected from 121 randomly selected KSE listed manufacturing companies and is analyzed using fixed effect regression model approach. The findings show a highly significant negative relationship between ownership concentration and capital structure. However, the institutional shareholding relationship with capital structure is found to be insignificant.

**Relationship between Managerial Ownership and Capital Structure**

Kim & Sorensen (1986) compared long-term debt to total capitalization of companies that have high managerial ownership with those that have low managerial ownership. Using analyses of variance and regression techniques, the result indicates that firms with higher managerial ownership have greater leverage levels than those with lower managerial ownership. Han & Suk (1998) showed that increased managerial ownership results in increased business performance (using stock returns as proxy) of a firm. Meanwhile, an excessive managerial ownership composition will affect business productivity negatively. Wiwattanakantang (1999) with a sample of Thai firms; Bokpin & Arko (2009) with a sample of firms listed on the Ghana Stock Exchange; and Jiraporn & Liu (2008) using firms in the United States, in their different studies found that leverage is positively related with the level of managerial shareholdings, measured by shares held by CEOs or directors. This findings support the debate that high managerial ownership helps managers to employ more debt to ensure high return on investments of investors, and consequently increase the value of their own wealth.

Short, Keasey & Duxbury (2002) examined the influence of ownership structure on the capital structure of United Kingdom firms. The findings of their study revealed a positive relationship between managerial ownership and leverage ratio. Another study by Brailford (2002) investigated the relationship between ownership structure and capital structure of firms. The findings show that the managerial ownership...
and leverage may be related in nonlinear fashion but in a negative pattern. The study also finds that low managerial ownership composition results to low level of agency conflicts and higher level of leverage.

Vong & Lin (2007) examined the effect of ownership structure and capital structure on private companies’ performance in China. The results show that companies with higher percentage of institutional ownership have better financial performance (measured by profitability). King & Santar (2008) investigated how family ownership affects the performance and capital structure of Canadian firms. The findings of the study show that concentrated ownership of companies significantly affects corporate performance. Arshad & Safdar (2009) in their study conducted in Pakistan discover that managerial ownership significantly affects capital structure represented by debt to equity ratio. Aftab (2009) investigated the impact of equity ownership structure on capital structure and the results show that equity holding by insiders is inversely related to debt ratio. This implies that managerial shareholdings work as a substitute to the disciplinary role of debt.

Ezeoha & Okafor (2010) examined the impact of managerial ownership on capital structure of 71 firms in Nigeria. Using the pooled regression model, it was found that there exists a positive relationship between managerial ownership and leverage. Also, the results indicate that discrimination between foreign owned and indigenous firms is a major determinant of financial leverage in Nigeria. Abosede & Kajola (2011) examined the relationship between firms’ ownership structure and financial performance in Nigeria, using a sample of 30 listed companies for the period of 2001 to 2008. Using pooled OLS as to estimate the model, and after controlling for 4 firm-specific characteristics, the results indicate a negative and significant relationship between managerial ownership structure and firm financial performance (using ROE as a proxy). Another study by Hanidullah & Shan (2011) investigated the impact of ownership structure on capital structure and firm value using a random sample of 80 firms listed on the Karachi Stock Exchange, Pakistan from 2003 to 2009. The researchers used pooled OLS, fixed effects, and random effects models on the panel data to investigate the association between ownership variables and leverage. Results of the study indicate that managerial ownership does not show statistically significant association with leverage.

Ageyi & Owuru (2014) empirically examined the relationship between corporate governance, ownership structure and capital structure for Ghanaian listed manufacturing companies for the period 2007-2011 by using multivariate regression analysis. Managerial shareholding is significantly and positively correlated with leverage ratio, which is consistent with corporate governance philosophy. Karati (2014) examined the effect of ownership structure on leverage of non-financial firms in developing countries using Turkey as a case. Using regression models, it was found that at low level of ownership of managers, leverage is positively related to managerial ownership but at high level of managerial ownership the leverage is negatively related to managerial ownership.

Le (2015) examined the ownership structure, capital structure and firm performance in Vietnamese listed firms. The study used correlation analysis, pooled OLS, random effect and fixed effect regression to estimate the model. The research found a positive and statistically significant relationship between firm leverage and managerial ownership.

