

Effects of Total Debts to Total Assets on Return on Assets of Deposit Money Banks in Nigeria

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Abstract

The aim of this paper is to investigate the effects of Total Debts to Total Assets on Return on Assets of Deposit Money Banks in Nigeria using the pooled Ordinary Least Square (OLS) technique. We used a balanced panel data, consisting of seven deposit money banks for ten quarters giving us seventy observations from 2015:Q1 to 2017:Q2 from Securities and Exchange Commission. The results reveal a significant but negative relationship between Total Debts to Total Assets on Return on Assets of Deposit Money banks for the period under study implying that continuous accumulation of debts as option for financing banks will reduce average Returns on Assets drastically. The study therefore concludes that debts are not the best option for financing banks because of the high cost associated with them and recommends that deposit money banks should source for other means of financing their banks other than debts, like equity because of the high cost associated with them.

1.0 Introduction

Determining the optimal financial structure of an organization is a critical financial management function. It involves the weighing of the pros and cons of various sources of financing and selecting the most advantageous keeping in check the target capital and its effect on the value of the organization. It is a continuous decision that is taken whenever a firm needs additional capital (Pandy, 2005). A firm's financial structure must be developed with an eye on the risk element because it has a direct link with the value (Krishnan and Moyer, 1997). Risk may be factored for two considerations: that financial structure must be consistent with the firm's business risk, and that financial structure results in a certain level of financial risk. The debt-equity mix can take any of the following forms: 100% equity: 0% debt, 0% equity: 100% debt and X% equity: Y% debt. From these three alternatives, option one is that of the unlevered business organization, which shuns the advantage of leverage (if any). Option two is that of an organization that has no equity capital (Olokoyo, 2012).

Unlike the classical theories of financial structure, modern theories take into account taxes, financial distress, agency cost, information asymmetry and the effect of market imperfections which are considered non-existent in the Miller and Modigliani assumptions. Unlike other corporate organizations, financial structure of the banking sector is determined by the regulatory authorities, credit risk, dividend policy, Bank size, growth of assets and performance. It comprises tier 1, tier II and tier III capital which is a combination of equity and debt. In the conventional corporate finance theories, a bank in equilibrium will desire to hold a privately optimal capital that just trade-off cost and benefits, implying a zero relationship at the margin. Capital requirements, imposed by regulators, as they are bound by them, make banks to hold capital in excess of their private optimal and hence forces banks to go above their internal optimal capital ratio which imposes cost on banks.

2.0 Literature Review

2.1 Conceptual Review

Return on Assets (ROA) refers to net income divided by total assets and gives an idea of the banks' earnings via utilization of available assets. Return on assets showcases how well a bank manages its assets to make earnings. A bank with consistent return on assets is considered by investors as sound and liquid. Higher return on assets is a suggestion that a bank is adequately and efficiently utilizing its assets. Akter, Parvin and Easmin (2015), Allahham (2015) and Nioo (2015) used this measurement.

Total Debt to Total Assets (TDTA) refers to the size of the bank's debt relative to total assets. A higher debt ratio is an implication of almost complete reliance of debt to earn profit. Total debt to total assets was calculated by dividing the total debts of deposit money banks by total assets excluding off balance sheet engagements. Sharma and Verma (2016), Siddiqui and Shoaib (2011), Kuria (2013) and Rejha and Alslehet (2014) applied this index.

2.2 Theoretical Framework

The theoretical framework for this study is the Static Trade-Off Theory. Following the assumptions of Modigliani and Miller (1958), the static trade-off theory was developed. The theory states that firms would benefit more if business operations are heavily financed by debt as against equity not minding the indirect cost associated with debt via indirect bankruptcy cost and cost of financial distress. According to Kraus and Litzenberger (1973), static trade-off theory assumes that firm's trade-off the benefits and costs of debt and equity financing and finds an optimal capital structure after accounting for market imperfections such as taxes, bankruptcy costs and agency costs. From that static trade-off theory, optimal financial structure is obtained where the net tax advantage of debt financing balances leverages related to costs such as financial distress and bankruptcy, holding firm's assets and investment decisions constant. To maximize firm value, choosing the amount of debt and equity needed to finance operation should be the priority of firm's management.

Following Altman (2002) perspective of this theory, claiming that issuing equity means moving away from the optimum and should therefore be considered bad news, Myers (1984), alliance to this theory could be regarded as setting a target debt-to-value ratio with gradual attempt to achieving it. Leverage according to Ebaid (2009) could mitigate agency cost since the firm's reputation and manager's wage are at stake. Similarly, fulfillment of debt obligation via principal and interest is an indication of higher leverage. This is the reason why higher debt level against equity could be said to be the attribute of highly profitable firms.

