EFFECT OF FINANCIAL LEVERAGE ON SHAREHOLDER’S RETURNS IN A DYNAMIC BUSINESS ENVIRONMENT

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Abstract

Modigliani and Miller’s (1963) paper made revelations on the importance of leverage in reducing tax payment obligations. Shareholders’ return may affect the risk premium associated with the use of leverage. However, the literature on leverage and shareholder returns relationships for a dynamic business environment such as Nigeria is still growing. The one-step differenced generalised method of moments (GMM) estimator is used in analysing an unbalanced panel data of 18 insurance firms for the period 2008-2017. The data used are gleaned from the annual reports of the sampled insurance companies. Results showed that the debt ratio has a significant negative effect on shareholders’ returns. However, the results become positive and significant when debt-equity and interest coverage ratios are used as the leverage ratio. This study supports the pecking order theory. It concluded that the effect of financial leverage on shareholders’ returns depends largely on the decomposition of financial leverage; hence both theories examined are relevant. This study recommended, among other things, that there is a need for the management of insurance companies to reassess the costs and risks associated with financial leverage when financing decisions have to be made. Furthermore, high indebtedness should be trimmed to reduce its negative influence on shareholders’ returns by ensuring an appropriate finance option, which will be in accordance to maximise shareholders’ wealth.

Keywords: Financial Leverage, GMM, Shareholders’ Return, Financial Performance, Nigeria

Authors’ individual contribution: Conceptualization - L.O.; Methodology - T.O.O.; Investigation - T.O.O.; Resources - L.O.; Writing - Original Draft - L.O.; Writing - Review & Editing - B.O.A.

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1. INTRODUCTION

Business firms need funds to operate successfully and to expand their activities. In other words, firms need to adequately provide the required funds to finance their operations and activities to make profits, stay in business, and to maximise the wealth of their owners. Therefore, myriads of finance sources are available with which a company can fund its prospective investment. These financing sources can be categorised into two types, namely: a) the internal financing sources, which include reserves and retained earnings, and b) external financing, which provides for long-term loans, bond issuance, ordinary and preferred stock issuance. The latter are long-term sources of finance (Adenugba, Ige, & Kesinro, 2016). The choice of financing for the firm, therefore, describes the capital structure that it adopts.
To reach an optimal capital structure, a firm would have to choose the best financing sources so that it can make suitable financing decisions that would allow it to raise positive returns for its shareholders. Financial leverage, a part of the capital structure, refers to the extent to which fixed income-securities (debts) are used by the firm with such debt having fixed obligations of interest payment (Adenuga et al., 2016). Modigliani and Miller (1958) note that financial leverage is the degree to which a firm has funded its business operations using financial resources that are sourced from outside the business. Financial managers are expected to choose the best option for given resources to be funded and strike the right balance that can reduce the cost of the business and increase earnings for the shareholders simultaneously (Ahmed, Awais, & Kashif, 2018). There are different views regarding the arguments on the optimal capital structure that a firm should have. For instance, Owolabi and Inyang (2013) argue that the ideal position can be determined by analysing the trade-off between bankruptcy cost and the tax advantage that firms can save through the charging of interest expenses. On the other hand, Enkeve, Agi, and Eziedo (2014) opine that an optimal level of capital structure should provide the ability to utilise the firms’ assets adequately.

A firm can be either highly levered (having more debt in its capital structure than equity) or lowly levered (when it has more equity than debt in its capital structure). Levered firms usually have additional funds available to them to finance operations and even expand compared to the unlevered firm, which solely relies on equity finance (Strebulaev & Yang, 2013). Financial leverage increases as the fixed financial expenses of a firm increase; that is, interest expenses increase with a higher amount of debt been incurred. Therefore, as the level of debt relative to equity increases, a small percentage change in earnings before interest and tax (EBIT) will lead to a large percentage change in net income.

A debt-focused firm in its capital structure will enjoy the benefits of tax savings since interest are paid before tax is deducted from the firm’s income. Financial leverage is a financial tool that is widely used by financial managers to bring about an improvement upon the firm’s rate of return and its value. However, financial leverage also creates a financial risk to the company, especially when highly levered firms are not able to make sufficient EBIT that will help meet the shareholders’ demand for higher returns (Salman & Hassan, 2016). These firms might have to liquidate since it is difficult for them to neither meet reoccurring interest obligations nor finance other arising expenses. The use of leverage may also expose ordinary shareholders to financial risk when the firm has incurred losses, and this brings high volatility in the stock price of the firm. In contrast, ordinary shareholders may have to bear the brunt by receiving dividends at a future date so that preferred shareholders can receive their dividend payment at the current period.