IV. Theoretical Framework

This study is anchored on the trade-off theory as developed in Kraus A. and Litzenberger in the year 1973. The modern theory of capital structure began with the celebrated papers of Modigliani & Miller (Paseda, 2021). The first version of the theory evolved with the addition of company income tax by Meyers in 1984 to the original irrelevance proposition of Modigliani-miller theorem, the benefit for debt was established because it provides tax haven for earnings. Bearing in mind the linearity in the objective of the firm, a total debt financing is implied because the cost of debt cannot be offset (Mursalim & Kusuma, 2017; Gajdka & Szyma’nski, 2019).

The trade-off theory refers to the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits. In the opinion of Myers (1984), a firm that adopts the trade-off theory sets a target debt-to-value ratio and eventually acts in the direction of the target. Murray and Vidhan (2005) stated that the target is determined by balancing debt tax shields against costs of bankruptcy. The assumptions of the Myers trade-off theory are:

1. A decision maker managing a firm evaluates the alternative leverage plans as par the cost and benefit
2. That an interior solution is achieved to reach the optimum managerial costs and marginal benefits. 

Therefore, the trade-off theory refers to the idea that a company chooses how much debt finance and how much equity finance to use by balancing the costs and benefits.

The investors and business managers are mostly interested in maximizing returns and also minimizing the risk. Braitland & Hornbrunk (2013) observed that the risk return trade-off is interested in the amount of risk that one is willing to bear with it and equally in good terms with the returns made from the investment. However, the impact of risk is not clear, even if uncertain condition is assumed to be normally distributed. To that effect therefore, Bradley, Jarrell & Kim (1984) in Murray & Vidhan (2005) revealed that the correlation between the debt ratio and volatility is negative.
The trade-off theory is one of the imperfect market theories (Kruk, 2021). As noted in Atseye, Edim & Eke (2014), the trade-off theory suggested that a firm’s target leverage is driven by three competing forces of taxes, costs of financial distress (bankruptcy costs) and agency conflicts, which give rise to agency cost. This however explains further why companies don’t have 100% debt or equity financing.

The relevance of this theory can be ascertained by relating the risk and return trade-off to capital structure policies of firm. The theory maintain that for a firm to reach its optimal capital structure, the firm need to balance these opposing forces that is, the benefits of debt (tax shields) and the cost of debt (expected bankruptcy). Therefore, determining the percentage ratio of debt and equity in the financial structure of the firm forms the basis of the trade-off theorist. However, trade-off theory of capital structure can also include the agency costs arising from agency conflicts between managers and shareholders, and that of debt holders and shareholders. Therefore, the trade-off theory is relevant to this study in that (i) In terms of controlling agency cost, managerial ownership seems to serve as a substitute to debt. As managerial ownership rises, the need for debt as a disciplining device reduces. (ii) There is every tendency that managers would do anything to shield their non-diversifiable human capital which would be endangered by bankruptcy risk as a result of debt issuing. Thus, the managers prefer minimal level of debt. (iii) Managers would like to have a less performance pressure condition that accompanied a low debt repayments circumstance. (iv) When there is no monitoring by debt holders, managers would extract private benefits of control. Therefore managers prefer less debt scenario, which is the consciousness that the trade-off theory try to raise.

V. Methodology

Research Design

The study adopted an ex-post fact design. This type of design is used when the intention of the researcher is to ascertain the relationship between the independent variable and the dependent variable with a view to establishing a causal link existing therein Onwumere, Onodugo & Imo (2013). The variables under study were categorized into two namely: the dependent variable (capital structure with leverage ratio as the proxy) and the independent variables (ownership structure proxied by foreign ownership, direct ownership, and managerial ownership), with other control variable such as firm size, board size, and return on assets. The data used was collected from the Nigeria Stock Exchange (NSE) statistical bulletin/fact-book and the audited annual financial statements of the brewery firms under study for the period 2006 - 2020.

The population of the study is the brewery firms listed in the NSE and they include - Champion Breweries Plc, Guinness Nigeria Plc, International Breweries Plc, Jos International Breweries Plc, Nigeria Breweries Plc, and Premier Breweries Plc. Nigerian Breweries and Guinness Nigeria are the two major players in the industry with Nigerian Breweries leading the market with about 65% market share while Guinness Nigeria follows with about 25% [56]. Hence, this study focused on these two giants that constitute 90% market share of the brewery firms in Nigeria as the sample.

