RELATIONSHIP BETWEEN DEBT RATIO AND FINANCIAL PERFORMANCE OF NIGERIAN QUOTED COMPANIES

*Adegbola Olubukola Otekunrin, Tony, Ikechukwu Nwanji, Ajayi, Samuel Abiodun, Awonusi, Frank Dayo, Eluyela, Damilola Felix,
Department of Accounting and Finance,
Landmark University, Omu-Aran, Kwara State, Nigeria
email: otekunrin.adegbola@lmu.edu.ng, nwanji.tony@lmu.edu.ng, ajayi.abiodun@lmu.edu.ng, awonusi.frank@lmu.edu.ng, eluyela.damilola@lmu.edu.ng

Abstract: *This study examined the relationship between debt ratio and financial performance of selected Nigerian quoted. This research work also examined whether asset turnover is related firm financial performance as well as whether asset tangibility is related firm financial performance. Data for the period of five years (2011-2015), sourced from the annual reports of the quoted companies was used in carrying out the analysis. The variable used werey debt ratio , assets turnover, assets tangibility, and financial performance (i.e. profitability) is proxied by return on assets.STATA software was engaged in performing the correlation and regression analysis. The study detected that from the regression analysis that debt ratio and financial performance are positively and significantly related. The result also revealed that asset turnover and financial performance are negaitively and but not significantly related whlie assets tangibility and financial performance are positively and significantly related.*

Keywords: Return on equity, Debt ratio, Assets tangibility, Capital Structure, Profitability

Reference to this paper should be made as follows: Adegbola Olubukola Otekunrin et al.,(2018), Relationship between Debt Ratio and Financial Performance of Nigerian Quoted Companies. *J. of Social Sciences and Public Policy,* Vol. 10, Number 1, Pp. 54-70

INTRODUCTION

In firm' management decision making, capital structure is key in ensuring maximum financing mix to achieve the maximum market value of the firm (Borgia &Yan, 2013). however, one area of concern in the corporate finance management arena for a nearly half-century is capital structure. Management are concern about optimal debt ratio to be included in firm' capital structure (Borgia &Yan, 2013) and the management final decision on financing mix give rise to different forms of agency costs . Forms of agency costs / agency relationship caused by firm financing mix include relationships between shareholders and managers, relationship between debt holders and manager as well as relationship between debt holders and shareholders (Jensen & Meckling, 1976). Accordingly, the capital structure of a firm determine the firm' debt ratio, asset tangibility and asset turnover (Jensen & Meckling, 1976). Hence the main objective of this study is to examine whether debt ratio and the financial performance of firms are related. This study also examined whether asset tangibility and the financial performance of firms are related as well as whether assets turnover and the financial performance of firms are related.

Capital structure expressed how firms' assets have been finance by debt financing and equity financing. Finance theories defers on whether using more equity financing than debt financing can help firms to maximize firm' value. Whenever a firm needs additional finance for financing its assets, Miller-Modigliani (MM) theory is of the view that more debt financing would help firms' maximize it value through tax shield benefits and that debts ratio and performance of firm are positively related (Modigliani and Miller, 1963). It mean debt ratio determine the performance of firm. the performance of firm in this study is proxied by return on assets (ROA). However, pecking order theory is of the view that in terms of raising additional finance to finance firm' assets , funding by the use of retained earnings is most preferred while financing through raising the debt level is next and the last option is issuing of additional equity (Myers & Majluf, 1984; Margaritis & Psillaki, 2007). Both of these theories (i.e. Miller-Modigliani (MM) theory & pecking order theory) demonstrate the importance of using debt financing to raise additional capital to fund the firm's assets and in both cases it is prefer to issuing of additional equity. It is for this reason that this examined whether debt ratio is related to firms' performance and if so, is it a positive or negative relationship.

Research Objectives

Specific research objectives are as follows:

1. To determine whether debt ratio is related to firm financial performance.
2. To investigatewhether asset turnover is related firm financial performance
3. To examine whether asset tangibility is related firm financial performance.

Research Questions

Specific research questions:

1. Is debt ratio related to firm financial performance?
2. Is asset turnover related to firm financial performance?
3. Is asset tangibility related to firm financial performance ?