The excessive use of financial leverage on the capital structure of limited liability companies around the world had occurred partly as a result of the global financial crisis (Matemilola, Bany-Ariffin, & Azman-Saini, 2012). Based on theoretical links, the effect of financial leverage on shareholders’ return does not appear to be a settled issue. In assuming the existence of a perfect market, Modigliani and Miller (1958) argue that leverage is entirely irrelevant to the firm’s cost of capital. Their first proposition was based on certain assumptions in the absence of market imperfections, for instance, it assumes the absence of taxes that exist in the real world; this makes leverage decisions a relevant one. For this reason, the traditionalists also argue that there exists an optimal leverage level that can balance the benefits from the use of leverage against the associated deadweight bankruptcy cost (Gordon, 1959; Lintner, 1956). The second proposition of Modigliani and Miller (1963), however, underlines the relevance of leverage, but that the rising cost of equity easily offsets the benefits of tax savings from leverage. This implies that leverage increases risk premium, allowing shareholders to demand a higher return on their investments (Abor, 2005); hence the required return of a shareholder is an increasing function of leverage.

Existing research on the topic investigated has provided somewhat conflicting results and inconclusive evidence. The propositions of the early studies (for instance, Modigliani and Miller, 1958) were derived from a limited sample size. However, subsequent empirical studies that used a larger sample size showed different results. Specifically, several studies showed that leverage is positively related to the returns of shareholders (Akhtar, 2012; Akhtar, Javed, Maryam, & Sadia, 2012; Al-Hassan & Gupta, 2013; Ayodele, 2013; Bello, 2014; Gomes & Schmid, 2010; Mahdi & Kumars, 2009; Matemilola, Bany-Ariffin, & Azman-Saini, 2013; Matemilola et al., 2012; Salman & Hassan, 2016). Other studies revealed that leverage is negatively related to returns (Abor, 2005; Akande, 2014; Dimitrov & Jain, 2008; Penman, Richardson, & Tuna, 2007; Mehta, 2014; Niruiah et al., 2014). Some studies even documented that there is no relation between leverage and the returns of shareholders’ (Pachori & Totala, 2012). For this reason, the results from previous studies on the relationship between shareholders’ returns and leverage are inconsistent and conflicting, suggesting the need for further research, especially in a country with a growing capital market like Nigeria. Against this backdrop, this study thoroughly investigates the effects of financial leverage on shareholders’ returns for a sample of listed insurance companies in the Nigerian financial sector.

Asides the inconclusiveness of the relationship between financial leverage and shareholders’ returns highlighted above, it is observed that firms today operate in a highly dynamic business environment because rapid economic changes and business cycles challenge them. This situation suggests that a study on the relationship between shareholders’ returns and leverage can best be captured using a dynamic model, which may result in a reverse causality between shareholders’ returns and leverage. Matemilola et al. (2012) and Ojo (2012) are the few known African studies that used a dynamic model to test the relations between shareholders’ returns and leverage. However, most existing studies in Nigeria on the topic under investigation (Akande, 2014; Bello, 2014; Salman & Hassan, 2016) used the pooled
least squares estimator, which does not take care of the dynamic nature of the business operating environment. To fill these gaps, this study specifies a dynamic model to capture the effect of financial leverage on shareholders’ returns. Besides, three leverage indicators are used to determine the robustness of the results.

Summarily, this study investigates the relationship between financial leverage and shareholders’ return of listed insurance companies in the Nigerian financial sector using three different financial leverage variables, namely debt ratio, debt-equity ratio, and interest coverage ratio.

The remainder of the study is segmented as follows: Section 2 reviews past researchers’ works; Section 3 discusses the research methods; Section 4 deals with empirical results and findings, while Section 5 gives the concluding remarks.

2. LITERATURE REVIEW

2.1. Conceptual issues

2.1.1. Financial leverage and shareholders’ return

Financial leverage describes what amount of debt has been used in a firm’s capital structure (Adenugba et al., 2016; Mehta, 2014). Financial leverage is a measure of the magnitude to which firms make use of borrowed funds (debts) to finance its assets. The interest on the debt is fixed irrespective of firms’ rate of return on assets. Financial leverage is used primarily by a company desiring to magnify the shareholders’ return under favourable economic conditions (Enekwe et al., 2014). On the other hand, financial managers seek to achieve several financial objectives; one of these objectives is the maximisation of shareholders’ returns. Shareholders’ return refers to the return on the owners’ equity, which represents their stakes in an investment. Shareholders’ are expected to demand higher returns to compensate them for assuming additional financial risks as a firm decides to raise leverage level (Matemilola et al., 2012). Shareholders’ return is an idea associated with the efficiency of different organization’s stocks and shares over a specified period.