Variable Operationalization and Measurement

Dependent variable: In this study, capital structure (using leverage ratio as a proxy) is our dependent variable. The leverage ratio is measured as total debts divided by total assets.

Independent variables: Ownership structure is used in this study as the independent variable. Below are the categories of ownership structure that are used as proxy.

- Firm ownership (FSHR): This means foreign shareholding, which is used in this study as a proxy for firm ownership structure. The brewery firms in Nigeria are dominated in terms of shareholding by foreign shareholders like Heineken Brouwerijen BV Global from Netherlands, controlling 71% of the Nigeria brewery market; Diageo Group from United Kingdom controlling 27% of the Nigeria beer market; and SABMiller “a South African brewery giant”. Therefore, the study measured foreign ownership composition of Nigeria brewery firms using the sum of percentage of foreign shareholding (FSHR) as given in their annual report.

- Direct ownership (DSHR): This consists of the institutional shareholdings, families, government and individual shareholdings (percentage as given in the annual report).

- Managerial Ownership (MSHR): This is made up of the sum of percentage shareholdings by the insiders (CEOs, directors, managers).

Control variables:

- Firm size (FSIZE): This is the size of the firm measured as the natural logarithm of total assets.

- Board size (BSIZE): This is measured as the natural logarithm of the number of directors (both male and female) in the board

- Return on Assets (ROA): It is measured as a ratio of Profit after Tax to Total Asset

Regression Model Specification
The regression model used for this study is as shown below.

\[
\text{LEV} = \beta_0 + \beta_1 \text{FSHR} + \beta_2 \text{DSHR} + \beta_3 \text{MSHR} + \beta_4 \text{FSIZE} + \text{FSIZE} + \text{FSIZE} + \text{FSIZE} + \varepsilon
\]

Where,

- LEV = firm’s leverage measured as total debt to total assets
- FSHR = foreign Shareholding (percentage as given in the annual report)
- DSHR = Direct ownership - institutional and individual shareholdings (percentage as given in the annual report)
- MSHR = managerial shareholding (percentage as given in the annual report)
- FSIZE = natural logarithm of total assets
- BSIZE = natural logarithm of the number of directors in the board
- ROA = measured as a ratio of Profit after Tax to Total Asset
- \(\varepsilon\) = stochastic error terms

VI. Empirical Results And Discussions

Table 1: Descriptive Analysis of the Variables across Companies

<table>
<thead>
<tr>
<th></th>
<th>LEV</th>
<th>FSHR</th>
<th>DSHR</th>
<th>MSHR</th>
<th>FSIZE</th>
<th>BSIZE</th>
<th>ROA</th>
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<tbody>
<tr>
<td>Mean</td>
<td>0.596818</td>
<td>0.574545</td>
<td>0.326364</td>
<td>0.099091</td>
<td>1.53E+08</td>
<td>13.22727</td>
<td>23.38227</td>
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<td>Median</td>
<td>0.575000</td>
<td>0.540000</td>
<td>0.360000</td>
<td>0.080000</td>
<td>1.11E+08</td>
<td>13.50000</td>
<td>21.98000</td>
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<tr>
<td>Maximum</td>
<td>0.810000</td>
<td>0.700000</td>
<td>0.430000</td>
<td>0.200000</td>
<td>3.67E+08</td>
<td>15.00000</td>
<td>65.88000</td>
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<tr>
<td>Minimum</td>
<td>0.490000</td>
<td>0.340000</td>
<td>0.110000</td>
<td>0.010000</td>
<td>59850189</td>
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<td>Std. Dev.</td>
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<td>0.065663</td>
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<td>0.065604</td>
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<td>Skewness</td>
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<td>Kurtosis</td>
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<td>2.866922</td>
<td>3.656876</td>
<td>1.928641</td>
<td>3.006529</td>
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<td>Jarque-Bera</td>
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<td>1.976417</td>
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<td>Probability</td>
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<td>2.180000</td>
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<td>Sum Sq. Dev.</td>
<td>0.331077</td>
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<td>0.163109</td>
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</table>