Research Hypothesis

The three hypotheses in null form tested in this study are given below:

Hypothesis One

H_0: Debt ratio and firms financial performance are significantly related

Hypothesis Two

H_0: Asset turnover and firms financial performance are significantly related.

Hypothesis Three

H_0: Aasset tangibility and firms financial performance are significantly related.

LITERATURE REVIEW

Capital Structure: Meaning, Nature, and Concept

Capital structure is the summation of shareholders fund and debts used by firm to finance its asseta (Alfred, 2007; Saad, 2010, Touseef, 2014). The more the firm' debt ratio the more part of the operating profit of the firm that would be used to pay debt holder fixed interest on the debt and consequently the more proportion of the operating profit would be used to pay back the debt itself (Jeng-Ren, Li, & Han-Wen, 2006). Consequently the more the cash flow from will be consumed by payment of debts and the interst. Hence it is expected of management when taking financing decision to make used of financing mix that would offer the firm maximum market value. This study therefore examined if debt ratio is related to firm financial performance and if asset tangibility is related to firm financial performance as well as if asset turnover is related to firm financial performance.

Equity and Profitability

Money invested by investors (i.e. share capital) in order to obtained ownership share in firm is know as equity financing. The total equity of a firm include share capital, share premium, retained earnings and other reserves (Otekunrin, 2017). Pandey (2009) opined that managers should at all time use financing mix the would be advantageous to equity shareholders. This is inline with finance theory stipulated that maximization shareholders' wealth formed the key objective of business enterprise (Brander & Lewis,1986). Hence the profitability of a business must be at first more beneficial to equity shareholders in terms of returns on equity (i.e. profitability), earnings per, net assets per share and market value (Brander & Lewis,1986). According to Uwuigbe & Olayinka (2012), in finance theory, the capital structure does affects firm's cost of capital and consequently profitability. A level of debt finance that can affect the equity shareholder interest negatively in form of returns on equity, earnings per, net assets per share and the market value should be strictly avoided by managers in the discharge of their principal-agent responsibility to the equity shareholders. It is instructive for managers also make sure that the ownership status and interest existing shareholder is not watered by issuing of new shares to the public or by engaging excessive debt financing that can lead to lost of the firm control by the existing shareholder. It is for this reason that funding or financing an existing firm through the use of retained earnings is most prefer to raising the debt level or issuing of additional equity under pecking order theory.

Debt and Profitability

Based on pecking order theory, debt financing and profitability are negatively related. Profitable firms make sufficient profit which inturn can be employed as source of internal financing. Hence the more a firm is profitable, the less debt financing would be needed and vice-vica (Titman & Wessels, 1988; Hovakimianet al, 2004). On the other hand, trade-off theory predicted that there can be positive relationship between profitability and debt financing. According to Hsu and Hsu (2011:6529) "trade-off theory assert that the fact that firms usually are financed partly with debt and partly with equity. The marginal benefit of further increases in debt declines as debt increases, while the marginal cost increases, so that a firm that is optimizing its overall value will focus on this trade-off when choosing how much debt and equity to use for financing." It mean that as debt financing is increasing and the marginal benefit is increasing, there is positive relationship between profitability and debt financing. When the marginal benefit from additional increases in debt financing declines as debt financing increases, there is negative relationship between profitability and debt financing. Hence trade-off which is the optimum financing mix is where the marginal benefit equals marginal cost.

Firms Financial Performance

In corperate reporting financial performance are usually measure by profitability ratios and profitability ratios includes return on assets (ROA) and returns on owner's equity (ROE). According to

Muhammad, Rashid, Ammar , Naveed, Syeda and Khalil (2015:124) "Profitability of the firms is the return for the firms on their investment. Earnings of the firms are reward of the management's efforts and return of shareholders for their investments. Profitability of the firms can be measured through different methods. Return on assets (ROA) and return on equity (ROE) are used commonly to measure the profitability of the companies. Return on assets is the return of the organization forusing short term and long term assets to generate the revenues. Return on equity is the return on the investmentfrom the shareholders of the organizations." Pevoius reseacher that found that there is a relationship between debt ratio and return on assets in Mauer and Triantis (1994), Barclay, Smith and RWatts (1995) as well as Geske and Robert, (1979). Inline with these previous studies, this research examined the relationship between debt ratio and financial performance of selected Nigerian quoted.

