

The Impact of Firms' Liquidity on Capital Structure: Evidence from Listed Conglomerates in Nigeria

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Abstract

Extant literature revealed evidence of inconsistent outcome on the relationship between liquidity and capital structure across different economies. In order to check for settled empirical outcome which enables optimal level of gearing that ensures stable liquidity, this study examines the impact of liquidity on the capital structure of listed conglomerates firms in Nigeria using ex-post facto research design. Data were extracted from the annual reports and accounts of 5 sampled firms in the conglomerates sector from 2008 to 2017 analysed using regression analysis. The study found significant relationship between current ratio and capital structure of conglomerates. However, a positive and insignificant relationship was found between the quick ratio and cash conversion circle on capital structure of listed conglomerates firms. The study concludes that varying the size of current ratio through effective working capital management (especially, inventories) would ensure that gearing is positively utilized as a trade-off for liquidity stability. Lower cash conversion circle though not significant could affect liquidity position when the circle is quicker and cash recovery of debt is enhanced. The study recommends that corporate managers should maximize the benefit accruing to liquidity management through liquidity planning because of its correlation with leverage level and eventual corporate survival and growth.

Keywords: Capital Structure, Conglomerates, Firms, Liquidity

Introduction

One of the major reasons that may cause liquidation of a firm is the inability to make adequate profit. The persistent drop/decline of the latter is one of the basis of measuring the 'going concern' of an entity. As such, companies are developing various strategies to improve their liquidity

position. Strategies which can be adopted within the firm to improve liquidity and cash flows concerns the management of working capital which is often neglected (Pass and Pike, 1984). However, for the very survival of business, the firm should have requisite amount of liquidity which

should be neither in excess of requirement nor inadequate in meeting requirement. Excess liquidity means accumulation of idle funds, which may lead to lower profitability, increase speculation, extension of liberal credit terms and liberal dividend policy. However, inadequate liquidity results in interruption of business operations. Hence, a proper balance between these two extreme situations should be managed for efficient operations of business through careful liquidity management (Eljelly, 2004).

The realm of cash and liquidity management was once a simple practice terrain, access to capital was rarely a bottle-neck, even for highly-levered firms, and many had strong, long-standing relationships with a single bank that helped meet most of their funding and cash management needs (Campello et al;2011). They however maintained that, the form of financing and types of funding sources will define the firms' capital structure. The process of financing takes a very important place in firms' management because it ensures financial continuity necessary for growth and maintaining competitiveness within the business environment.

Funding is the process of acquiring, utilizing and ensuring optimum returns to the source of funds. If income, derived from the use of debt, is greater than the cost of capital, then it can be said that using debt is a good financial decision. However, it still remains an

open question whether it is better to use internal sources of financing (cash, dividends, and non-matured obligations.) or to use external sources and pay for compensation in the form of interest. Access to external funding is generally easier for firms with history of good liquidity evidenced by their liquidity ratios judging by rule of thumb or industry average (Brigham and Houston, 2009).

Leverage ratios show the ways in which a firm finances its assets. They represent a measure of the degree of investment risk in the firm, and determine the degree of use of borrowed funds. Firms with significantly high levels of debt lose financial flexibility, may have problems in finding new investors, and may be faced with the risk of bankruptcy (Mello & Persons, 2000). However, debt is not necessarily bad, if the level of debt is under control and regularly monitored through time, and borrowed funds. Debt can result in increased return on investment. A liquid firm is one that promptly pays all its outstanding obligations promptly and as such is desirous of funding sources.

And the most important is that since the firm is able to control its net leverage through its dynamic cash policy, firm value is relatively insensitive to its long-term debt level structure. That is, in contrast with static trade-off models where the central issue is the choice of capital

structure in the face of tax benefits of debt and bankruptcy costs, under the dynamic optimal cash and dividend policy, the choice of long-term debt levels is of secondary importance (Anderson & Carverhill, 2010).

Another important implication is that there is a hierarchy among sources of funds but this hierarchy is a function of business conditions. If business conditions are very good the hierarchy is internal funds first, short-term debt second, and equity third. However, in poorer business conditions the firm will avoid short-term debt and will turn to equity issuance if internal funds are not available.

