



CAPITAL STRUCTURE AND PERFORMANCE OF FIRMS IN NIGERIA: A WAY OUT OF ECONOMIC RECESSION

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ABSTRACT: *The study examined the relationship between capital structure and the performance of firms in Nigeria. Using returns on assets (ROA), returns on equity (ROE) and Tobin Q as measurements for firm performance, debt ratio was used as a proxy for capital structure. The data were collected from quoted firms on Nigerian Stock Exchange from 1988 to 2017. The panel data analysis revealed a positive significant relationship between capital structure and performance of firms in Nigeria. The study concluded that strengthen capital structure will improve the performance of real sectors in Nigeria, and this will improve the nation's economic growth and development, and provide a way out of economic recession.*

KEYWORD: Capital Structure, Agency Theory, Firm Performance, Returns on Assets

INTRODUCTION

The beginning of all recent studies on firm's capital structure is Modigliani and Miller's (1958) study which states that in a world of perfect capital market and no taxes, a firm's capital structure will not influence its cost of capital. But later in 1963, Modigliani and Miller came up with another proposition that states that firm's capital structure will affect the performance of firm because of tax advantage of debt, Modigliani and Miller, (1963).

Several other theories (like Trade-off theory, (Kraus, (1973); Scott, (1976), and Myer, (1977)); Pecking order theory, (Myers, 1984); and Agency theory, (Jensen and Meckling, (1976)) have also contributed on the relationship between capital structure and firm performance but they presented no theoretical consensus. While Static trade-off theory assumes a positive relationship between capital structure and firm performance, Pecking Order theory claims a negative relationship between them, and Agency theory assumes both. (Myers, (1984); Myers and Majluf, (1984); Karadeniz, (2009); and Chakraborty, (2010)).

According to Agency theory, capital structure combats agency costs, reduce inefficiency and improve firm performance, Pinegar and Wilbricht, (1989). Agency problems can be reduced by capital structure in many ways, these include first, they make the managers to increase their ownership in the firm, Jensen and Meckling, (1976). By increasing the use of debt financing, it effectively displaces equity capital and firms shrink the equity base thereby increasing the percentage of equity owned by management. Second, the use of debt increases the chance of bankruptcy. This additional risk may further encourage managers to reduce their consumption for perks and increase their efficiency Grossman and Hart, (1982). Finally, the compulsory interest payments resulting from the use of debt help to combat the free cash flow problem Jensen, (1986).



Capital structure involves the decision about the combination of the various source of funds, a firm uses to finance its operations and capital investments. These sources include the use of long-term debt finance, short term debt finance called debt financing, preferred stock and common stock also called equity financing (Abu-Rub, 2012). Therefore, this study examines the relationship between capital structure and firm performance in Nigeria.

LITERATURE REVIEW

Theoretical Review

Modigliani-Miller Theory

The initial study on capital structure of firms began with Modigliani and Miller, (1958). The theory rests on the assumption that there is perfect capital market. According to the theory, market exists and operates without bankruptcy cost, transaction cost, and information is adequately available for everyone in the market. Modigliani and Miller (1958) further asserted that financing decision of firm do not affect the value and the performance of the firm. Decisions are taken without tax but with identical interest rate. As resultant effects, the cost of leverage is the same for both leverage and non-leverage firms and premium is included for the non-leverage firm.

The assumptions of Modigliani and Miller Theory were as follows:

1. Capital markets are frictionless.
2. Individuals can borrow and lend at the risk-free rate.
3. There are no costs of bankruptcy or to business disruption, no transaction costs.
4. Firms issue only two types of claims: risk-free debt and (risky) equity.
5. All firms are assumed to be in the same risk class (operating risk).
6. Corporate taxes are the only form of government levy (i.e., there are no wealth taxes on corporations and no personal taxes).
7. All cash flow streams are perpetuities (i.e., no growth).
8. Corporate insiders and outsiders have the same information (i.e., no signaling opportunities).
9. Managers always maximize shareholders' wealth (i.e., no agency costs).
10. Operating cash flows are completely unaffected by changes in capital structure.

However, in 1963, Modigliani and Miller came up with another proposition that states that capital structure of firm will affect its firm performance because of tax advantage of debts (Modigliani and Miller, 1963). Other studies after Modigliani and Miller, (1958) were conducted premised on less limiting conditions. One main consideration was that taxation was included as one of the determinants of capital structure (Eriotis, 2007). This includes tax rate on corporate earnings and tax rate on dividend income. Tax incentive is vital for corporate borrowings as it is able to take advantage of interest tax shields (Myres, 2001); (Copeland, 2003).



Agency Theory

The agency theory can be traced back to Berle and Means (1932). Other researchers traced it back to Jensen and Meckling (1976) and others to Adam Smith's influential book 'Wealth of Nations', (1976). Adam Smith identified the agency problem of firm by pointed out that the company directors are not likely to be very careful with other people's money like with their own. The theory emphasized on the separation of the ownership of a firm and control over the firm's action. According to the theory, shareholders own the firm, but the managers control it. On the other hand, Jensen and Meckling described agency relationship as a form of contract between the owner of the firm and its managers, where the owner (principal) engage agent (managers) to manage the firm on their behalf. As part of this contract, the owner of the firm must delegate decision-making authority to the management. However, the governance of firm is based on the conflicts of interest between the ownership of the firm and the managers, Jensen and Meckling, (1976).

Also, Coyle, (2003) noted that since shareholder ownership is supported by company law in developed countries, then he emphasized that the board of directors should govern the company in the best interest of the owners, that is the shareholders. This denotes that the sole objective of the firm is the maximization of the profits of the shareholders, in form of share price, dividend payment, and firm growth. The board of directors should be accountable to the owners of the firm (shareholders), who have power to remove them from their offices because of poor performance. Even in the revised edition on corporate governance principle worldwide, the International Corporate Governance Network (ICGN), (2005), emphasizes that the overriding objective of the firm is to optimize the return its shareholders and that the corporate governance practices should ensure that boards focus their attention on this main objective, Akinpelu, (2010)

Empirical Findings on Capital Structure, Exchange Rate and Performance of Agriculture and Health Sector in Developed Countries

From the perspective of the company's impact on the capital structure, according to Giannetti, hestated that the capital structure of companies in some developed countries is affected by the same company-level variables. Titman and Wessel argue that the main factors affecting a company's capital structure includes the asset collateral value of the company, the size of the company, and the non-debt tax rate. According to Frank and Goyal, the factors affecting the company's leverage include the median industrial leverage, market capitalization to book ratio, debt guarantee ability, profitability, dividend payment, asset logarithm, and the fixed effect of the company or manager. Their research in 2008 shows that from the perspective of company-level variables, there is a significant correlation between profitability, growth and other indicators and capital structure. However, from an industry perspective, the degree of competition between product markets and financial leverage in different industries are of mutual influences.