Empirical Framework

There is the need to review some past empirical studies in terms of the objective of studies, the methodology that was designated and the discoveries of the studies as are related to this current study. This is essential in order to enable the researcher to see the outlines that might have been left or to get a sight of some recommendations for further studies that might have been accounted for in these preceding studies. Most studies found a negative relationship between profitability and capital structure (Friend and Lang, 1988; Barton et al., 1989: Van der Wijst and Thurik, 1993; Chittenden et al., 1996; Jordan et al., 1998; Shyam-Sunder and Myers, 1999; Michaelas, and Chittenden and Poutziousris, 1999).Empirical supports for the relationship between capital structure and firm performance from

The agency perspective is many and in support of negative relationship. Zeitun and Tian(2007), using 167 Jordanian companies over fifteen year period (1989 – 2003), found that a firm's capital structure has a significant negative impact on the firm's performance indicators, in both the accounting and market measures. Mojumder and Chiber (2004) and Rao, and Syed (2007) also confirm thenegative relationship between financial leverage and performance. Their results further suggest that liquidity, age, and capital intensity have a significant influence on financial performance. Amah and Ken (2016), concludes that capital structure composition has no impact on financial performance using a case study of two brewery industry listed on the Nigerian Stock Exchange (NSE) between the periods of (2004-2013). Uwaloma and Uadiale (2012), concludes that employing a high proportion of long-term debts in firms' capital structure will habitually result in a low performance of a firm. Ubesie (2016), using a quoted conglomerates for the period of five years (2011-2015), the result was in agreement with most previous studies on other sectors that discovered mixed results on the effect of capital structure on financial performance.

METHODOLOGY

Descriptive statistics will be adopted for the relationship between capital structure and performance of firms focusing in various activities. The data used for this research was obtained from the annual reports of the companies listed on the Nigerian Stock Exchange(NSE) for a five year period (i.e. from 2011-2015) is the source of data for this research. The population is the set of all participants that meet the requirements for the study. It is also the entirety of the observation with which we are connected. The population of this study consists of thirty- five companies specializing in different business activities listed on the Nigerian Stock Exchange (NSE). Some criteria for selecting the companies include that it must be listed on Nigerian Stock Exchange, it must have complete information for the period of five years (i.e. from 2011-2015). Secondary data was used as a method of data collection. The data which will be gotten from published annual report. Statistical analysis technique would be used to provide descriptive statistics to find out the mean and standard deviation of each variables. The data would be analyzed using regression, and correlation analysis to study capital structure and performance of firms.

MODEL SPECIFICATION

Dependent varaaible return on equity and debt ratio is the independent variable.

$ROA = \beta_0 + \beta_1 DR + \beta_2 TURN + \beta_3 AGE + \beta_4 TANG + eit$……. (1)

Where:

ROA = Return on Assets (proxy for financial performance).

DR= Debt ratio

TURN = Asset Turnover (control variable).

AGE = Age of the firm(control variable).

TANG = Asset Tangibility (control variable).

e_{it} = Error term

Apriori Expectation:

$\beta_1, \beta_2, \beta_3, \beta_4 > 0$ (i.e. unknown regression coefficients value)

$\beta_1 > 0$: Debt ratio and firms financial performance are significantly related

$\beta_2 > 0$: Asset turnover and firms financial performance are significantly related..

$\beta_3 > 0$: Asset tangibility and firms financial performance are significantly related..

$\beta_4 > 0$: Age and firms financial performance are significantly related.

PRESENTATION OF DATA

TABLE 4.1 DESCRIPTIVE STATISTICS OF VARIABLES (2011-2015)

Variables	Observation	Mean	Std.Dev.	Min	Max
ROA	175	14.25044	22.74852	.027	132
DR	175	19.69421	75.92975	.003	972.187
TURN	175	18.88077	71.03438	.002	905.432
TANG	175	14.09255	23.36625	.002	135
AGE	175	14.12081	23.84445	0	136

Source:Author's computation using STATA

Interpretation

Table 4.1 gives the summary information of the variables used in the research. It shows that ROA mean value is 14.3%, it showed that financial performance in the selected firms is low during the period of study. A brief appraisal of the DR's mean value is 19.7, asset turnover mean is 18.9, and asset tangibility mean is 14.1. it shows that proportion of the firms' fixed assets to total assets is about 14%. Age of the firm mean value is 14.1%, the firms faced a very high growth of 136% maximum value and a minimum value of 0% within the time.