Liquid assets provide a cushion that would allow the firm to survive a period of low earnings during which the firm might be unable to access capital markets or could do so only at a very high cost. The firm's financial structure will affect this decision because the degree of leverage used by the firm will affect the likelihood that cash flows will be insufficient to cover debt service and other fixed charges. This creates a possible linkage from high debt to high liquidity and to slow growth (Brigham & Houston, 2009).

Liquidity management and profitability are very important in the development, survival, sustainability, growth and performance. Profitability does not translate to liquidity in all cases. A company may be profitable without necessarily being liquid. Therefore,

liquidity should be managed in order to obtain an optimal level, that is, a level that avoid excess liquidity. Therefore, liquidity level should not fall below minimum requirement as it will lead to the inability of the organization to meet short term obligation that are due (Almeida, Campello & Welsbach, 2004 'and Bolton, Chen and Wang: 2011).

A number of studies have been conducted on liquidity and capital structure at different times in both developed, as well as developing countries, most of which are well documented in accounting and finance literature. These studies include Anderson (2002), Sibilkov (2007), Jumreonvong & Jiraporn (2010), Anderson and Caverhill (2010), Udomsirikul, Junireornvong and Jiraporn (2010), Olayinka (2011), Haddad (2012), Sarlija & Harc (2012), Owlabi and Obida (2012), Uremadu (2012), Achchutan and Kajanathan (2013) and Anojan (2014). These studies found strong link between liquidity to capital structure while the work of Anojan exhibited total indifference in terms of causality between the two variables.

Only few studies of this type were conducted in Nigerian corporate landscape and none (to the best of researcher's knowledge) in the conglomerates industry. The studies carried out as mentioned above have used period of less than ten years, and contained methodological pitfalls in

areas of sampling, research design and tools of data analysis. The sector been considered in the prior studies on liquidity management and capital structure are mostly financial services sector hence, this present study was carried out to fill the gap identified in terms of data period and methodological inconsistencies as well as carrying such study in relatively new area in the Nigerian corporate environment. The study employs a slightly modified approach from the current studies hence, the study covers a period of ten years (2005 to 2014) and used Debt to Equity Ratio (DER) as a measure of capital structure while cash conversion cycle (CCC), Current Ratio (CR) and Acid-test Ratio (AR) were used as a measure of liquidity. Thus, this study intends to provide answers to the following questions:

- a) What is the relationship between Current ratio and capital structure in conglomerates in Nigeria?
- b) What is the relationship between Acid-test ratio and capital structure in conglomerates in Nigeria?
- c) What impact does cash conversion cycle has on capital structure in conglomerates in Nigeria?

Literature Review

Khalaj, Farsian and Karbalaee (2013) investigated the linkage between liquidity and capital structure among the top 100 Malaysian public listed companies from 2006 to 2010 financial years. Liquidity of a firm, which is the independent variable of research, has been measured by current

and acid test ratios. Research finding shows that there is a positive and significant relationship between liquidity ratios and leverage. Thus, Malaysian firms with more liquid stocks prefer equity to enjoy lower cost of capital.

Similarly, Kajanathan and Achchuthan (2013) conducted a study on Liquidity and Capital Structure in Sri Lanka Telecom Plc. The study which covers a period between 2004 and 2008, find shows that the decision on the capital structure depends on the liquidity management of the Sri Lanka Telecom Plc. Firms should focus on the liquidity management to take the decision on the capital structure which should lead to the firms' value in the long term perspective (Anojan 2014).

Draniceanu (2013) investigated the impact of capital structure on firm value for Romanian companies at the same time considering the determinants of leverage. In addition to this, the study tries to empirically test the influence of debt structure on firm value given different growth opportunities of Romanian companies using Pooled regression model based on three objectives stated in the study. The results show that capital structure has a positive impact of firm value, for both firms facing low growth opportunities and firms facing high growth opportunities. Profitability and liquidity have been found to be the negative determinants of capital structure, while growth opportunities,

firm size and firm financial quality have been found to be the positive determinants of capital structure. This imply the factors to which capital structure is sensitive to, at different level of sensitivity.