According to AD Jong, R Kabir, TT Nguyen, they believe that the company-level variables that determine the capital structure are debt guarantee capacity (net fixed assets/total assets book), risk (standard deviation of the ratio of operating income to total assets book), company size (logarithm of total sales), tax rate (annual average tax rate), development opportunities (ratio of total assets to market value to book value), profitability (ratio of operating income to



total asset book value), liquidity (flow The ratio of assets to current liabilities), as well as industry dummy variables.

Aggarwal and Harper (2010) and Choi and Elyasiani (1997) examine foreign exchange exposure domestically different from the exposures faced by multinational firms (MNEs). As expected, the quantity of domestic firms with significant foreign exchange exposure increases with the exposure estimation horizon. More attractively, the level of domestic firm exposure is significantly negatively related to asset turnover and firm size and positively related to the market to book ratio and financial leverage. Many studies indeed suggest that in practice, earnings management is used as a tool to buffer against various types of economic shocks to the operating performance of the firm, (Lambert (1984), Kandilov and Leblebicioğlu (2011), and Leuz et al. (2003)). Myers and Majluf (1984) find firms that are profitable and generate high earnings are expected to use less debt capital comparing with equity than those that do not generate high earnings. Sheel (1994) showed that all leverage determinants factors studied, excepting firm size, are significant to explain debt behavior variations. Gleason, et al., (2000) Using data from retailers in 14 European countries, which are grouped into 4 cultural clusters, it is shown that capital structures for retailers vary by cultural clusters. This result holds in the presence of control variables. Using both financial and operational measures of performance, it is shown that capital structure influences financial performance, although not exclusively. A negative relationship between capital structure and performance suggests that agency issues may lead to use of higher than appropriate levels of debt in the capital structure, thereby producing lower performance. Chiang et al., (2002) results show that profitability and capital structure are interrelated; the study sample includes 35 companies listed in Hong Kong.

Empirical Findings on Capital Structure, Exchange Rate and Performance of Agriculture and Health Sector in Developing Countries

Many recent studies addressed influence of leverage on firm performance for developing markets. Majumdar and Chhibbered (1999) showed, that in India, leverage was negatively related to a firm performance measured as profitability. Pushner (1995) found negative effect of leverage on a firm performance measured as the total factor productivity (TFP) in Japan. Nickell et al (1997) and Nickell and Nikolitsas (1999) in their studies for the United Kingdom observed some positive relationship between indebtedness and Total Factor Productivity. Booth et al. (2001) in their study of 10 developing countries found negative relation between leverage and firm's performance. Onaolapo and Kajola (2010) found a significant negative impact of leverage on financial measures of firm performance in Nigeria.

The idea that high leverage disciplined managers was initially associated with leveraged buy-out (LBO) procedures, where it was noted that an increase in debt increases productivity. The boom of LBO in the USA was followed by several studies on the post-LBO firm performance (Lichtenberg and Siegel, 1990). Since LBO procedure implies an increase in debt-to-equity ratio, researchers appealed to performance of firm after LBO. Palepu (1990) showed the increase in operational efficiency of firms involved in leveraged buyouts. Kaplan (1989) and Smith (1990) also considered leveraged buyouts and discovered the increase in return on equity after LBO. Denis and Denis (1993) found the increase in return on equity in the firms after leveraged recapitalization.

According to the growth, effects of exchange rate, uncertainty will ultimately depend on the firm and its country characteristics. For instance, in the presence of financing constraints firms



that have access to domestic and/or foreign capital markets can deal with unexpected exchange rate shocks better than others. In the same way, the level of export orientation, leverage, import dependence, size, profitability, and productivity also determine the nature of firm response to exchange rate shocks (Klein et al., 2003).

According to country specific factors, Gupta et al., (2007) currency crises are more likely to have contraction effects in emerging markets than in developed or other developing countries. Generally, exchange rate uncertainty is expected to have more depressing growth effects in developing countries because of the following vulnerabilities in these markets:

1. Low levels of financial market deepening and the dearth of hedging instruments
2. The presence of original sin and Dollarization with strong balance sheet effects;
3. Upper levels of openness and the invoicing of exports in hard currencies
4. Higher levels of exchange rate pass-through
5. Higher levels of exchange rate, capital flow, consumption, and growth volatility.

Empirical Findings on Capital Structure, Exchange Rate and Performance of Agriculture and Health Sector in Africa

In Africa, there have been few studies (Abor 2007, Ebid 2009, Lin & Chang, 2011, Leonard & Mwasa 2014, Abata & Migiro 2016). Abor (2007) investigated the effect of capital structure on the performance of Small and Medium Enterprises (SMEs) in Ghana and South Africa. He used 200 South African firms, including 68 listed firms, and found that capital structure significantly influences SMEs performance, and particularly long-term debt and total debt ratios negatively affect SMEs performance. He also found a significant negative association between return on assets, long-term debt, and total debt sales growth had a significant positive association with the gross profit margin for all metrics of debt.

Fatoki, George and Mornay (2010) studied the impact of the usage of debt on the profitability of SMEs in the Buffalo City Municipality and found that the usage of debt has a significant negative impact on the profitability of SMEs. Ramje and Gwatidzo (2012) investigated the dynamics of capital structure decisions of South African listed firms and found that profitability and tax are negatively associated with leverage, while tangibility, growth, size and risk are positively related to leverage. Equally, capital structure decisions of South African listed firms followed both pecking order and trade-off theories.

Fosu (2013) analysed capital structure, product market competition and firm performance in South Africa – using panel-data techniques on 257 firms from 1998 to 2009, and found that leverage significantly improves firm performance. From the above studies, the impact of capital structure on firm performance remains inconclusive, despite being focused on by many researchers over the years.

In South Africa, there has been little attention on the application of appropriate mix of debt and equity by corporate managers in firm financial decisions – and hence the authors' interest in empirically examining the relationship between debt-equity level and financial performance in quoted firms on the Johannesburg Stock Exchange from 2000 to 2014.