2.3 Empirical Review

Anarfor (2015) examined the relationship between financial structure and bank performance in Sub-Sahara Africa. The study employed the use of panel data techniques to analyze the relationship between financial structure and bank performance. The performance variables used in the study were return on asset. The results from Levin-Lin-Chu and Impesaran-shin unit root test showed that all the variables were stationary in levels. The results also indicate that financial structure does not determine bank performance but rather it is performance that determines banks financial structure. Awunyo-Vitor and Badu (2012) empirically investigated the relationship between financial structure or leverage and performance of listed banks in Ghana from 2000 to 2010. Panel regression methodology was used to analyze the data. The result revealed that the banks listed on the Ghana Stock Exchange are highly geared and this is negatively related to the return on assets which can be

attributed to their over dependency on short term debt as a result relatively high Bank of Ghana lending rate and low level of bond market activities.

Mujahid, Zuberi, Rafiq, Sameen and Shakoor (2014) studied the impact of financial structure on bank performance measured by return on assets. Determinants of financial structure contains long term debt to capital ratio, short term debt to capital ratio and total debt to capital ratio. Results of the study validated a positive relationship between factors of financial structure and performance of banking industry.

3.0 Methodology

3.1 Data

To examine the effect of total debts to total assets on return on assets of deposit money banks in Nigeria, we use a balanced panel data, consisting of seven deposit money banks for ten quarters giving us seventy observations from 2015:Q1 to 2017:Q2. The banks include Diamond (DB), First Bank (FBN), First City Monument Bank (FCMB), Sterling (SB), Union (UBN), Unity (UB) and Wema (WB). The banks are selected using convenience sampling technique and based on data availability. All data are sourced from Nigerian Security and Exchange Commission (SEC). Microsoft Excel 2016 and E-Views 9.5 student version are used to aid the empirical analysis.

3.2 Method of Data Analysis

Although, there are several different methods of panel data analysis, we employ the pooled OLS technique. This method ignores heterogeneity in cross-sectional data and involves pooling all data. We believe that since deposit money banks operate in the same industry and face the same regulatory environment, they are to a large extent homogenous in terms of firm-specific factors. Thus, any heterogeneity in the panel data, arising from cross-sectional (banks) differences that may be latent, will not significantly affect the main relationship being studied. Other methods within the framework of panel data include fixed effects (FEM), random effects (REM), least square dummy variable (LSDV) and generalized method of moment (GMM). Each has its own unique advantage.

3.3 Model Specification

The model for this study is stated functionally as:

$$ROA = f(TDTA) \quad (1)$$

We can rewrite (1) econometrically as:

$$ROA_{it} = \alpha + \beta TDTA_{it} + \varepsilon_t \quad (2)$$

where; ROA_{it} = return on assets for i cross-sectional units and t time periods, $TDTA_{it}$ = the ratio of total debt to total assets, α = time invariant constant term (i.e. homogeneity term) that is common to all deposit money banks, β = cross-sectional and time invariant slope coefficient that capture the main relationship of interest, ε_t = white noise error term. Since the pooled model is homogenous and the error term is a classical white noise, OLS would give unbiased and consistent estimates.

4.0 Data Analysis

4.1 Descriptive Statistics

Table 4.1 shows the distributional properties of the study variables. Table 4.1 indicates that the return on assets and total debt to total assets ratio averaged 0.57% and 85% respectively over the period under study. As Jarque-Bera test shows, the distribution of each variable significantly deviates from normality (p -value = 0.0000). While ROA has a positively skewed (Skew > 0) and leptokurtic distribution (Kurt > 3), TDTA has a negatively skewed (Skew < 0) and platykurtic distribution (Kurt < 3).