In the same vein, Sarlija and Harc (2012) investigated the impact of liquidity on the capital structure of Croatian firms. The results revealed that there are statistically significant positive correlations between liquidity ratios and leverage ratios. Also, there are statistically significant positive correlations between leverage ratios and the structure of current assets. The relationship between liquidity ratios and the short-term leverage is stronger than between liquidity ratios and the long-term leverage. The more liquid assets firms have, the less they are leveraged. Long term leveraged firms are more liquid. Increasing inventory levels leads to an increase in leverage. Furthermore, increasing the cash in current assets leads to a reduction in the short-term and the long term leverage.

Furthermore, Osuji and Anthony (2012) examined the impact of capital structure on financial performance (in terms of liquidity and efficiency) of Nigerian firms using a sample of thirty non-financial firms listed on the Nigerian Stock Exchange during the period 2004 – 2010. Panel data for the selected firms were generated and analysed using ordinary least squares (OLS) as a method of estimation. The

result shows that a firm's capital structure surrogated by debt ratio, has a significantly negative impact on the firm's financial measures (Return on Asset (ROA) and Return on Equity, (ROE). The study's findings were consistent with prior empirical studies examined and provide empirical evidence in support of Agency cost theory.

Among the theories reviewed in respect of capital structure and liquidity, the pecking order theory (POT) is found to be more plausible in explaining the predictive relationship between the liquidity and capital structure. Therefore POT is the underpinning theory for the study. The POT as the underpinning theory is found popular and useful because of its simplicity in explaining the relationship between liquidity and capital structure.

Methodology

This study adopted ex-post facto research design because the study entails the use of annual report and accounts of the quoted conglomerates companies in Nigeria. The population of this study consisted of all the six (5) Conglomerate companies quoted on the Nigeria Stock Exchange as at 31st December, 2018.

The source of data for this study is secondary collected from the fact book of the Nigerian Stock Exchange and annual reports and accounts of the five

sampled conglomerates companies quoted from 2008 to 2017.

The variables of the study comprise of dependent variables, independent variables, and control variables. The dependent variable is capital structure; the independent variable is Liquidity while the control variable will includes

firm size, growth, and return on assets. However, to remain consistent with previous studies, measures pertaining to Liquidity and capital structure were taken from the work of Sarlija and Harc (2012), Uremadu (2012), Khalaj, Farsian and Karbalaee (2013) and Kajanathan and Achchutan (2013).

Table 1: Variables of the Study their and Measurements

Dependent Variable	Debt-Equity	(Total debt/ Total Equity)
Independent Variables	Current Ratio	Current Assets/Current Liabilities
	Acid Test Ratio	Current Assets-Stocks/Current Liabilities
	Cash Conversion Cycle	Account receivable + Inventory Conversion Period – Account Payable Period
Controlled Variable	Size	Log of Sales
	ROA	Profit after tax/ Total Assets

Source: Developed by the Researcher Based on Previous Studies

The study's model was adopted from the study of Kajathan and Achchutan (2013) and Khalaj, Farsian and Karbalaee (2013) with modification in control variables in order to have an improved empirical relationship by controlling some variables with known relationship as evidenced by previous studies. Equally, the elements used in the model are those conforming to the

information available in the annual reports of sampled conglomerates companies. The two studies from whom this model was adopted have been widely used by other scholars.

The model is stated thus:

$$DTE = \beta_0 + \beta_1 CR_{it} + \beta_2 QR_{it} + \beta_3 CCC_{it} + \beta_4 SIZE_{it} + \beta_5 GROWTH_{it} + \beta_6 ROA_{it} + \epsilon_i$$

Results and Discussion

Table 2: Correlation Matrix of Conglomerates Firms

	DTE	CCC	CR	ACID-T	FS	GROWTH
DTE	1.0000					
CCC	0.0333	1.0000				
CR	0.2208	0.1075	1.0000			
ACID-T	0.1266	0.0730	0.4994	1.0000		
FS	0.0243	0.5466	0.0341	-0.0004	1.0000	
GROWTH	0.0833	0.1005	0.2156	0.0008	0.2153	1.0000