Sources: Authors Computation using E-view 8.0

Table 1 reports the company-specific parameters’ means (LEV, FSHR, DSHR, MSHR, FSIZE, BSIZE and ROA) computed from e-view 8.0. There is cross company variation. In consideration of the result, ROA has the highest mean score of 23.38227 while MSHR has the lowest mean score of 0.099091. The maximum and minimum values of LEV are 0.810000 and 0.490000 respectively. The level of foreign shareholdings (FSHR) in terms of maximum and minimum value is 0.700000 and 0.430000 respectively. The maximum and minimum values of direct ownership (DSHR) are 0.430000 and 0.110000. The managerial shareholding (MSHR) measured as a percentage given in the annual report stood at 9.91% on average and this shows that managerial shareholders exerts the low level of influence on brewery firm’s leverage in Nigeria. The level of firm size (FSIZE) measured as the ratio of the total assets stood at 15.3% on average. This might suggest that on average, firm size account for only 15.3% change in brewery firm capital structure in Nigeria. The level of board of directors’ size (BSIZE) stood at 13.23% on average. It means that board of directors’ size account for only 13.23% change in brewery firm capital structure in Nigeria. In the light of these observations, it is now obvious that a model that can take into account the specific nature of the brewery firms is needed for analysis.

Robustness Test
Robustness test was carried out on the panel regression results. The justification for carrying out robustness test is to ascertain whether the addition of external instruments to the panel regression model will produce similar results. Therefore, robustness test was conducted as additional external instruments were included in the dynamic model. The results of the robustness test were presented in Table 2 below.
Table 2: Robustness Test Result

<table>
<thead>
<tr>
<th>Series</th>
<th>Pooled OLS (1)</th>
<th>Random E. OLS (2)</th>
<th>Diff-1 GMM (3)</th>
<th>Diff-2 GMM (4)</th>
<th>System GMM (5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEV(-1)</td>
<td>0.42647</td>
<td>0.04529</td>
<td>0.45261</td>
<td>0.46452</td>
<td>0.23145</td>
</tr>
<tr>
<td>C</td>
<td></td>
<td></td>
<td></td>
<td>[0.0000]**</td>
<td>[0.0001]**</td>
</tr>
<tr>
<td>FSHR</td>
<td>-0.53097</td>
<td>[0.0000]**</td>
<td></td>
<td>[0.0000]**</td>
<td></td>
</tr>
<tr>
<td>DSHR</td>
<td>-0.05770</td>
<td>[0.0001]**</td>
<td>0.04713</td>
<td>0.03382</td>
<td>-0.04897</td>
</tr>
<tr>
<td>MSHR</td>
<td>-0.07158</td>
<td>[0.0159]**</td>
<td>-0.06968</td>
<td>-0.39556</td>
<td>-0.31827</td>
</tr>
<tr>
<td>FSIZE</td>
<td>0.07649</td>
<td>[0.0169]**</td>
<td>0.07723</td>
<td>0.16321</td>
<td>-0.00461</td>
</tr>
<tr>
<td>BSIZE</td>
<td>-0.07634</td>
<td>[0.0100]**</td>
<td>-0.08536</td>
<td>-0.49556</td>
<td>-0.41827</td>
</tr>
<tr>
<td>ROA</td>
<td>0.08762</td>
<td>[0.0431]**</td>
<td>0.06673</td>
<td>0.26321</td>
<td>-0.00647</td>
</tr>
<tr>
<td>Hansen J-test</td>
<td>0.158837</td>
<td>[0.4531]**</td>
<td>0.153485</td>
<td>0.105452</td>
<td>0.16171</td>
</tr>
<tr>
<td>AR(1)</td>
<td>-</td>
<td></td>
<td></td>
<td>[0.30818]</td>
<td>[0.2244]</td>
</tr>
<tr>
<td>AR(2)</td>
<td>-</td>
<td></td>
<td></td>
<td>[0.9833]</td>
<td>-</td>
</tr>
<tr>
<td>Observations</td>
<td>22</td>
<td>22</td>
<td>20</td>
<td>18</td>
<td>16</td>
</tr>
<tr>
<td>Companies</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
</tbody>
</table>