Table 4.1: Descriptive Statistics for ROA and TDTA; *p*-value in brackets

Statistics	ROA	TDTA
Mean	0.572357	85.50071
Standard Deviation	0.416539	3.867812
Skewness	1.334260	-0.850985
Kurtosis	5.064018	2.461831
Jarque-Bera	33.19509 (0.0000)	9.293454 (0.0095)

Source: Author's Computation from E-Views 9.5

4.2 The relationship between return on assets (ROA) and TDTA

Table 4.2 reports the results of the multiple OLS regression that seeks to determine the extent to which changes in banks total debt (TD) relative to total assets (TA) can explain changes in banks' return on assets (ROA). As this table shows, the regression results are not spurious as the value of Durbin Watson (=1.392144) is substantially higher than that of R-squared (= 0.131081) [see Granger and Newbold (1974)]. The intercept value shows that, on average, without debt in bank total assets (SIZE), the return on assets would be positive and highly significant (Alpha = 3.906084, *p*-value = 0.0000). The beta coefficient of -0.038991 shows that the two variables have negative relationship such that a 1% increase in total debt relative to total asset would reduce the average return on assets by almost 0.04%. The effect of TDTA is also highly significant as indicated by the associated *p*-value which is very low at 0.0021. This is evidence against the capital structure irrelevance theory of Modigliani and Miller (1958). The R-squared indicates that the explanatory variable accounts for approximately 13% of the total variation in the return on assets, implying that other factors not included in our model account for the remaining 87%. Thus, the model fits the data very poorly. The F-statistic has almost zero probability, suggesting that overall regression is highly significant.

Table 4.2: Regression results

Variable	Coefficient	Prob.
Intercept	3.906084	0.0004
TDTA	-0.038991	0.0021
R-squared	0.131081	Durbin-Watson 1.392144
F-statistic	10.25819	Prob(F-statistic) 0.0020

Source: Author's Computation from E-Views 9.5

5.0 Conclusions and Recommendations

5.1 Conclusions

As we can see from the analysis above, the ratio of Total Debts to Total Assets is very high. The implication of this is that continuous accumulation of debts as option to finance the firm will reduce average Returns on Assets drastically owing to the negative relationship that exists between the variables. It follows therefore that debts are not the best option for financing firms because of the high cost associated with them.

5.2 Recommendations

Based on the findings of the study, the following recommendations were made.

1. Deposit money banks should aim at increasing their assets, especially investment in off balance engagement as this positively relates with net operating income.
2. Deposit money banks should source for other means of financing other than debts like equity financing.

3. Deposit money banks should promote activities that will enhance their liquidity, profitability and Assets quality.

References

- Akhtar, N., Bano, M., Bano, S., Zia, H. T. & Jameel, N. (2016). Capital structure impact on banking sector performance in Pakistan. *International Review of Management and Business Research*, 5(2): 520-532.
- Allahham, M. I. (2015). Impact of capital structure on bank financial performance of Al Ahli Bank in Saudi Arabia. *Global Journal of Management and Business Research*, 15(9): 1-9.
- Anarfo, E. B. (2015). Capital structure and bank performance – evidence from Sub-Saharan Africa. *European Journal of Accounting Auditing and Finance Research*, 1 (3): 1-20.
- Awunyo-Vitor, D. & Badu, J. (2012). Capital Structure and Performance of Listed Banks in Ghana. *Global Journal of Human Social Science*, 12(5): 57-62.
- Ebaid, I. E. (2009). The impact of capital-structure choice on firm performance: empirical evidence from Egypt. *Journal of Risk Finance Incorporating Balance Sheet*, 10(5): 477-487.
- Granger C.W; Newbold P. (1974) Spurious regressions in econometrics. *Journal of Econometrics* vol. 2 Pp 111- 120.
- Kuria, F. B. (2013). The effect of capital structure on the financial performance of commercial banks in Kenya. A thesis submitted to the Department of Business Administration, University of Kenya.
- Modigliani, F., & Miller, M. (1958). The cost of capital, corporation finance, and the theory of investment. *American economic Review* 48, 261-197.
- Mujahid, M., Zuberi, M. A., Rafiq, M. Q., Sameen, S. N. & Shakoor, M. A. (2014). Impact of capital structure on banking performance. *Research Journal of Finance and Accounting*, 5(19):99-104.
- Myers, S. C. & Majluf, N. S. (1984). Corporate financing and investment decisions when firms have information that investors do not have. *Journal of Financial Economics*, 13, 187-222.
- Nikoo, S. F. (2016). Impact of capital structure on banking performance: Evidence from Tehran Stock Exchange. *International Research Journal of Applied and Basic Sciences*, 9 (6):923-927.
- Pandey, I. M. (2005). *Financial management (11th ed.)*. New Delhi: Vikas Publishing HousePVT Ltd.
- Sharma, D. & Verma, R. (2014). Impact of capital structure on the performance: An empirical analysis of Indian banking sector. *International Journal of Research in Management, Economics and Commerce*, 6(9): 32-39.