Regression Analysis

The regression analysis was used to study whether debt ratio and firms financial performance(i.e. ROA) are significantly related from 2011 to 2015.

TABLE 4.2 REGRESSION RESULTS OF THE VARIABLES (2011-2015)

MODEL	Coefficient	Std. Error	t-statistics	Prob.
CONSTANT	0.9884378	0.5703721	1.73	0.085
DR	0.2219085	0.0797126	2.78	0.006
TURN	-0.3417001	0.0866187	-3.94	0.000
TANG	1.023287	0.061173	16.73	0.000
AGE	0.0653306	0.055478	1.18	0.241

R-squared =0.9225*Source: Author's computation using STATA.*
Predictors: (CONSTANT), DR, TURN, TANG, AGE
Dependent Variable: ROA

Interpretation

The regression analysis result as displayed in table 4.2 above indicates debt ratio and firms financial performance are positive and significantly related, where the coefficient is 0.2219085, and a t-statistics value of 2.78, which makes the coefficient value significant at 1% to ROA. TURN shows Asset turnover and firms financial performance are negatively but not significantly related, where the coefficient value is -.3417001which makes it not significantly related to ROA and a t-statistics value of -3.94 which means the higher the level of Asset turnover, the lower the performance of the firm. Also, TANG shows Asset tangibility and firms financial performance are positively and significantly related, where the coefficient value is1.023287which makes it significant to ROA. AGE is insignificant to the performance of firms (ROA) which shows a positive coefficient value of.0653306. This is distinct with a t-statistics value of 16.73and 1.18 correspondingly.

Correlation

The table below reviews the result of the correlation analysis of the variables under study.

TABLE 4.3CORRELATION OF THE VARIABLES (2011-2015)

	ROA	DR	TURN	TANG	AGE
ROA	1.0000				
DR	0.2604*	1.0000			
TURN	-0.2784	0.9965*	1.0000		
TANG	0.9192*	0.5274*	0.5491*	1.0000	
AGE	0.8828*	0.4192*	0.4405*	0.9265*	1.0000

Source: Author's computation using STATA Note:, signifies 5% level of significance.*

Interpretation

Table 4.3 above displays that debt ratio and firms financial performance are positive and significantly correlated, which is 26% distinctly with a correlation coefficient (r=0.2604). ROA is negatively correlated and significant with TURN, where TURN is -27.8%.This result shows that TANG has a positive significant correlation with ROA and AGE also has a positive significant correlation with ROA.

TESTING OF HYPOTHESIS

Hypothesis testing is used to observe the relationship between debt ratio and performance of firms using the regression analysis, by examining the values of the coefficient and t-statistics value. Also, the correlation analysis test of hypothesis using the variables whereby the ones with (*) shows that it is significant.

Hypothesis One

As shown in table 4.1.3 where the rvalue =0.2604*, it shows a positivesignificant relationship between the financial performance of firms substitute by ROA and DR .i.e. an increase in DR will lead to an increase in ROA. Since the correlation value is0.2604*, it means the data supports our hypothesis, so we accept the alternative hypothesis.

Hypothesis Two

As shown in table 4.1.3 where the r value = -0.2784*, it shows a negative significant relationship between TURN and ROA .i.e. an increase, in TURN, would yield a decrease in ROA. Since the correlation value is -0.2784*, it means the data does not support our hypothesis, we reject the alternative hypothesis.

Hypothesis Three

As shown in table 4.1.3 where the rvalue =0.9192*, it shows a positivesignificant relationship between TANG and ROA.i.e. an increase in TANG would yield an increase in ROA. Since the correlation value is 0.9192*, it means the data supports our hypothesis, we accept the alternative hypothesis.