2.2. Theoretical review

Three theories are related to the subject of discussion. However, the pecking order theory appears as the most relevant to this study because insurers may have to order the financing options available to them, starting from the cheaper internal financing before considering the mix of equity and debt financing.

2.2.1. Modigliani and Miller’s theory

The capital structure appears irrelevant, according to Modigliani and Miller (1958). It assumes that a perfect market exists, with no consequence of bankruptcy and agency costs nor added benefits of tax savings, making firms’ value remain unchanged. It also stresses that cheaper debt results in risk exposure, which forces shareholders’ to demand higher returns. The theory displaces the relevancy of leverage, based on the notion that its revenue-generating operating assets wholly determine the performance of a firm. Following the presence of several market imperfection in the real world, such as taxes, asymmetric information, agency cost, and so forth, leverage is relevant for the value maximisation of a firm. This subsequently made Modigliani and Miller (1963) recognise that leverage can reduce the payment obligations related to corporate tax. This corrective study showed that leverage is positively related to shareholders’ return since leverage will increase risk premium; shareholders also demand a higher investment return.

2.2.2. Trade-off theory

The trade-off theory has two versions: the static and dynamic trade-off theory. The static trade-off theory was propounded by Myers (1984) and espoused by Myers and Majluf (1984). It assumes the need for a firm to strike a balance between equity and debt financing by weighting bankruptcy costs and benefits of tax shields from debt, amongst other available sources of finance. The theory also assumes that firms with few tangible assets would have an asymmetric information problem; thus, they accumulate more debt over time, becoming highly levered. The static version posits a positive relationship between the firm’s leverage and shareholders’ return.

On the other hand, the dynamic version developed by Strebulaev (2007) assumes that the existence of shocks may shift the firm away from its target debt level. To get back to the desired debt level, firms will incur adjustment costs (Ahmad & Etudaiye-Muhtar, 2017); ironically, huge adjustment costs may also prevent such a firm from attaining its desired leverage ratio. The dynamic version also posits a positive relationship between the firm’s leverage and shareholders’ return.

2.2.3. Pecking order theory

The pecking order theory was put forward by Myers and Majluf (1984). The theory states that financing of a firm’s investment is best achieved by following a hierarchical order, defined by orientating, first, to the cheap internal financing (retained earnings) followed by expensive external funds. For the latter, debt (leverage) should come before equity capital. It assumes that firms’ decision of capital structure is a function of the relative availability and cost of finances. It contends that firms will always resort to the cheapest source of funding for their operations. It portends that firms with few investment opportunities and substantial free cash flow will have low (or even negative) debt ratios because the cash will be used to pay down the debt and vice versa (Myers & Majluf, 1984). The theory asserts a negative relationship between debt ratios and shareholders’ returns.

2.3. Empirical review

2.3.1. Review of non-Nigerian studies

Ahmad, Abdullah, and Roslan (2012) studied the impact of capital structure on the operating performance of 58 listed Malaysian firms over the period 2005 to 2010. The results of the regression models showed that leverage indicators have a significant positive relationship with return.
on equity, which means that leverage affects shareholders’ returns. Rajin (2012) investigated the impact of financial leverage on shareholders return and business sector underwriting of seven companies of the Indian telecommunication industry for the period from 2005 to 2011. Using correlation analysis, it showed a positive relationship between financial leverage and shareholders’ return.

Examining the impact of financial leverage on the shareholders’ return of top 100 firms listed on the South African Stock Exchange from 2004 to 2009, Matemilola et al. (2012) showed through the results of the difference-generalized method of moments and system-GMM estimators that long-term debt and total debt are positively related to shareholders’ return. Using a panel data approach for a sample of 237 Malaysian listed companies on the Bursa Malaysia Stock Exchange for the period 1995 to 2011, Salim and Yadav (2012) determined the relationship between capital structure and firm performance which accordingly inferred that leverage ratios have a significant negative relationship with shareholders’ returns.

Pachori and Totala (2012) investigated the influence of financial leverage on the shareholders’ return and the market capitalisation of automotive cluster companies of Pithampur, Madhya Pradesh, India. The OLS regression showed that leverage has a negative influence on shareholders’ return and market capitalisation. Vijayalakshmi and Manoharan (2013) investigated the impact of corporate leverage on shareholder value creation of 19 firms in the manufacturing sector in India for the period 1995 to 2010. Thaddeus and Chigbu (2012) evaluated the effect of financial leverage and shareholders’ return of sampled Russian joint-stock companies over the period 2004 to 2014 period. Using the Hausman’s specification test, leverage indicators have a negatively significant impact on return on equity.