Kiptui (2007) investigates the impact of the real exchange rate on the demand for Kenya's exports in an export demand framework which also includes economic activity for Kenya's major export categories such as tea, coffee, horticulture and manufactured goods. Bounds



testing and Auto-Regressive Distributed Lag (ARDL) approaches to the analysis of long-run relationships and error correction modeling are applied. The existence of long-run relationships is established for coffee, tea and horticulture exports but rejected for manufactured goods exports. The results indicate that the real exchange rate has positive effects in the short-run but the effects are found to be statistically insignificant. Abor (2005) seeks to investigate the relationship between capital structure and profitability of listed firms on the Ghana Stock Exchange and find a significantly positive relation between the ratio of short-term debt to total assets and ROE and negative relationship between the ratio of long-term debt to total assets and sROE.

Empirical Findings on Capital Structure, Exchange Rate and Performance of Agriculture and Health Sector in Nigeria

Akinleye (2012) made use of panel data in examining the speed of adjustment towards the target capital structure by Nigerian listed firms. It was discovered that firms adjust toward target leverage at a moderate speed, with a half-life of 3.9 year for book leverage, even after controlling for the determinants of capital structure and fixed effects.

Omorogie and Erah (2010) studied capital structure and corporate performance in Nigeria between 1995 and 2009 employing Ordinary Least Square (OLS) techniques of model estimation. It was found that capital structure has not sustained effective funding required for growth and development of corporates because of its high rate of growth.

Iwarere and Akinleye (2010) used descriptive survey to investigate capital structure determinants in the Nigerian banking industry. The result identifies credit rating, volatility of earning cash flow, financial distress, transaction costs, and financial flexibility as the important factor in choosing appropriate amount of debt for banks.

Olokoyo (2012) in a study of relationship between capital structure and corporate performance of Nigeria quoted firms .the study employed panel data approach by using fixed effect estimation, random-effect estimation and pooled regression model and it was discovered that maturity structure of debts effect on performance of firms significantly and the size of the firm has a significant positive effect on the performance of firms in Nigeria.

Michael (2012) investigated capital structure determinant of quoted firms in Nigeria and lessons for corporate financing decisions using regression analysis of data obtained from Nigeria stock exchange fact book. It shows that capital structure is positively determined b cost of equity, existence of debt tax shield, covenant restrictions in debt agreements, firm dividend policy, competitor's capital structure or mix and profitability and negativity correlated with cost of debt.

Akinlo (2011) examine the determinants of capital structure of 66 firms listed on the Nigerian stock exchange during the period of 1997 to 2007 musing panel data. The results show that there is a negative relationship between leverage and growth opportunities and legibility, but negatively related to liquidity as well as size.

Patrick, Joseph and Kemi (2013) in a recent study on the impact of capital structure on firm's performance in Nigeria using fixed effect regression estimation model. It was discovered that there is positive relationship between return on investment and leverage of the firm over a



period of ten years. Their result support the traditional theory of capital structure which asserts that leverage is a significant determinant of firm performance.

Babalola (2012) used ordinary least square in investigating the effects of optimal capital structure on firms' performance in Nigeria. It was discovered that there is a relationship between optimal capital structure under trade-off theory and the optimal capital structure of manufacturing firms.

Chukuigwe, and Abili, (2008) in a study on econometric analysis of the impact of monetary and fiscal policies on non-oil exports in Nigeria noted that considering the importance of the exchange rate as a major price that affects all sectors of the economy and all economic agents, it is imperative to monitor the movements in the real exchange rate in order to foster

competitiveness and improve the supply of exports in the medium to long term and that The Central Bank of Nigeria should continue to intervene in the foreign exchange market to maintain stability.

Okhiria and Saliu (2008) in a study on exchange rate variation and inflation in Nigeria noted that Dutch disease results from an appreciation of the exchange rate, caused by the large inflows of petroleum revenues, which again leads to reduced competitiveness of various non-petroleum sectors of the economy. Dutch disease will often have particularly serious effects on the poor because traditional sectors such as agriculture and other production in rural areas will loss out to imports that become more competitive as a result of currency appreciation.

METHODOLOGY

Model Specification

Agency cost theory predicts that higher leverage is expected to lower agency costs, reduce inefficiency and thereby lead to improvement in firm's performance (Jensen, 1976). Berger (2002) also argued that increasing the leverage ratio should result in lower agency costs of outside equity and improve firm performance. Therefore, this study adopts the model used by Kajola, (2008), Onaolapo, (2010), Ali, (2011), and Nour, (2012); because of the consistency of control variables in the model with the standard capital structure theories; therefore, the model for the study is specified thus:

$$Y_{it} = \alpha_{it} + \beta_1 DR_{it} + \beta_2 Z_{it} + \mu_{it} + \varepsilon_{it} \dots \dots \dots \text{Eq (1)}$$

Where;

Y_{it} represents firm performance

DR_{it} is a vector of standard capital structure variables,

X_{it} is a vector of corporate governance characteristics,

Z_{it} represents control variables

α_{it} represents constant term and β_1 and β_2 are coefficient of explanatory variables.

μ_{it} is the unobserved firm specific effect and

ε_{it} is the error term. It has zero mean, constant variance and is non-auto correlated.



Logarithms of both dependent and independent variables are taken because of the possibility of non-linear relationship between capital structure and firm performance.

Secondary data were also gathered from Nigerian Stock Exchange (1996-2014) for the Generalized Method of Moments (GMM) Analysis of the relationship between capital structure and firm performance in Nigeria. A sample of seventy two (72) non-financial quoted firms was purposively selected out of one hundred and seventy five (175s) quoted non-financial firms on Nigerian Stock Exchange from Agricultural sector, Automobile and Tyre, Breweries, Building and Materials, Chemical and Paints, Computer and office Equipment, Conglomerates, Construction, Engineering Technology, Food/Beverage and Tobacco, Healthcare, Industrial/Domestic product, Packaging, Petroleum marketing, Printing and Publishing, Real Estate, Second-tier securities and Textiles.

Measurement of Variables

Performance Index represents firm performance computed through principal factor analysis.

ROA represents Return on Asset, and is measured by Profit after tax/ Total Asset.

ROE represents Return on Equity, and is measured by Profit after tax/ Average Equity.