SUMMARY OF FINDINGS

This study considered whether debt ratio and financial performance (ROA) of listed firms in Nigeria are related.The result revealed that debt ratio and financial performance are positively and significantly related. The result revealed that asset turnover and financial performance are negaitively and but not significantly related whlie assets tangibility and financial performance are positively and significantly related.These discoveries are harmonious to Masavi, Kiweu and Kinyili (2017), Nour (2012), Maniagi, Chitiavi, Alala, Musiega, and Rueben, (2012) and Edwin (2015) figured out that firms' financial performance and debt ratio are positively and significantly related. The result also support pecking order theory which prefer funding of firm' assets through debt financing to issuance of new additional equity shares while the retained earnings which is the most preferred financing option for additional fund is insufficient under pecking order theory.

CONCLUSION

In conclusion, the research study result revealed that debt ratio and financial performance are related both positively and significantly. So management of the quoted firm should implement a good debt finance suitable for the firms to carry on their business activities successfully, make profit and maximize firm' value.

RECOMMENDATIONS

This study recommends that to management should make use of debt financing as the next option for funding the firm' assets where the retained earnings is insufficient to fund the required assets of the firm and issuance of new equity should be the last option in order not to watered the ownership status and interest existing shareholder by issuing of new shares to the public or by engaging excessive debt financing that can lead to lost of the firm' control by both the existing shareholders and the existing management. Nevertheless, management should not stack the firm' business with more debt than it has the capability to service as this would likely lead to financial challenges that eventually could lead to bankruptcy.

REFERENCES

Akinyomi ladele John (2014) Effect of capital structure on firm performance: Evidence from Nigerian manufacturing industry.

Aransiola SolomonYinka and AransiolaOluwadetan. American Journal of Economics, Finance, and Management. Vol. 1, No. 5, 2015, pp. 369-376

Adebayo YinkaAdeyiga (2008). Effect of capital structure on the performance of firms in Nigeria.

Barclay, M.J., C. Smith, and R.Watts, (1995). The determinants of corporate leverage and dividend policies, Journal of Applied Corporate Finance 7, 4-19.

Emmah .A.Orua (2004). The relationship between capital structure and the financial performance of microfinance institutions in Kenya.

Felicia OmowunmiOlokoyo. Capital Structure and Corporate Performance of Nigerian Quoted Firms: A Panel Data Approach. African Development Review, Vol. 25, No. 3, 2013, 358–369.

Geske, Robert, (1979). "The Valuation of Compound Options." Journal of Financial Economics 7, pp. 63-81.

Jensen, M. (1989): Eclipse of a public corporation. Harvard Business Review, 67(5), pp. 61-74.

Jensen, M. and Meckling, W. (1976): Theory of the Firm: Managerial Behaviour, Agency Costs, and Ownership Structure. Journal of Financial Economics, pp.305-360

Jensen, M. and Ruback, R. (1983): The market for corporate control: The Scientific Evidence. Journal of Financial Economics, Vol. 11, pp. 5-50.

Jensen, M. C. (1986): Agency Cost of Free Cash Flow, Corporate Finance, and Takeovers, American Economic Review, Papers, and Proceedings. 76 (1), 323-9

Jensen, M., Meckling, W., (1976): Theory of the firm: managerial behavior, agency costs and Journal of online Education, January Edition, pp 1- 8.

Jeng-Ren, C., Li, C., & Han-Wen, W. (2006). The determinants of working capital management. *Journal of American Academy of Business, Cambridge,* 10(1), 149-155.

Kochhar, R (1996): Explaining firm capital structure: the role of agency theory vs transaction cost economics, Strategic Management Journal, Vol. 17, pp 713- 728.