Ahmed et al. (2018) studied financial leverage and firms’ performance of the Karachi Stock Exchange (KSE) 100 index listed firms over the period from 2005 to 2014. The pooled OLS estimator results showed that financial leverage is negatively related to the performance of the sampled Russian joint-stock companies. Iqbal and Usman (2018) identified the relationship between financial leverage and the performance of the top 16 textile composite companies listed in Pakistan Stock Exchange (PSX) (100-index) of Pakistan over the period 2011 to 2015. Through regression analysis, the study showed that financial leverage has a negative and significant effect on firms’ return on equity.

2.3.2 Review of Nigerian studies

Studies related to the effects of financial leverage on the performance of a firm are relatively limited in Nigeria. For instance, Ojo (2012) examined the effect of financial leverage on corporate performance of 17 randomly selected companies in Nigeria over the period 1993 to 2005 by employing the vector auto-regression (VAR) estimator. The results identified that the effect of leverage is significantly negative on earnings per share in Nigeria. Thaddeus and Chigbu (2012) evaluated the effect of financial leverage on the shareholders’ return of 6 DMBs (deposit money banks) in Nigeria. The regression results showed that financial leverage financing is a critical strategy for the maximisation of shareholders’ returns.

Akande (2013) investigated the effect of financial leverage on the financial performance using ten firms from Nigeria during the period 1991 to 2010. The OLS regression showed that a positive relationship exists between total debts to capital employed and return on equity. Ayodele (2013) examined the relationship between financial leverage and shareholders’ return of sampled DMBs in Nigeria. The study showed that financial leverage is positively associated with shareholders’ returns.

Akande (2014) studied the impact of financial leverage on shareholders’ return of quoted companies in Nigeria. The OLS regression results showed that the leverage ratios negatively impact on
shareholders' return of the quoted companies. Bello (2014) evaluated the effect of financial leverage on shareholders' return for sampled insurance companies in Nigeria. The static panel data estimations revealed a positive relationship between financial leverage and shareholders' return, measured by return on equity.

Abubakar (2015) studied how financial leverage is related to the financial performance of DMBs in Nigeria over the period 2005 to 2013. The descriptive and correlation analyses showed that all leverage ratios but debt ratio have a significant negative relationship with return on equity. Salman and Hassan (2016) examined the effect of financial leverage on the shareholders' return of 14 DMBs in Nigeria for the period from 2005 to 2014. The results of the panel data regression technique showed that leverage ratios have a positive and significant relationship with return on equity.

2.4. Research gap

The review of empirical studies that examined how financial leverage relates to returns have reported mixed results, and no concrete conclusive empirical evidence exists in the literature; creating the avenue for further studies. The varying results might have been recorded due to, among other things, differences in the sector/industry examined; proxy variables used; estimation procedure, sample selection, temporal scope, or country-specific characteristics. The literature review showed that numerous empirical studies are linking financial leverage with shareholders' return, especially for the non-financial sectors. However, there is still minimal empirical studies with specific particular reference to the insurance sector in Nigeria. Why the insurance sector? The insurance sector, like the banking sector, requires enormous capital to survive in the ever-changing business world; its capital is regulated as anything like the banking sector. The ability of insurers to use leverage is likely to increase with higher capital requirements stipulated by the National Insurance Commission (NAICOM). Notably, a business world without the insurance sector is unsustainable since it may be difficult for risky businesses to retain all kinds of risks in the world of uncertainty (Ahmed, Ahmed, & Ahmed, 2010). The ability of firms' operating in the sector to continue covering risk in the economy centers on their capacity to create a profit or maximise value for their shareholders.

The review of the literature also showed that most studies on the topic are estimated using static models; the few exceptions are the studies of Matemilola et al. (2012) and Ojo (2012). It is important to stress that firms today operate in a very dynamic environment; thus, a dynamic model is the most appropriate in investigating the relationship between leverage and shareholders' returns. Furthermore, this study adopts the Arellano-Bond difference GMM estimator, which assuages the possibility of reverse causality between leverage and shareholders' returns. However, previous studies in Nigeria, as noted earlier, have not accounted for this.