Source: Computed from Annual Report and Accounts of Conglomerates Using STATA 14

Table 2 shows the correlation coefficients on the relationship between the dependent variables (CS) and independent variables (L) proxied by current ratio, quick ratio, and cash conversion circle tax as well as the controlled variables namely firm size, growth and returns on assets. The values of the correlation coefficients range from -1 to 1. The sign of the correlation coefficients indicates the direction of the relationship (positive or negative), the absolute values of the correlation coefficient indicates the strength, with larger values indicating stronger relationship and the lower value showing weaker relationship. The correlation coefficients on the

main diagonal are 1.0, because each variable has a perfect positive linear relationship with itself.

It is also shown on Table 2 that, the correlation coefficients for debt to equity and current ratio is 22% which is not close to 1, yet positive; this indicates that debt to equity ratio to current ratio as a measure of liquidity is weak, but positively correlated. The correlation results presented on Table 2 also indicate that all the explanatory variables with the exception of firm size (as a controlled variable) and are positively correlated with the explained variable.

Table 3: Ordinary Least Square Regression Results
OLS

Variables	Coefficient	Std Err	T	p> t
CR	0.4507505	2162266	2.08	0.043*
Acid Test	0.6202269	9749037	-0.64	0.528
CCC	0.0002813	0.000318	0.88	0.381
Growth	0.048047	1086403	0.44	0.661
FS	0.0394282	0.394282	-1.30	0.199
ROA	-1.636178	0.5215225	3.14	0.003
cons	753762	392647.5	1.92	0.06
R Squared	0.2769			
Adj. R Square				
F Value	0.2260			
R Squared:	2.74			

Source: Computed from Annual Report and Accounts of Conglomerates Using STATA 14, * 5% level of significance

The regression results, as shown on table 3 indicates, that current ratio has positive and statistically significant relationship with capital structure at 5% level of significance. The results clearly show that current ratio which is

a principal component of liquidity displayed positive coefficient of 0.4508 and significant at 5% level of significance. This signifies that current ratio which represents the excess ratio of current assets over current liabilities

value created by the conglomerates firms during the years under investigation has positive relationship with the capital structure of the firms in the conglomerates sector of the Nigerian economy.

The results of positive and significant relationship between liquidity and capital structure is consistent with the result of some recent studies on liquidity and capital structure like Dranice (2013) , Jarliga and Harc (2012), Nwidobe(2012), and Akdal (2011). The outcome of the study and its consistency with similar studies in the financial and non-financial services industry indicates the contextual agreement between this study and others from different industries and jurisdictions. Although studies like Abora (2005) recorded more positive variables, it becomes apparent owing to the fact that the study accommodated data from more than one industry which were further sub-grouped into smaller and larger firms.

Conversely, the result contradicts the findings of Haddad (2012), Uremadu and Efobi (2012), Huang and Sung (2004), and Anderson (2002) which revealed the existences of positive and insignificant relationship between liquidity and capital structure. Most studies, in this category, either used short term debt to equity or long term debt to equity as conglomerates sector or draw their data using across listed companies without being industry specific. The reasons for the usual

inconsistency and ambiguity of results in Liquidity and Capital Structure studies have been attributed to various proxy measurements, time horizon and data period, sample size and spread among others.

Conclusion and Recommendations

The excess of current assets over current liabilities put firms in comfortable position in meeting their short term obligations without the pressure of increasing gearing levels to finance short term obligations which ought to secure funding from working capital. Increasing and or stable current ratio could positively reduce the desire for frequent debt and declining levels of current assets against current liabilities could potentially increase firm's debt levels.

However, acid test ratio cash conversion cycle are insensitive to changes in firms' leverage levels. As such, inventory management which provides the key to corporate liquidity is the key factor that denotes the major odd between the current ratio and acid-test. Since its absence in the latter has resulted in significant impact, its proper handling could go a long way in taming liquidity issues.