ES represents the Price Earnings ratio, and is measured by price per share/ earnings per share

Tobin's is named after James Tobin and can be defined as the ratio of market value of debt and equity of the firm to the replacement cost of the firm. Modified Q is measured by Year-end market capitalization / the book value of total asset.

Debt Ratio(dr) represents capital structure (leverage ratio), and is measured by Debt/Equity.

Assets Turnover is Sales/Total Asset

Size represents the Natural logarithm of total assets

Asset Tangibility is Net Fixed Asset/Total Asset

Growth is the change in the natural logarithm of total asset.

FINDINGS AND DISCURSION

Regression Analysis

Table 4.1: Results of the Level Series OLS Regression Estimates Health Sector

Dependent Variable: ROA

Method: Panel Least Squares

Date: 07/29/19 Time: 12:57

Sample: 1988 2017

Periods included: 30

Cross-sections included: 9

Total panel (unbalanced) observations: 253



Variable	Coefficient	Std. Error	t-Statistic	Prob.
TDR	-0.031870	0.272590	-0.116914	0.9070
SIZE	0.071553	0.072581	0.985847	0.3252
GROWTH	0.013865	0.167826	0.082617	0.9342
ASSETS_TURNNOV				
ER	-0.089048	0.153920	-0.578534	0.5634
EXR	-0.000528	0.002568	-0.205522	0.8373
C	0.133387	0.405501	0.328945	0.7425
R-squared	0.004056	Mean dependent var		0.211055
Adjusted R-squared	-0.016105	S.D. dependent var		2.759002
S.E. of regression	2.781131	Akaike info criterion		4.907022
Sum squared resid	1910.468	Schwarz criterion		4.990818
Log likelihood	-614.7383	Hannan-Quinn criter.		4.940736
F-statistic	0.201161	Durbin-Watson stat		2.081578
Prob(F-statistic)	0.961768			

Dependent Variable: ROE

Method: Panel Least Squares

Date: 07/29/19 Time: 12:58

Sample: 1988 2017

Periods included: 30

Cross-sections included: 9

Total panel (unbalanced) observations: 253

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TDR	7.362802	11.16481	0.659465	0.5102
SIZE	2.259411	2.972781	0.760033	0.4480
GROWTH	0.981113	6.873880	0.142731	0.8866
ASSETS_TURNNOV				
ER	-2.287631	6.304281	-0.362869	0.7170
EXR	0.011507	0.105195	0.109392	0.9130
C	1.367424	16.60863	0.082332	0.9344
R-squared	0.005209	Mean dependent var		8.444517
Adjusted R-squared	-0.014928	S.D. dependent var		113.0695
S.E. of regression	113.9104	Akaike info criterion		12.33213
Sum squared resid	3204967.	Schwarz criterion		12.41593
Log likelihood	-1554.015	Hannan-Quinn criter.		12.36584
F-statistic	0.258682	Durbin-Watson stat		2.077728
Prob(F-statistic)	0.935153			



Dependent Variable: Q_
 Method: Panel Least Squares
 Date: 07/29/19 Time: 12:59
 Sample: 1988 2017
 Periods included: 30
 Cross-sections included: 9
 Total panel (unbalanced) observations: 253

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TDR	-0.675781	3.114315	-0.216992	0.8284
SIZE	1.410191	0.829229	1.700606	0.0903
GROWTH	0.114460	1.917403	0.059696	0.9524
ASSETS_TURNOVER	1.478558	1.758519	0.840797	0.4013
EXR	0.135865	0.029343	4.630213	0.0000
C	-16.05353	4.632819	-3.465174	0.0006
R-squared	0.102049	Mean dependent var		3.519774
Adjusted R-squared	0.083872	S.D. dependent var		33.19683
S.E. of regression	31.77421	Akaike info criterion		9.778616
Sum squared resid	249371.3	Schwarz criterion		9.862412
Log likelihood	-1230.995	Hannan-Quinn criter.		9.812330
F-statistic	5.614131	Durbin-Watson stat		1.124070
Prob(F-statistic)	0.000064			

Table 4.4.2 Results of the Level Series OLS Regression Estimates Agricultural Sector

Dependent Variable: ROA
 Method: Panel Least Squares
 Date: 07/29/19 Time: 13:29
 Sample: 1988 2017
 Periods included: 30
 Cross-sections included: 6
 Total panel (balanced) observations: 180

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TDR	-0.113213	0.032355	-3.499070	0.0006
SIZE	0.025342	0.010634	2.383101	0.0182
GROWTH	-0.170819	0.025441	-6.714350	0.0000
ASSETS_TURNOVER	0.006103	0.036300	0.168133	0.8667
EXR	-0.000120	0.000408	-0.293945	0.7692
C	0.003887	0.064727	0.060057	0.9522
R-squared	0.263864	Mean dependent var		0.069062
Adjusted R-squared	0.242711	S.D. dependent var		0.442061
S.E. of regression	0.384692	Akaike info criterion		0.960016
Sum squared resid	25.74987	Schwarz criterion		1.066448
Log likelihood	-80.40147	Hannan-Quinn criter.		1.003170
F-statistic	12.47387	Durbin-Watson stat		1.540388
Prob(F-statistic)	0.000000			



Dependent Variable: ROE
 Method: Panel Least Squares
 Date: 07/29/19 Time: 13:29
 Sample: 1988 2017
 Periods included: 30
 Cross-sections included: 6
 Total panel (balanced) observations: 180

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TDR	-7.137829	0.986476	-7.235684	0.0000
SIZE	0.623993	0.324226	1.924561	0.0559
GROWTH	-0.155199	0.775668	-0.200084	0.8416
ASSETS_TURNOVER	2.611043	1.106765	2.359166	0.0194
EXR	0.003192	0.012454	0.256271	0.7980
C	-1.491987	1.973464	-0.756025	0.4507
R-squared	0.283810	Mean dependent var		-0.318420
Adjusted R-squared	0.263230	S.D. dependent var		13.66439
S.E. of regression	11.72887	Akaike info criterion		7.794749
Sum squared resid	23936.56	Schwarz criterion		7.901181
Log likelihood	-695.5274	Hannan-Quinn criter.		7.837903
F-statistic	13.79049	Durbin-Watson stat		1.667121
Prob(F-statistic)	0.000000			

Dependent Variable: Q_
 Method: Panel Least Squares
 Date: 07/29/19 Time: 13:30
 Sample: 1988 2017
 Periods included: 30
 Cross-sections included: 6
 Total panel (unbalanced) observations: 167