Sources: Author’s computation from E-view 8.0

** indicates 5% level of significance

In Table 2, LEV(-1) was found to exert significant influence on the dependent variable in column 3 (System GMM) and this is confirmed by the p-value of [0.0000]. However, it was not same in column 5 (System GMM) in Table 2. This could as well be attributed to the presence of added instruments in the model. The level of foreign shareholdings (FSHR) was confirmed to significantly affect LEV as seen in Table 2 above. This is confirmed by its’ P-value [0.0066] in column 5 (System GMM) of Table 2. The direct ownership (DSHR) was found to significantly influence LEV as confirmed by the P-values of [0.0068]. It indicates the significant influence of direct ownership (DSHR) on firms leverage (LEV) in Nigeria. MSHR was justified by the robustness test to have an inverse Relationship with LEV. This is confirmed by the coefficient estimates of the parameter found in Table 2 to be -0.39556, -0.31827 and -0.0195 in Diff-1 GMM, Diff-2 GMM and System GMM respectively. Also in the robustness test, FSIZE has coefficient estimates of 0.16321, -0.00461 and -0.28331 in Diff-1 GMM, Diff-2 GMM and System GMM respectively. This result is not consistent with the Trade-off theory, which predicts that as the firm grows in size the proportion of bankruptcy cost goes down. Therefore smaller firms should have low leverage as compared to their large counterparts. Our results show that firm size has a significant but inverse relationship with firm leverage. The same inverse relationship was confirmed to be borne between BSIZE, ROA and LEV.

Correlation Analysis

<table>
<thead>
<tr>
<th>Variables</th>
<th>LEV</th>
<th>FSHR</th>
<th>DSHR</th>
<th>MSHR</th>
<th>FSIZE</th>
<th>BSIZE</th>
<th>ROA</th>
</tr>
</thead>
<tbody>
<tr>
<td>LEV</td>
<td>1.00000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSHR</td>
<td>-0.134806</td>
<td>1.00000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DSHR</td>
<td>0.874990</td>
<td>-0.231896</td>
<td>1.00000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSHR</td>
<td>0.620874</td>
<td>0.108915</td>
<td>0.548457</td>
<td>1.00000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FSIZE</td>
<td>0.987779</td>
<td>-0.135768</td>
<td>0.870205</td>
<td>0.582320</td>
<td>1.00000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSIZE</td>
<td>0.672948</td>
<td>-0.053996</td>
<td>0.677631</td>
<td>0.883602</td>
<td>0.654631</td>
<td>1.00000</td>
<td></td>
</tr>
<tr>
<td>ROA</td>
<td>0.886179</td>
<td>-0.108289</td>
<td>0.763853</td>
<td>0.582393</td>
<td>0.845071</td>
<td>0.676310</td>
<td>1.00000</td>
</tr>
</tbody>
</table>

Source: Author’s Computation using E-View 8.0

Correlation is significant at the 0.05 level.

The correlation matrix above indicates that the independent variable, foreign shareholdings, has a significant and negative relationship with firm leverage (LEV).

This mean that all other variables are positively correlated which implies that changes in the independent variables (DSHR, MSHR, FSIZE, BSIZE and ROA) will result in an identical change in the dependent variable (LEV) while the negative correlation of the one independent variables means that changes in
the independent variable (FSHR) will result in an identical change in the dependent variable (LEV) but in a negative sign. Furthermore, the results also show a relatively strong correlation between independent variables and firm leverage in Nigeria except foreign shareholdings which is in line with the negative result we found. The result seems to suggest that the firm’s ownership structure will increase the capital structure of the brewery firms in Nigeria.

Regression Results

Table 4: Baseline Panel Regression Results

<table>
<thead>
<tr>
<th>Series</th>
<th>Pooled OLS (1)</th>
<th>FE OLS (2)</th>
<th>Random E. OLS (3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>C</td>
<td>0.6682 [0.0000]**</td>
<td>0.40567 [0.0000]**</td>
<td>0.3888 [0.0000]**</td>
</tr>
<tr>
<td>FSHR</td>
<td>-0.54526 [0.39024]**</td>
<td>-0.46126 [0.7054]</td>
<td>-0.69357 [0.6222]</td>
</tr>
<tr>
<td>DSHR</td>
<td>-0.38117 [0.0000]**</td>
<td>-0.04717 [0.0000]**</td>
<td>-0.06123 [0.0000]**</td>
</tr>
<tr>
<td>MSHR</td>
<td>0.78456 [0.0040]**</td>
<td>0.92312 [0.0005]**</td>
<td>0.27112 [0.0100]**</td>
</tr>
<tr>
<td>Observations</td>
<td>22</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.579</td>
<td>0.685</td>
<td>0.261</td>
</tr>
<tr>
<td>F-Value</td>
<td>8.4730</td>
<td>6.5187</td>
<td>9.1193</td>
</tr>
<tr>
<td>Hausman Test</td>
<td>0.81283 P-Value = [0.0001]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Author’s Computation from E-view 8.0