3. METHODOLOGY

This study scrutinises the effect of financial leverage on the shareholders' return of listed insurance companies on theNSE by specifying a dynamic panel model and adapts the model stated by Enekwe et al. (2014). It modified their model by using a proxy (return on equity), which focuses on shareholders' return as the measure of the financial performance being the target of insurers rather than return on assets; the use of this proxy also ensures that the objectives stated for this study are achieved. It also introduces dynamics into the model, considering that the previous value of shareholders' returns can predict its current value. This study added firm size, effective tax rate, and the age of a company as firm-specific control variables that could also affect the return of shareholders' (ROE).

The functional model for this study is specified as:

$$\text{Model 1}$$

$$ROE = f (LEV, FMZ, TAX, AGE)$$ (1)

Debt ratio (DR), the debt-equity ratio (DER), and the interest coverage ratio (ICR) are used to measure financial leverage (LEV). The one-period lagged value of the dependent variable was introduced as a regressor in equation (2) and this makes the model dynamic in nature.

The dynamic model specified is thus stated as follows:

$$\text{Model 2}$$

$$ROE_t = \alpha + \beta_1 ROE_{t-1} + \beta_2 LEV_t + \beta_3 FMZ_t + \beta_4 TAX_t + \beta_5 AGE_t + \varepsilon_t$$ (2)

This study recognises DR as the main leverage variable (LEV), while DER and ICR are used as a robustness check for equation (3). The regression models are stated as:

$$\text{Model 3}$$

$$ROE_t = \alpha + \beta_1 ROE_{t-1} + \beta_2 DR_t + \beta_3 FMZ_t + \beta_4 TAX_t + \beta_5 AGE_t + \varepsilon_t$$ (3)

$$\text{Model 4}$$

$$ROE_t = \alpha + \beta_1 ROE_{t-1} + \beta_2 DER_t + \beta_3 FMZ_t + \beta_4 TAX_t + \beta_5 AGE_t + \varepsilon_t$$ (4)

$$\text{Model 5}$$

$$ROE_t = \alpha + \beta_1 ROE_{t-1} + \beta_3 ICR_t + \beta_4 FMZ_t + \beta_5 TAX_t + \beta_6 AGE_t + \varepsilon_t$$ (5)
where ROE is the return on shareholders’ equity at the current period; ROE refers to the one-period lagged value of ROE; DR is debt ratio; DER is the debt-equity ratio; ICR is an interest coverage ratio; FMZ is firm size; TAX is the effective tax rate, and AGE is the company’s age. \( \alpha \) is the constant parameter. \( \beta_1, \beta_2 \) are regression parameters for the models, and the subscripts \( i \), \( t \), or \( t-1 \) which explain the panel nature of this study, represent the firm and time properties, respectively. \( e_i \), which is the composite error term, assumes the summation of unobserved firm-specific effects (\( \mu_i \)) and idiosyncratic time-specific effects (\( \nu_t \)). \( \beta_1, \beta_2 \) are expected to be either positively or negatively signed, \( \beta_1 \) and \( \beta_2 \) are expected to be positively signed, and \( \beta_3 \) is expected to be negatively signed.

3.1. Data sources and measurement

Using purposive sampling, this study selects eighteen (18) insurance companies out of the thirty-three (33) listed insurance companies on the floor of NSE for which data can be obtained over ten (10) years from 2008 to 2017 (the period captures the effects of leverage on shareholders’ returns after the 2007 recapitalization exercise for insurance companies). The insurers that enter the sample are those with high market capitalisation, positive earnings and are actively traded on the NSE floor. An unbalanced dataset was designed by obtaining data from the audited annual reports and accounts of the sampled insurance companies. Shareholders’ return is measured with ROE as EBIT divided by total shareholders’ equity.

The different variables of financial leverage, as used in previous studies, are debt ratio, debt-equity ratio, and interest coverage ratio (Enekwe et al., 2014; Nwanna & Ivie, 2017). The first proxy, which is debt ratio (DR), is measured as firms’ total debt divided by their total asset; however, a high debt ratio brings greater financial risk to the shareholders’ (Abor, 2005).

This study hypothesised a significant relationship between the debt ratio and the returns of the shareholders of listed insurance companies in Nigeria. The second proxy is the debt-equity ratio (DER), and it is measured as firms’ total debt divided by their shareholders’ total equity. It provides an idea of how much debt can be fulfilled using the shareholders’ equity in the event of the firm’s liquidation. A lower debt-equity ratio will suggest that the proportion of debt financing in the capital structure is relatively lower compared with the total equity of shareholders. This study hypothesised a significant relationship between the debt-equity ratio and the returns of the shareholders of listed insurance companies in Nigeria.

The third proxy for leverage is the interest coverage ratio (ICR), which is measured as firms’ earnings before interest plus taxes divided by interest expenses.