The study recommend where the costs of debt is higher, management in conglomerate firms could devise a means of increasing their current ratio (usually by increasing currents asset or reducing currents liability in order to guard against acquiring the possibility

of acquiring more debt to finance due obligations. If however, the cost of debts is low, more short term debt could be taken even when current assets is reduced to shore up current liabilities.

Stock Exchange (CSE) in Sri Lanka. Published and Presented in ICCM 2014, Faculty of Management Studies and Commerce, University of Jaffna, Sri Lanka.

References

- Abor, J. (2005). The Effect of Capital Structure on Profitability: An Empirical Analysis of Listed Firms *Journal of Risk Finance*, 6(5), 458-445
- Abubakar A, S. (2011), „How do fim characteristics affect capital structure? Some UK Evidence“, available at: <http://ssrn.com/abstract=1775706> (1 February 2014).
- Anderson, R. & Carverhill, A. (2010). Liquidity and Capital Structure, London School of Economics.
- Barges, A. (1963), The Effect of Capital Structure on the Cost of Capital, Prentice-Hall
- Anderson, R. W. (2002). Capital Structure, Firm Liquidity and Growth, in P.Butzen and C.Fuss (eds.), *Firms' Investment and Finance Decisions*, Edward Elgar.
- Anojan, V. (2014) Liquidity Management, Capital Structure and Their Impact on Profitability: A Study of Selected Listed Beverage, Food and Tobacco Firms in Colombo Stock Exchange (CSE) in Sri Lanka. Published and Presented in ICCM 2014, Faculty of Management Studies and Commerce, University of Jaffna, Sri Lanka.
- Asika, N. (1991). *Research Methodology in Behavioural Science*. Nigeria: Longman.
- Bassey, N.E, Arene, C.J., & Okpukpara, B.C. (2012). Impact of Capital Structure on Liquidity and Profitability of Agro-Firm in Nigeria. *Journal of Agric Financing*. Vol 1, No. 2
- Brealey, R. A., Myers, S.C. & Allen, F. (2008). Principles of Corporate Finance, 9th Edition, New York: McGraw-Hill:
- Brigham, E. F., & Houston, J. F. (2009). *Funemental of Financial Management*. Canada: Nelson Education ltd.
- Central Bank of Nigeria Statistical Buletin, 3rd Quarter, 2010
- Diamond, D.W. & Rajan, R.G. (2001). “Liquidity Risk, Liquidity Creation, and Financial Fragility: a Theory of Banking,” *Journal of Political Economy*, Vol. 109(2), pp. 287-327. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=112473.

- Draniceanu, S. M. (2013) Capital structure and firm value. Empirical evidence from Romanian listed companies
- Eljelly, A. (2004). Liquidity-Profitability Tradeoff: An empirical Investigation in An Emerging Market, *International Journal of Commerce & Management*, 14(2). 48 – 61.
- Ghosh, A. (2008). Financial Leverage Changes Associated with Corporate Mergers *Journal of Corporate Finance*, 6 (2000), 377-402.
- Haddad, F. S. (2012) Stock Liquidity and Capital Structure: An Empirical Study on Amman Stock ExchangeEuropean *Journal of Economics, Finance and Administrative Sciences* ISSN 1450-2275 Issue 47 (2012) <http://www.eurojournals.com/EJEFAS.htm>
- Huang, G., & Song, F. M. (2006). The Determinants of Capital Structure: Evidence from China. *China Economic Review*, 17(1), 14-36.
- Hennessy, C.A., & T.M. Whited, (2005), Debt dynamics, *Journal of Finance* 71 (3) 1129-1165.
- Jumreornvong, S. & Jiraporn, P. (2010) Liquidity and Capital Structure: The Case of Thailand
- Jensen, M, (1986). The Agency Costs of Free Cash Flows, Corporate Finance, and Takeovers, *American Economic Review*, Vol. 76(2), pp. 323-329. Available at SSRN: http://papers.ssrn.com/sol3/papers.cfm?abstract_id=99580.
- Jensen, M. & Meckling, W. (1976). Theory of the Firm: Managerial Behavior, Agency Costs, and Capital Structure, *Journal of Financial Economics*, Vol. 3(4), pp. 305-360.
- Kajanathan, R. and Achchuthan, S. (2013) Liquidity and Capital Structure: Special reference to Sri Lanka Telecom Plc *Advances in Management & Applied Economics*, vol. 3, no.5, 2013, 89-99 ISSN: 1792-7544 (print version), 1792-7552(online) *Scienpress Ltd*, 2013
- Kajananthan, R., & Achchuthan, S. (2013). Corporate Governance Practices and Its Impact on Working Capital Management: Evidence from Sri Lanka. *Research Journal of Finance and Accounting*, 4(3), 23-31.