** indicates 5% level of significance

In Table 4, we considered the pooled OLS result, fixed effect OLS result and random effect OLS result in order to allow for heterogeneity or individuality among the companies by allowing to have own intercept value. This means that the intercept may differ across companies, but intercept does not vary over time, that is, it is time invariant. In columns 1, 2 and 3 (Pooled OLS, Fixed Effect Model and Random Effect Model) of Table 4, the R-squared of 0.579, 0.685 and 0.261 indicates that 57%, 68% and 26% of the total variation in firm leverage (LEV) is explained by the explanatory variables such as FSHR, DSHR, and MSHR.

We applied Hausman test to check which model (Fixed Effect or Random Effect) is suitable for the estimation. Hausman test null hypothesis states that random effects model is appropriate while its alternative hypothesis states that fixed effects model is appropriate. If we obtain statistically significant P-value, we use fixed effect model, otherwise random effect model. As observed from Table 4, the Hausman test statistics P-value is 0.0004. It implies that its P-value is significant because it is less than 5% (0.05) chosen level of significance. The null hypothesis was rejected and we conclude that fixed effect is desirable for prediction.

The fixed-effect model shows that 68.5% of the total variations in firms leverage (LEV) are accounted for, by the explanatory variables (Foreign Shareholding (FSHR), Direct Ownership (DSHR), and Managerial Shareholding (MSHR)). This is evidenced from the R-squared value of 0.6850. However, the result indicates that direct ownership (DSHR) and managerial shareholding (MSHR) remain significant parameters in measuring capital structure (LEV) of the selected listed brewery firms in Nigeria. This means that there is significant relationship between ownership structure and capital structure in the Nigeria Listed Brewery Firms. The results are consistent with the findings of Han & Skuk (1998); Jirapon & Liu (2008); Bodaghi & Ahmadpur (2010) and Ahsan (2014) on the positive relationship of ownership structure and capital structure. On the other hand, Ahsan (2014) show a highly significant negative relationship between ownership concentration and capital structure while the institutional shareholding relationship with capital structure was found to be insignificant.

However, foreign shareholding (FSHR) indicates insignificant and negative relationship with firms leverage (LEV) in Nigeria. The results are consistent with the findings of Li, et al (2009); Huang, et al (2011); Le (2015) and Shahar, et al (2016).

VII. Conclusion

In this study the relationship between ownership structure and capital structure of brewery firms in Nigeria has been analyzed. A fixed effects model has been used on panel data of the sampled firms. Ownership structure has been explored in three dimensions: foreign shareholdings, direct ownership, and managerial shareholdings whereas leverage ratio was used as a proxy for capital structure. Our results show that there is significant positive relationship between ownership structure and capital structure in the Nigeria Listed Brewery Firms and it provides evidence against the entrenchment hypothesis in the finance literature. However, foreign shareholding indicates insignificant and negative relationship with firms leverage in Nigeria brewery firms.
The findings have considerable implication as it relates to the capital structure debate. Through the argument for a nexus between the ownership structure and capital structure and through empirical support, this study adds to the existing literature in understanding the variation in capital structure. The practical import is that ownership structure is linked to the financing strategy of an entity, thus investment decisions pertaining the issue of shares should put into consideration a range of implications before embarking on such investment.

VIII. Recommendations

The findings from this research suggest some recommendations for policymakers and Nigerian brewery firms. Thus, the study offers the following recommendations:

1. The legislative arm of the government should enact relevant laws to protect the interest of non-controlling shareholders in firms. The enactment should be in the form of mandatory appointment of non-controlling shareholders in audit committee and the board of directors.

2. Investment decisions by management of a firm relating to alteration in the ownership structure, such as issue of equity, should put into consideration a range of implications on the optimal leverage level before embarking on such decisions.

3. The corporate law authorities should come up with such regulations that will discourage the equity ownership concentration in few hands because that induces entrenchment effect which negatively impacts the corporate performance of the brewery firms in Nigeria.

The study hereby recommends further research to be conducted in this neglected field of corporate governance as it would lend scholastic assistance to policy makers and regulators. The study should cover all listed firms on the Nigeria Stock Exchange in order to aid generalization since our study only considered brewery firms in Nigeria.

References


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On The Nexus between Ownership Structure And Capital Structure In The Listed Brewery ...