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TDR	15.62682	15.28309	1.022491	0.3081
SIZE	9.746638	5.030957	1.937333	0.0545
GROWTH	2.575207	12.23872	0.210415	0.8336
ASSETS_TURNOVER	-10.10798	17.18435	-0.588208	0.5572
EXR	0.746652	0.201945	3.697293	0.0003
C	-95.55295	32.21802	-2.965823	0.0035
R-squared	0.100754	Mean dependent var		19.13895
Adjusted R-squared	0.072827	S.D. dependent var		185.1671
S.E. of regression	178.2970	Akaike info criterion		13.24005
Sum squared resid	5118162.	Schwarz criterion		13.35207
Log likelihood	-1099.544	Hannan-Quinn criter.		13.28551
F-statistic	3.607776	Durbin-Watson stat		1.127576
Prob(F-statistic)	0.004040			



This study was set to examine the relationship between capital structure, exchange rate and performance of agricultural and health sector in Nigeria. Performance of firms measured by returns on assets (ROA), returns on equity (ROE) and Tobin Q while others indicators include; total debt ratio (TDR), size, growth, asset-turnover and exchange rate. The results of empirical analysis show that there is a significant relationship between capital structure and performance of firms while exchange rate reveals a positive relationship exists among them. Omorogie and Erah (2010) studied capital structure and corporate performance in Nigeria between 1995 and 2009 employing Ordinary Least Square (OLS) techniques of model estimation. It was found that capital structure has not sustained effective funding required for growth and development of firms because of its high rate of growth. Patrick, Joseph and Kemi (2013) in a recent study on the impact of capital structure on firm's performance in Nigeria using fixed effect regression estimation model. It was discovered that there is positive relationship between return on investment and leverage of the firm over a period of ten years. Their result support the traditional theory of capital structure which asserts that leverage is a significant determinant of firm performance.

Babalola (2012) used ordinary least square in investigating the effects of optimal capital structure on firms' performance in Nigeria. It was discovered that there is a relationship between optimal capital structure under trade-off theory and the optimal capital structure of manufacturing firms.

Chukuigwe, and Abili, (2008) in a study on econometric analysis of the impact of monetary and fiscal policies on non-oil exports in Nigeria noted that considering the importance of the exchange rate as a major price that affects all sectors of the economy and all economic agents, it is imperative to monitor the movements in the real exchange rate in order to foster

competitiveness and improve the supply of exports in the medium to long term and that the Central Bank of Nigeria should continue to intervene in the foreign exchange market to maintain stability.

CONCLUSION

The study examined the relationship between capital structure and the performance of selected firms in Nigeria. Using returns on assets (ROA), returns on equity (ROE) and Tobin Q as measurements for firm performance, debt ratio was used as a proxy for capital structure. The panel data analysis revealed a positive significant relationship between capital structure and performance of firms in Nigeria. The study then concluded that strengthen capital structure will improve the performance of real sectors in Nigeria, and this will improve the nation's economic growth and development, and provide a way out of economic recession.

REFERENCES

- Abor, J., (2005): "The effect of capital structure on profitability: an empirical analysis of listed firms", *Journal of Risk Finance*, Vol. 8, pp. 364-79.
- Abor, J., (2007): "Debt policy and performance of SMEs: evidence from Ghanaian and South Africa firms", *Journal of Risk Finance*, Vol. 8, pp. 364-79.



- Abu-Rub, N., (2012): "Capital Structure and Firm Performance; Evidence from Palestine Stock Exchange". *Journal of Money, Investment and Banking*, Issue 23, pp. 109-117.
- Adebola, S.A., (2002): "An empirical study of a manufacturing firm's capital structure: the 7up bottling company experience." *Babcock Journal of Management and Social Sciences*, 1(1), pp 1- 15.
- Adeyemi, S.B., and Oboh, C.S., (2011): "The empirical effects of corporate capital structure on the market value of a selection of firms listed on the Nigerian Stock Exchange". *Africa: The Case of Ghana*
- Agarwal, R.K., (2011): "Bank-firm relationships, financing and firm performance in Germany".
- Aghion, P., Dewatripont, M., and Rey, P., (1999): "Competition, financial discipline and growth." *Review of Economic Studies*, 66, pp 825- 852.
- Akintoye, I.R., (2008): "Effect of capital structure on firms' performance: the Nigerian experience." *European Journal of Economics, Finance and Administrative Sciences*, 10, pp 233- 243.
- Ali S., (2011): "Capital Structure and Firm Performance: Evidence from Iranian
- Allen N., and Berger, (2002): "Capital Structure and Firm Performance: A New Approach to Testing Agency Theory and an Application to the Banking Industry".
- Ang, J.S., Cole, R.A., and Lin, J.W., (2000): "Agency costs and ownership structure." *Journal of Finance*, 55, pp 81- 106.
- Arbabiyan, A., and Safari, M., (2009): "The effects of capital structure and profitability in the listed firms in Tehran Stock Exchange", *Journal of Management Perspective*, Vol. 33, pp. 159-175.
- Babalola, Y. A., (2012): "The Effects of Optimal Capital Structure on Firms' Performances in Nigeria".
- Bai, J., and Ng, S., (2004): "A PANIC attack on unit roots and cointegration". *Econometrical Journal*, 72(4), 191-221.
- Bai, J., Kao, C., and Ng, S., (2009): "Panel cointegration with global stochastic trends". *Journal of Econometrics*, 149(1), 82-99.
- Baltagi, B. H., (2005): "*Econometric Analysis of Panel Data*", third Edition, New York: John Wiley & Sons Inc.
- Barclay, M.J., and Smith Jr, C.W., (1996): "On financial architecture: leverage, maturity and priority." *Journal of Applied Corporate Finance*, pp 4- 17.
- Barclay, M.J., and Smith Jr, C.W., (2001): "The capital structure puzzle: another look at the evidence" in Chaw, D.H (ed), *The New Finance: Where Theory Meets Practice*. New York, McGraw- Hill.
- Baxter, D., (1967): "Leverage, Risk of ruin and the Cost of capital". *Journal of Finance*, 22(4), 395-403.
- Beiner, S., Wolfgang, D., Markus, M., Schmid and Heinz Z., (2006): "An Integrated Framework of Corporate Governance and Firm Valuation".
- Berger, A., and Bonaccorsi di Patti, E., (2006): "Capital structure and firm performance: a new approach to testing agency theory and an application to the banking industry", *Journal of Banking and Finance*, Vol. 30, pp. 1065-102.
- Berger, A.N., and di Patti, E.B., (2002): "Capital structure and firm performance: a new approach to testing agency theory and an application to the banking industry." *Federal Reserve System and Wharton Financial Institutions Centre*, pp 1- 37.
- Berle, A.A., and Means, G.C., (1932): "*The Modern Corporation and Private Property*. New York, Macmillan."