It shows how efficiently a firm can pay its interest expense on outstanding debt; however, a lower interest coverage ratio is a sign of huge debt expense for a firm (Enekwe et al., 2014). This study hypothesised a significant relationship between interest coverage ratio and the returns of the shareholders of listed insurance companies in Nigeria.

Also, the size of the firm is measured as the natural logarithms of insurers’ total assets and the effective tax is measured as the percentage ratio of income tax to earnings before tax. In contrast, the company’s age is measured as the years of existence since its incorporation.

3.2. Estimation technique

This study applies the generalised method of moments estimation technique. Specifically, the one-step differenced GMM estimator. The estimator is appropriate when potential endogeneity problems exist, and it helps to solve the problem through higher-order lags of the dependent variable (ROE,) as instruments for ROE,. In contrast, the lagged values of the regressors are used as instruments for themselves (Arellano & Bond, 1991). Additionally, the estimator assures the effect of reverse causality where the observed relationship between shareholders’ return and leverage proxies reflect the effect of shareholders’ return on the leverage ratios rather than vice versa (Matemilola et al., 2012). This approach enables the use of internal instruments that are uncorrelated with the error term to eliminate unobservable firm-specific effects. Hence, it helps control for their effects. The GMM estimator produces an unbiased and consistent estimate when the moment conditions are valid. This study performs model diagnostic tests for endogeneity problems, the presence of weak instruments, and the tests for overidentifying restrictions. Alternatively, the panel corrected standard error estimator can be employed to analyse the study where \( N > T \) panel and it also produces standard error estimates that are heteroskedasticity and autocorrelation-consistent and robust to cross-sectional dependence.

4. DATA ANALYSIS AND RESULTS

4.1. Summary statistics

Table 1 indicates the descriptive statistics of the return on equity (ROE), debt ratio (DR), the debt-equity ratio (DER), interest coverage ratio (ICR), firm size (FMZ), effective tax rate (TAX), and company’s age (AGE).

<table>
<thead>
<tr>
<th>Statistic</th>
<th>ROE (%)</th>
<th>DR (%)</th>
<th>DER (%)</th>
<th>ICR (%)</th>
<th>FMZ</th>
<th>TAX (%)</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>0.11</td>
<td>0.57</td>
<td>1.05</td>
<td>12.97</td>
<td>16.39</td>
<td>16,15039</td>
<td>33,69444</td>
</tr>
<tr>
<td>Maximum</td>
<td>-0.15</td>
<td>0.71</td>
<td>1.27</td>
<td>114.4</td>
<td>93.32</td>
<td>239.34</td>
<td>19.42</td>
</tr>
<tr>
<td>Minimum</td>
<td>1.44</td>
<td>0.44</td>
<td>8.32</td>
<td>0.0108633</td>
<td>11.4</td>
<td>19.42</td>
<td>99.06</td>
</tr>
<tr>
<td>Maximum</td>
<td>1.44</td>
<td>0.44</td>
<td>8.32</td>
<td>239.34</td>
<td>19.42</td>
<td>19.42</td>
<td>99.06</td>
</tr>
<tr>
<td>Observation</td>
<td>1.69</td>
<td>1.38</td>
<td>1.41</td>
<td>3.6</td>
<td>1.76</td>
<td>1.76</td>
<td>1.76</td>
</tr>
</tbody>
</table>

Source: Authors’ computation (2020).
From Table 1, the average value of ROE, DR, DER, ICR, FMZ, TAX, and AGE is 0.11%, 0.57%, 1.05%, 12.97%, 16.39, 16.15%, and 33.69 respectively. The low mean value of DR implies that insurance firms are mainly equity-financed. In the same order, their minimum value is -0.35%, 0.05%, -2.2%, -0.01%, 14.4%, -63.52%, and 13 respectively. The minimum value of ROE, which is negative, suggests that some of the firms investigated experienced a negative performance. The maximum value is 1.41%, 4.44%, 8.32%, 209.54, 19.42, 99.06%, and 66. The high maximum value of ICR implies that the interest rate on the debt-financed firms is high. In contrast, the minimum value of an effective tax rate, which is negative, indicates more aggressive tax avoidance by some of the firms.