Long, M. S. and I. B. Malitz (1985): The investment-financing nexus: Some empirical evidence. Midland Corporate Finance Journal 3, 53-59

Long and Malitz, (1986): The Investment Financing Nexus: Some Empirical Evidence, Midland Corporate Finance Journal, Vol. 3, pp. 140-169

Long, M. S. and I. B. Malitz (1985): The investment-financing nexus: Some empirical evidence. Midland Corporate Finance Journal 3, 53-59

Long and Malitz, (1986): The Investment Financing Nexus: Some Empirical Evidence, Midland Corporate Finance Journal, Vol. 3, pp. 140-169

Majumdar, S.K, and Chhibber, P (1999): Capital structure and performance: evidence from a transition economy on an aspect of corporate governance. Public Choice, 98, pp 287- 305

Maniagi, G., Chitiavi, M. S., Alala, O. B., Musiega, D., & Rueben, R. (2012). Capital Structure And Performance: Evidence From Listed Non-Financial Firms On Nairobi Securities Exchange (Nse) Kenya. International Journal for Management Science and Technology (IJMST), 1(2), 5-19.

Margaritis, D. and M. Psillaki (2007): Capital Structure and Firm Efficiency, Journal of Business Finance & Accounting, Vol. 34 (9-10), pp. 1447-1469.

Masavi, J.M, Kiweu, M and Kinyili, J (2017): Capital Structure and Financial Performance Of Agricultural Companies Listed In Nairobi Securities Exchange, Kenya, International Journal of Economics, Commerce and Management, Vol. 5 (11), pp. 653-665.

Mauer, D.C. and A.J. Triantis, (1994). Interaction of corporate financing and investmentdecisions: a dynamic framework, Journal of Finance 49, 1253-1277.

Modigliani, F, and Miller, M. (1963): Corporate Income Taxes and the Cost of Capital: A Correction. American Economic Review, 53 (1), 433-443.

Modigliani, F. and Miller, M. (1958): The cost of capital, corporate finance and the theory of investment, American Economic Review, Vol. 48, pp. 261-97.

Modigliani, F. and Miller, M. (1963): Corporate income taxes and the cost of capital: a correction, American Economic Review, Vol. 53, June, pp. 443-53.

Mohammad F. and Jaafer .M. (2012). The Relationship between Capital Structure and Profitability.

Muhammad, N, Rashid, A Ammar, A, Naveed, A, Syeda, R.B and Khalil, U.R (2105): The Effect of Leverage on Financial Health of the Firms: A Study from Cement Industry of Pakistan, Vol. 5 (5), pp 123 -127

Nour, A. (2012). Capital Structure and Firm Performance; Evidence from Palestine Stock Exchange. Journal of Money, Investment and Banking, 1450(23).

OdongoKodongo, ThabangMokoaleli-Mokoteli and Leonard N. Maina(2014). capital structure, profitability, and firm value: panel evidence of listed firms in Kenya.

Olokoyo, Felicia Omowunmi (2012). capital structure and corporate performance of Nigerian quoted firms: a panel data approach.

Odita Anthony and CasmirChinaemerem.The Impact of capital structure on the financial performance of Nigerian firms. Arabian Journal of Business and Management Review (OMAN Chapter). Vol. 1, No.12; July 2012.

Pinegar, M. and Wilbricht, L. (1989): What Managers Think of Capital Structure Theory: A Survey, Financial Management, winter, pp. 82-91.

SalawuRafiuOyesola (2009). The effect of capital structure on profitability: An empirical analysis of listed firms in Nigeria.

Salawu Rafiu Oyesola(2007). An Empirical Analysis of the Capital Structure of Selected Quoted Companies in Nigeria.

Samuel KipkorirKoech (2011). the effect of capital structure on profitability of financial firms listed at Nairobi stock exchange.

SoranaVătavu (2015) The impact of capital structure on financial performance: Evidence in Romanian listed companies.

Titman and Wessels, (1988): The Determinants of Capital Structure Choice, Journal of Finance, Vol. 43.

T. Velnampy and J. Niresh (2012). The Relationship between Capital Structure & Profitability By Global Journal of Management and Business ResearchVolume 12 Issue 13 Version 1.0

UwuigbeUwalomwa&OlayinkaMarteUadiale (2012). An Empirical Examination of the Relationship between Capital Structure and the Financial Performance of Firms in Nigeria.

Wald, J. (1999): How firm characteristics affect capital structure: an international comparison, The Journal of Financial Research, Vol. XXII No. 2, pp. 161-187.

Zeitun, R. and Tian, G. G. (2007): Capital Structure and Firm Performance: Evidence from Jordan, Australia Accounting Business, and Finance Journal. 1 (4), pp.148-168.