- Bettis, R.A., and Hall, W.K., (1982): "Diversification strategy, accounting determined risk and accounting determined return." *Academy of Managerial Journal*, 25, pp 254- 264.
- Bhaduri, S. N., (2002): "Determinants of capital structure choice: A study of the Indian corporate sector". *Applied Financial Economics*, 12, 655-665.
- Boodhoo, R., (2009): "Capital structure and ownership structure: a review of literature. 'The Journal of on line Education', January Edition, pp 1- 8.
- Boodhoo, R., (2009): "Capital structure and ownership structure: a review of literature." *The*
- Booth, L., Aivazian, V., Hunt, A., and Maksimovic, D., (2001): "Capital structure in developing countries", *Journal of Finance*, Vol. 56, pp. 87-130.
- Bradley, M., Jarrell, G.A., and Kim, E.H., (1984): "On the existence of an optimal capital structure: theory and evidence." *Journal of Finance*, 39, pp 857- 878.
- Brigham, E., and Gapenski, L., (1996): "*Financial Management*". Dallas, Dryden Press.
- Brown, M.B., and Forsythe, A.B., (1974): "Robust tests for equality of variances". *Journal of the American Statistical Association*, Vol. 69, pp. 364-367..
- Buch, C., (1998): "Toward universal banking – risks and benefits for transition economies, in S. Black and M. Moersch, Eds, 'Competition and convergence in financial markets: the German and Anglo-Saxon models", Amsterdam, pp. 333–368.
- Castanias, R., (1983): "Bankruptcy risk and optimal capital structure." *Journal of Finance*, 38, pp 1617- 1635.
- Cecile C., (2006): "The valuation effects of long-term changes in capital structure". *International Journal of Managerial Finance*. Vol 2.
- Chakraborty, I., (2010): "Capital structure in an emerging stock market: The case of India", *Research in International Business and Finance*, Vol. 24, pp. 295-314.
- Champion, D., (1999): "Finance: the joy of leverage", *Harvard Business Review*, Vol. 77, pp. 19-22.
- Charles A., (2006): "The Stock Market and the Financing of Corporate Growth in
- Chen, J., (2004): "Determinants of capital structure of Chinese-listed companies", *Journal of Business Research*, Vol. 57 No. 12, pp. 1341-51.
- Chiang, Y., Chang, P., and Hui, C., (2002): "Capital structure and profitability of the property and construction sectors in Hong Kong", *Journal of Property Investment and Finance*, Vol 20, pp. 434-53.
- China", *China Economic Review*, Vol. 17 No. 1, pp. 14-36. *International Research Journal of Finance and Economics - Issue 70 (2011) 29*
- Coakley, J.A., Fuertes, M., and Smith, R.P., (2006): "Unobserved heterogeneity in panel time series models". *Computational Statistics & Data Analysis*, 50(9), 2361-2380.
- Companies".
- Dansetz, H., and Lehn, K., (1985): "The structure of corporate ownership: causes and consequences." *Journal of Political Economy*, 93, pp 1155- 1177.
- David R., (2009): "How to do xtabond2: An Introduction to Difference and System GMM in Stata".
- DeAngelo, H., and DeAngelo., L., (1985): "Managerial ownership of voting rights: A study
- Deesomsak, R., Paudyal, K., and Pescetto, G., (2004): "The determinants of capital structure: evidence from the Asia Pacific region", *Journal of Multinational Financial Management*, Vol.14 Nos 4-5, pp. 387-405. *28 International Research Journal of Finance and Economics - Issue 70 (2011).*
- Demirgüç-Kunt, A. and Levine, R., (1996b): "Stock markets, corporate finance and economic growth: an overview", *The World Bank Economic Review*, 10: 223-39.



- Demirgüç-Kunt, A., and Levine, R., (1996a): “Stock market development and financial intermediaries: stylized facts”, *The World Bank Economic Review*, 10 (2): 291-321.
- Dirk H., (2011): “Can the Trade-off Theory Explain Debt Structure?”
- Ebaid, E. I., (2009): “The impact of capital-structure choice on firm performance: empirical evidence from Egypt”, *The Journal of Risk Finance*, Vol. 10, No. 5, pp. 477-487.
- Eberhardt, M., and Teal, F., (2011): “Econometrics for Grumblers. A New Look at the Literature
- Egyankosh, V., (2012): “Capital Structure” Unit 17.
- Fama, E., and French, R.K., (2002): “Testing trade off and pecking order predictions about dividends and debt”, *The Review of Financial Studies*, Vol. 15 No. 1, pp. 1-33.
- firms in Ghana”, *Journal of Risk Finance*, Vol. 6, pp. 438-47.
- Frank, M., and Goyal, V., (2003): “Testing the pecking order theory of capital structure”, *Journal of Financial Economics*, Vol. 67, pp. 217-48.
- Friend, I., and Lang, L., (1988): “An empirical test of the impact of managerial self-interest on corporate capital structure”, *Journal of Finance*, Vol. 43, pp. 271-81.
- Gharsalli M., (2011): “French firm’s financing choices: towards a reconciliation of the static trade-off theory and the pecking order theory?”
- Ghosh, C., Nag, R., and Sirmans, C., (2000): “Finance: the joy of leverage”. *Real Estate Economics*, Vol. 28, pp. 363-84.
- Gleason, K.C., Mathur, L.K., and Mathur, I., (2000): “The interrelationship between culture, capital structure and performance: evidence from European retailers.” *Journal of Business Research*, 50, pp 185- 191.
- Gorton, G., and Rosen, R., (1995): “Corporate control, portfolio choice and the decline of banking.” *Journal of Finance*, 50, pp 1377- 1420.
- Habib, M.M., and Victor, B., (1991): “Strategy, structure and performance of US Manufacturing and service MNCs: a comparative analysis.” *Strategic Management Journal*, 12, pp 589- 606.
- Hadlock, C., and James, C., (2002): “Do banks provide financial slack?”, *Journal of Finance*, vol. 57, pp. 1383-420.
- Hausman, D.M., (1998): “*Causal asymmetries*”. New York, Cambridge University Press.
- Huang, S., and Song, F., (2006): “The determinants of capital structure: evidence from Ike M., Manohar S., and Kimberly C. G., (2001): “The evidence from Canadian firms on multinational diversification and performance”.
- Ilya A., and Strebulaev, (2003): “Do Tests of Capital Structure Theory Mean What They Say?”
- Ishola, R. A., (2008): “Sensitivity of performance to capital structure”, *European Journal of*
- James L., and Berens, (1995): “The Capital Structure Puzzle”.
- Jean M., (2012): “Capital Structure of a Business”
- Jensen, M., (1986): “Agency costs of free cash flow, corporate finance and takeovers.” *American Economic Review*, 76, pp 323- 329.
- Jensen, M., (1988): “Takeovers: their causes and consequences.” *Journal of Economic Perspectives*, 2, pp 21- 48.
- Jensen, M., and Meckling, W., (1976): “Theory of the firm: managerial behaviour, agency Costs and capital structure.” *Journal of Financial Economics*, 3, pp 11- 25.
- Jensen, M., and Ruback, R., (1983): “The market for corporate control: the scientific evidence.”
- John J., and McConnell, H. S., (1995): “Equity ownership and the two faces of debt”.