Table 2. Results of a correlation matrix

<table>
<thead>
<tr>
<th></th>
<th>ROE</th>
<th>DR</th>
<th>DER</th>
<th>ICR</th>
<th>FMZ</th>
<th>TAX</th>
<th>AGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROE</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DR</td>
<td>0.018</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DER</td>
<td>0.057</td>
<td>0.019</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ICR</td>
<td>0.021</td>
<td>0.026</td>
<td>0.027</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FMZ</td>
<td>0.034</td>
<td>0.026</td>
<td>0.027</td>
<td>0.027</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TAX</td>
<td>0.046</td>
<td>0.026</td>
<td>0.027</td>
<td>0.027</td>
<td>0.027</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>AGE</td>
<td>0.051</td>
<td>0.026</td>
<td>0.027</td>
<td>0.027</td>
<td>0.027</td>
<td>0.027</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: ** represents statistical significance at 5% level.
Source: Authors’ computation (2020).

Table 2 shows the pairwise correlation between the different leverage indicators, firm-specific control variables, and the return of shareholders’. The correlations between shareholders’ return and independent variables, except TAX, are positive and not high since the correlation coefficients are of small value. Also, there are no high correlations within the independent variable. The results support a positive relationship between the leverage indicators and shareholders’ returns. This indicates that there are no collinearity problems in regression.

4.2. Estimation results

4.2.1. Arellano-Bond differenced GMM estimation results

Table 3 presents the results of Arellano-Bond differenced GMM estimated for Model 3, 4, and 5, respectively (dependent variable: return on equity (ROE)).

The estimates of Model 3, as shown in Table 3, revealed that the one-period lagged value of return on equity (ROE) is positively signed and significant with a coefficient of 0.1987018 (p-value, 0.024). Also, financial leverage (DR) and the firm size (FMZ) is inversely (negatively) related to current ROE. The coefficient of DR is -0.0115886 with a p-value of 0.063, while FMZ has a coefficient of -0.1937132 and a p-value of 0.156; hence only DR significantly affects ROE. Effective tax rate (TAX) and the age of the insurers’ (AGE) are positively related to ROE, and both significantly affect ROE, having their coefficients as 0.0010644 and 0.0262525 with p-values of 0.065 and 0.013 respectively. Thus, only these two of three firm-specific control variables exert significant influence on ROE. The null hypothesis of the first-order autocorrelation is rejected at a 5% significance level.

In contrast, the second-order autocorrelation cannot be rejected because it showed a non-significant p-value of 0.695. The Sargan statistic also shows a non-significant p-value of 0.261, implying that the null hypothesis of overidentifying restrictions cannot be rejected. This also infers that the internal instruments used for the estimation of Model 3 are valid. The p-value of the Wald $\chi^2$ statistics indicates that the model is statistically significant at a 1% significance level.
Table 3 shows the estimates of Model 4, where the one-period lagged value of ROE, financial leverage (DER), FMZ, and TAX is positively related to the contemporaneous value of ROE. These variables showed coefficients of 0.2007826, 0.107262, 0.0198151, and 0.0001413 respectively; with their p-values as 0.032, 0.023, 0.854, and 0.718 respectively. However, only AGE is negatively related to ROE, having a coefficient of -0.0000479 and a p-value of 0.994. From Model 4, ROE, and DER are the only variables that are significantly related to ROE. The model rejects the null hypothesis of the first-order autocorrelation at a 5% significance level. At the same time, it fails to reject the null hypothesis of second-order autocorrelation, having shown a non-significant p-value of 0.649. The Sargan test fails to reject the null hypothesis of overidentifying restrictions at a 5% significance level since the test statistics show a p-value of 0.536; this implies that the instruments used for the estimation are valid. In Model 4, the Wald χ² indicates that the model is statistically significant at a 1% significance level.

As shown in Table 3, the estimates of Model 5 revealed that the one-period lagged value of ROE, TAX, and AGE of the insurers are negatively related to the present value of ROE. The variables showed negative coefficients of -0.1456627, -0.0019709, and -0.0547142, respectively, while both ICR and FMZ are positively related to ROE, showing coefficients of 0.0006948 and 0.258955, respectively. However, all the variables in Model 5 have a significant influence on ROE since their p-values fall below the 10% threshold level of significance. This study also rejects the null hypothesis of the first-order autocorrelation at a 5% significance level, but it fails to reject the null hypothesis of second-order (higher) autocorrelation. As with the previous equations, the Sargan test fails to reject the null hypothesis of overidentifying restrictions at a 5% significance level because the statistics revealed a non-significant p-value of 0.483, thus indicating that the instruments used in the estimation are valid. The Wald χ² of Model 5 indicates that the model is statistically significant at a 1% significance level.