- Li, C., Chen, J., & French, X. (2002). The Relationship between Liquidity, Corporate Governance, and Firm Valuation: Evidence from Russia
- Myers S. (1984), “The capital structure puzzle”, *Journal of Finance*, Vol. 39, Nr. 3, pag. 575-592.
- Modigliani, F. & Miller, M. H. (1958). The cost of capital, corporate finance and the theory of investment. *American Economic Review*, **48**, 261-297
- Miller, M. H. (1977). The Modigliani-Miller Propositions After Thirty Year *Journal of Economic Perspectives*, Vol. 2(4), pp. 99-120.
- Myers, S.C. & Rajan, R (1998). The Paradox of Liquidity *Quarterly Journal of Economics*, Vol. 113(3), pp.733-771.
- Myers, S. & Majluf, N. (1984). Corporate financing and investment decisions when firms have information investors do not have. *Journal of Financial Economics*, **13**, 187-222
- Nwidobie, A. (2012). Capital structure determinants, lessons on corporate finance decision and liquidity. *Journal of fiancé and investment analysis*, Vol. 1, No. 2 (ISSN: 2241- 0988)
- Nwankwo, O, (2014). Effect of capital structure on liquidity of firms in the banking sector. *Mediterranean Journal of Social Sciences*, MCSER Publishing, Rome-Italy
- Nigerian Stock Exchange Market Fact-book, 2012
- NACCIMA (2011) Annual Bulletin
- Ofori, G., (2001). Challenges Facing Conglomerate Industry in West Africa. Conference Proceedings on Conglomerate Industry in West Africa.
- Osuji, C. C. and Anthony, O. (2012) Impact of Capital Structure on the Financial Performance of Nigerian Firms
- Olayinka, A . (2011), Determinants of capital structure: Evidence from Nigerian panel data. *African Economic and Business Review*, 9(1), 1-16.
- Owolabi, S. A. & Obida, S. S.(2012) Liquidity Management and Corporate Profitability: Case Study of Selected Manufacturing Companies Listed on the Nigerian Stock Exchange

- Society for Business and Management Dynamics (2012) Business Management Dynamics Vol.2, No.2, pp.10-25
- Pass, L.C., & Pike, H.R.,(1984). An Overview of Working Capital Management and Corporate Financing, Managerial Finance 10;3, pp.1-11
- Ross, S. A. (1977). The Determination of Financial Structure: The incentive signaling approach. Bell Journal of Economics, 23-40.
- Sarlija, N., & Harc, M. (2012). The impact of liquidity on the capital structure: a case study of Croatian firms. Business Systems Research, 3(1), 30-36.
- Sibilkov, V. (2007), Asset Liquidity and Capital Structure, Sheldon B. Lubar School of Business, University of Wisconsin – Milwaukee, Electronic copy available at: <http://ssrn.com/abstract=594523>.
- Strebulaev, I.A. (2007) Do Tests of Capital Structure Theory Mean What They Say? The journal of finance • vol. lxii, no. 4 • August 2007
- Udomsirikul, P., Jumreornvong, S. & Jiraporn, P. (2010) Liquidity and Capital Structure: The Case of Thailand Electronic copy available at: <http://ssrn.com/abstract=1725745>
- Uremadu, S.O. (2012). Bank Capital Structure, Liquidity and Profitability Evidence from the Nigerian Banking System. *International Journal of Academic Research in Accounting, Finance and Management Sciences* 2(1), (2012).
- Uremadu, S. O. & Efobi, R. U. (2012). The Impact of Capital Structure and Liquidity on Corporate Returns in Nigeria: Evidence from Manufacturing Firms