- Johnny J., (2008): "The relative influence of competitive intensity and business strategy on the relationship between financial leverage and performance". *The British Accounting Review* 40, 71-86
- Joshua A., (2005): "The effect of capital structure on profitability. An empirical analysis of listed firm in Ghana." *The Journal of Risk Finance* vol. 6. No 5. Pp 438-445
- Joshua A., (2007): "Debt policy and performance of SMEs: Evidence from Ghanaian and South Africa firms". *The journal of Risk Finance*. Vol 8. No 4, pp 364-379.
- Journal of Financial Economics*, 11, pp 5- 50.
- Journal of on line Education*, January Edition, pp 1- 8.
- Julija T., (2012): "The determinants of capital structure in the Baltic States and Russia"
- Karadeniz, E., Kandir, Y. S., Balcilar, M., and Onal, B. Y., (2009): "Determinants of capital structure: evidence from Turkish lodging companies", *International Journal of Contemporary Hospitality Management*, Vol. 21, No. 5, pp. 594-609.
- Kester, W., (1986): "Capital and ownership structure: a comparison of United States and Japanese manufacturing corporations", *Financial Management*, Vol. 15, pp. 5-16.
- Kinsman and Newman, (1998): "Debt associated with lower firm performance: findings calls for review of rise in debt use." Graziado Business Report Fall, Working paper.
- Kirti M., (2007): "An analysis of the debt-equity structure of leading hotel chains in India". *International Journal of contemporary Hospitality Management*.
- Klaus H., and Yinghong C., (2004): "Performance of the Swedish real estate sector". Working paper, available at SSRN://ssrn.com/abstract=495442
- Kochhar, R., (1996): "Explaining firm capital structure: the role of agency theory vs Transaction cost economics." *Strategic Management Journal*, 17, pp 713- 728.
- Kofee, (2012): " Understanding the Stock Market".
- Krishnan, V.S., and Moyer, R.C., (1997): "Performance, capital structure and home country: an analysis of Asian corporations." *Global Finance Journal*, 8, pp 129- 143.
- La Porta, R., Lopdez-de-Silanes, F., Shleifer, A., and Vishney, R., (2002): 'Investor Protection and Corporate Valuation', *Journal of Finance*, 57(3), June, p. 1147-1170.
- Levin, A., Lin. C.F., and Chu, C.S. J., (2002): "Unit root tests in panel data: Asymptotic and finite-sample properties". *Journal of Econometrics*, Vol. 108, pp. 1–24.
- Lintner, J., (1956): "Capital Structure and Performance of Firm".
- Mackie- Mason, J (1990): "Do taxes affect corporate financing decisions?" *Journal of Finance*, 45, pp 1471- 1494.
- Maddala, G. S., and Wu, S., (1999): "A Comparative Study of Unit Root Tests with Panel Data and New Simple Test". *Oxford Bulletin of Economics and Statistics*, 6 (1), 631-652, November.
- 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.
- Margaritis, D., and Psillaki, M., (2006): "Capital structure and firms efficiency in New Zealand." *Journal of Finance*.
- Marsh, P.R., (1982): "The choice between equity and debt: an empirical study." *Journal of Finance*, 37, pp 121- 144.
- Mesquita, J.M.C., and Lara, J.E (2003): "Capital structure and profitability" The Brazillian case working paper. Academy of Business and Administration Sciences conference. Vancouver, July 11-13.