4.3. Discussion of findings

The results of this study revealed for all the models estimated, the one-period lagged value of ROE significantly affects the current value of ROE, which confirms the relevance of dynamic models as predicted earlier in the study. This study found that DER has a negative and significant effect on the return on shareholders’ equity, in line with the argument of the pecking order theory and the findings of extant studies (Abubakar, 2015; Ahmed et al., 2018; Akande, 2014; Ojo, 2012; Ilyukhin, 2015; Iqbal & Usman, 2018; Mehta, 2014; Pachori & Totala, 2012; Rehman, 2013; Salim & Yadav, 2012). An increase in the debt ratios of the insurers as a result of the costs and risks associated with the use of debt finance options make the return on their shareholders’ equity to diminish. Simply put, an increase in the use of debt capital has not caused the management of the sampled insurance companies to increase dividend payments to their shareholders. This result implies that interest rates, which are specific to debt financing options, are high, or the management of the insurance companies lacked a clear budget. Thus, based on the significance of DR, this study rejects the null hypothesis that a significant relationship does not exist between debt ratio and ROE.

To check for the robustness of the previous results to the other financial leverage ratios like debt-equity ratio and interest coverage ratio, this study found that the debt-equity ratio has a positive and significant effect on return on shareholders’ return. This finding indicates that as the debt-equity ratios of the insurers’ increase, shareholders’ can maximise enormous wealth from their investments. If that is the case, financial leverage measured particularly with debt-equity ratio has a positive effect on ROE in agreement with the position of Modigliani and Miller (1963), proponents of the dynamic trade-off theory and existing studies (Matemilola et al., 2012; Matemilola et al., 2013). Furthermore, it discovered that financial leverage measured as interest coverage ratio has a significant positive effect on ROE. Implicitly, this study revealed that financial leverage determines the return of shareholders in terms of dividend payment by the insurers. Therefore, this study also rejects the null hypothesis that there is no significant relationship between debt-equity ratio and ROE as well as between interest coverage ratio and ROE.

5. Conclusion

This study investigates the effects of financial leverage on shareholders’ returns in Nigeria over the period 2008-2017 using a dynamic model. Based on the findings, this study concludes that financial leverage is of vital importance to any profit-seeking insurer since it helps firms in financing long-term projects as well as reducing the tax payable by the firm. However, firms should consider the costs and risks associated with the use of debt as well as its implications to the shareholders’ who bear the brunt of losses when a company’s performance declines. For overall inference, this study further concludes that debt ratio, the age of the insurers’, as well as their effective tax rates, have a significant positive effect on shareholders’ equity. However, the relationships among the variables differ based on the measure of financial leverage. The findings were robust to alternative measures of financial leverage such that debt-equity ratio and interest coverage ratio also had significant effects on shareholders’ returns.

In line with the study’s findings, the following recommendations are set out: first, the negative relationship between debt ratio and shareholders’ return shows that firms must be careful about how much debt (optimal level) they take, as this may undermine the return on their shareholders’ equity. Therefore, the management of insurance companies needs to reassess the costs and risks associated with financial leverage when financing decisions have to be made.

Second, insurers should follow the pecking order theory by starting with the cheaper internal financing such as retained earnings, even though the mix of equity and debt financing at sight could have a positive effect on shareholders’ return but very much expensive. Therefore, the management of
insurance companies should not be complacent in ensuring an appropriate finance mix, which will be in accordance to maximise shareholders’ wealth.

Third, the interest cover ratio is a significant determinant of shareholders’ return. Thus firms that prefer internal to external finance are not those that can repay their debts as quickly as possible; hence, the management of insurance companies is expected to monitor the interest charged on debt financing and avoid liquidation of the company.

The study offers empirical findings to understand the relationship between financial leverage and shareholders’ in the context of a dynamic business environment with a less developed financial system. The pecking order theory has significant implications for practice and informs a set of managerial and investors’ recommendations. Findings from the study help managers understand the finance options they should choose and the conditions attached; findings help managers’ financial policymaking. We believe that this study shifts the frontiers of knowledge and enlightens the investors and shareholders’ of insurance firms in Nigeria, especially when they face asymmetric information problems.

This study has a few limitations related to its sectorial nature. Firstly, the focus on the financial sector makes generalizing the results difficult. This study’s findings offer strong support to the notion that the nature of the relationship between financial leverage and shareholders’ return varies by sectorial context.

This study has considered insurance firms that form part of the financial system. Future studies may consider using larger samples (different sectors), including the real sectors such as the agricultural sector to enhance the generalizability of the results. Future studies could also consider other important issues, such as examining whether the duration of debt ratio matters in the relationship financial leverage-firm performance. Future studies may consider conducting longitudinal studies because this study has used a period from 2008 to 2017; a more extended period can be examined.

REFERENCES