- Min-Tsung, C., (2009): “Relative effects of debt and equity on corporate operating performance: A quantile regression study”. *International Journal of Management*. Vol 26, No.1
models of capital structure”, *Journal of Financial Economics*, 51, 219–244.
- 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., (1958): “The cost of capital, corporation finance and the theory of investment.” *American Economic Review*, 48, pp 261- 297.
- Modigliani, F., and Miller, M., (1963): “Corporate income taxes and the cost of capital: a correction”, *American Economic Review*, Vol. 53, pp. 443-53.
- Myers, S. C., (2003): “Financing of corporations”. In G. M. Constantinides, M. Harris, & R. Stulz (Eds.), *Handbook of the economics of finance*, pp. 215–253.
- Myers, S., (1984): “The capital structure puzzle”, *Journal of Finance*, Vol. 39, pp. 575-92.
- Myers, S.C., and Majluf, N.S., (1984): “Corporate financing and investment decisions when firms have information that investors do not have”, *Journal of Financial Economics*, Vol. 13 No. 2, pp. 187-221.
- Nigeria”
Nigerian Stock Exchange, (1996-2010): “*Fact Book*”. Lagos.
of public corporations with dual classes of common stock”. *Journal of Financial Economics*, 14: 33–69.
- Ogebe, O. P., (2011): “The Impact of Capital Structure on Firms’ Performance in Oke, O. O., and Afolabi, B., (2008): “Capital structure and industrial performance in Nigeria”, *Journal of Social Science*, Vol. 4(1), pp 13-21.
- Omorogie, A. N., and Erah, D. O., (2010): “Capital structure and corporate performance in Nigeria: an empirical investigation”, *AAU Journal of Management Sciences*, Vol. 1 (1), pp 43-52.
- on Cross Country Growth Empirics”. *Journal of Economic Surveys*, 25(1), 109-155.
- Onaolapo, A. A., (2010): “Capital Structure and Firm Performance: Evidence from Nigeria”.
- Pandey, I. M., (1999): “Financial management” (8th ed.). New Delhi: Vikas Publishing House PVT Ltd.
- Pedroni, P., (1999): “Critical values for cointegration tests in heterogeneous panel with multiple regressors”. *Oxford Bulletin of Economics and Statistics* 61(Special Issue):653-670.
- Pedroni, P., (2004): “Panel cointegration: Asymptotic and Finite Sample Properties of Pooled Time Series Tests with an Application to the PPP Hypothesis. *Econometric Theory* 20(3): 596-625.
- Penrose, E.T., (1959): “The Theory of the Growth of the Firm”. New York, Wiley.
- Pesaran, M.H., (2006): “Estimation and inference in large heterogeneous panels with a multifactor error structure”. *Econometrica*, 74(4), 967-1012.
- Pesaran, M.H., (2007): “A Simple panel unit root test in the presence of cross section dependence”, *Journal of Applied Econometrics*, 22(2): 265-312.
- Pesaran, M.H., and Smith R.P., (1995): “Estimating long-run relationships from dynamic heterogeneous panels”, *Journal of Econometrics*, 68(1), 79-113.
- Philips, P.A., and Sipahioglu, M.A., (2004): “Performance implication of capital structure: evidence from quoted UK organizations with hotel interests”. *The service industries journal*. Vol 24, no 5, pp 31-51
- Pinegar, M., and Wilbricht, L., (1989): “What managers think of capital structure theory: a survey. *Financial Management*”, Winter, pp 82- 91.



- Puwanenthiren P., (2011): "Capital Structure and Financial Performance: Evidence from Selected Business Companies in Colombo Stock Exchange Sri Lanka"
- Rajan, R., and Zingales, L., (1995): "What do we know about capital structure? Some evidence from international data", *The Journal of Finance*, Vol. 50, pp. 1421-60.
- Rajendran K., (2011): "Effect of corporate governance on capital Structure: a case of the Srilankan listed Manufacturing companies"
- Rao, N.V., Al- Yahyaee, K.H.M., and Syed, L.A.M., (2007): "Capital structure and financial performance: evidence from Oman." *Indian Journal of Economics and Business*, pp 1-23.
- Rappaport, A., (1998): "Creating Shareholder Value: A Guide for Managers and Investors", 2nd ed., New York, NY, The Free Press.
- Razak, N.H.A., Ahmad, R., and Aliahmed, H.J., (2008): "Government ownership and performance: An analysis of listed companies in Malaysia", *Corporate Ownership and Control*, vol. 6, no. 2, pp. 434-442.
- Roden, D., and Lewellen, W., (1995): "Corporate capital structure decisions: evidence from leveraged buyouts", *Financial Management*, Vol. 24, pp. 76-87.
- Rosemary, S., (2012). "Capital structure."
- Saad, N. M., (2010): "Corporate Governance Compliance and the Effects to capital Structure". *International Journal of Economics and Financial*, 2(1), 105-114.
- Salawu, R. O., and Agboola, A. A., (2009): "The determinants of capital structure of large non-financial listed firms in Nigeria", *The International Journal of Business and Finance Research*, 2 (2), 75-84.
- Salvatore C., (2010): "Stock Market Development and Economic Growth.
- Samuel F., (2013): "Capital Structure, Product Market Competition and Firm Performance: Evidence from South Africa".
- Sang M. L., (2010): "Financial crisis and capital structure".
- Semiu B. A., Collins S. O., (2011): "Perceived Relationship between Corporate Capital Structure and Firm Value in Nigeria".
- Senbet, L.W., and Otchere, I., (2005): "Financial Sector Reforms in Africa : Perspectives on Issues and Policies". Prepared for the Annual World Bank Conference on Development Economics (ABCDE), Dakar , Senegal.
- Shoiab, M. M., (2011): "Impact of capital structure on firm`s financial performance: evidence from Pakistan", Vol. 17(5), pp 56-101.
- Shyam-Sunder, L., and Myers, S. C., (1999): "Testing static tradeoff against pecking order
- Simon O., (2011): "Impact of capital structure on industrial performance in Nigeria". *Social Sciences*, Vol. 7(1), pp 230-236.
- Stinchcombe, A.L., (1965): "Social structure and organizations," in March, J.G (ed) *Handbook of Organizations*. Chicago, Rand McNally.
- Sydney L., and Charles S., (1998): "How important is the stock market effect on consumption?" *Research Paper*9821, Federal Reserve Bank of New York.
- Sydney L., and Charles S., (1999): "How important is the stock market effect on consumption?" *Economic Policy Review*, Federal Reserve Bank of New York, issue July, pages 29-51.
- Tang, C.H., and Jang, S.S., (2007): "Revisit to the determinants of capital structure: a comparison between lodging firms and software firms", *International Journal of Hospitality Management*, Vol. 26 No. 1, pp. 175-87.



-
- Tzelepis, D., and Skuras, D., (2004): "The effects of regional capital subsidies on firm performance: an empirical study." *Journal of Small Business and Enterprise Development*, 11, pp 121- 129.
- Wald, J., (1999): "How firm characteristics affect capital structure: an international comparison", *Journal of Financial Research*, Vol. 22, pp. 161-87.
- Watson and Head, A., (2007): "Capital Structure and Firm Performance".
- Weston, J.F., and Copeland, T.E., (1998): "Managerial Finance"2nd Edition, New York, CBS College Publishing.
- Wiwattanakantang, Y., (1999): "An empirical study on the determinants of the capital structure of Thai firms", *Pacific-Basin Finance Journal*, Vol. 7, pp. 371-403.
- Worthington, A.C., and West, T., (2001): "Economic Value-Added: A Review of the Theoretical and Empirical Literature ", *Asian Review of Accounting*, Vol. 9, No. 1, pp. 67-86.
- Worthington, A.C., and West, Tracey., (2004): "Australian evidence concerning the information content of economic value-added", *Australian Journal of Management*, Vol. 29, No. 2, pp. 201- 24.
- Zeitun, R., and Tian, G.G., (2007): "Capital structure and corporate performance: evidence from Jordan." *Australasian Accounting, Business & Finance Journal*, 1(4), pp 40- 61.