International Journal of Innovative Research and Advanced Studies (IJIRAS)
Volume 5 Issue 5, May 2018

ISSN: 2394-4404

Capital Structure And Level Of Liquidity: Evidence From Banks In Ghana

Nurideen Ahmed Froko, PhD

Accra Institute of Technology-Open University of Malaysia

Abstract: ***The paper investigated the relationship between capital structure and the level of liquidity of banks in Ghana. The paper followed Froko's multi-construct analysis of capital structure and defined capital structure in terms of short term financial leverage, long term financial leverage and equity risk exposure. The paper is motivated by the fact that although liquidity is an anchor for the very existence of the banking sector, investigating appropriateness of capital structure decision has been limited to profitability parameters. This might have contributed to why banks with good performance prospect collapse over time in Ghana (cited example is UT bank and Capital bank). The main purpose of this paper was to extend the investigation of capital structure to the level of liquidity. The paper used annual data of eleven years spanning from 2004-2014 and panel ordinary least square approach to conduct the estimation of the relationship between three capital structure elements and liquidity of banks.***

The paper found that minimum mean proxy of short term financial leverage (SDA) is negatively related to liquidity but the maximum mean proxy (SDE) showed positive effect on the level of liquidity. These findings were contrary to the long term financial leverage. Equity risk exposure was found to have adverse effect on liquidity. It was concluded that the effect of capital structure on liquidity depends on the element of capital structure in question. It is recommended that management of banks in Ghana should formulate different capital structure policies for each element of capital structure.

Keywords: Capital structure, short term financial leverage, long term financial leverage, equity risk exposure and liquidity

I. INTRODUCTION

Capital structure remains as one of the fundamental corporate financing decisions. It is uncommon to witness a company with either 100% equity or 100% debt. Therefore, to achieve the primary goal of firms, corporate finance managers could not avoid allocating much of their time to capital structure decisions. According to Goyal, (2013), in order to achieve the main goal of firms, management is required to make rational financing decisions regarding optimal capital structure so as to minimize the overall cost of capital and enhance the benefits thereof. This suggests that how firm's management handles its capital structure has consequential influence on whether or not shareholders' wealth could be maximized. Such inference makes it prudent therefore to understand the exact concept of capital structure.

The capital structure of a firm refers to a mix of debt and equity which a firm deems as appropriate to enhance its operations (Friend, 2008). According to Hailu (2015), capital structure refers to several alternatives that could be adopted by a firm to get the necessary funds for its investing activities in a way that is consistent with its priorities. Most of the effort of the financial decision making process is centered on the determination of the optimal capital structure; where the cost of capital is minimized and firms' value is maximized. Traditionally, capital structure has been narrowly defined as long term phenomenon as evidenced in the assumptions of the traditional theory of capital structure. However, capital structure could be operationalised as the composition of debt (such as long-term liabilities, specific short-term liabilities like bank notes, and preferred equity) and common equity which make up the funds with which a firm finances its operations and its growth.

Finance experts and researchers have contributed to providing reliable and valid literature to ease practitioners the stress in making appropriate and effective capital structure decision. One of the traditional contributors in this regard is the work of Modigliani and Miller (1958). The first proposition of Modigliani and Miller (MM) provided easy approach to capital structure decision. The MM proposition I argues that finance managers should not be worried about capital structure since the decision has no implication on firm value. Although Modigliani and Miller (1958) eventually relaxed some of their assumptions, the theory is one of the most widely cited in capital structure literature. Other efforts include financial distress and bankruptcy cost theory, Trade-off theory and pecking order theory (see Amidu, 2007; Frank & Goyal, 2007; Myers, 1984). Much as these theories have strived to provide roadmap for capital structure decision, the efforts have generated mixed propositions creating more complexities for corporate practitioners.

In addition to these theoretical relationships, some empirical or practical studies have emerged to contribute to these theories and provide empirical evidences to support capital structure decision. Researchers generally agree that there is a relationship between capital structure and firm performance (Ai, 1997, Hung, Alber & Eddie, 2002). Empirical evidences suggest that key performance indicators are significantly sensitive to capital structure used in firms. For instance in the study conducted by Akintoye (2008), it was revealed that firm performance is sensitive to capital structure. The empirical studies have sought to determine the appropriateness or effectiveness of capital structure base on its effect on key performance indicators. These studies believed that an appropriate capital structure is one which has positive effect on firm key performance drivers or variables. The empirical studies have revealed interesting but rather conflicting findings on capital structure and profitability. Whiles some show positive effects, others have concluded that capital structure has negative effect. In respect of the theoretical inconsistencies and absence of comprehensive framework to resolving the challenges with capital structure decision, Abor (2005) stated that the best that researchers, academicians and financial practitioners have been able to do in addressing the capital structure challenges are mere prescriptions that satisfy short-term goals. Thus, the absence of the consensus and the mixed results about what constitute optimal capital structure and its effects on firms performance has necessitated the need for further studies.

Unfortunately, these studies have also over concentrated on profitability and returns on equity (see Abor, 2005; Amidu, 2007; Arbabiyan & Safari, 2009; Chakraborty, 2010; Haldlock & James, 2002; Huang & Song, 2006; Mosquita & Lara, 2003; Pandey, 2004; Philips & Sipahioglu, 2004). Thus, the existing studies on capital structure and financial performance have often limited the scope of performance to profitability with less emphasis laid on the other equally important performance indicators. Other performance indicators such liquidity which are supported by capital structure theories have not been adequately investigated. The present study seeks to expand the scope of the capital structure studies to empirically investigate the relationship between capital structure and liquidity using the Ghanaian banking sector.

The paper is industrial specific because empirical evidences have noted that firms in the same industry have more in common than firms in different industries and thus, the capital structure of firms is highly affected due to industry difference (Awunyor-Vitor & Badu, 2012; Harris & Raviv, 1991). Furthermore, Espeperança, Gama and Gulamhussen, (2003), stated that industrial effects are important because the risk levels and the capital structures significantly differ among industries. According to Octavia & Brown (2008), the capital structure of banks are still under-explored in the banking literature and the special nature of the deposit contract, the degree of leverage in banking and the regulatory constraints imposed on banks have meant that banks (and financial institutions in general) have been excluded from the standard capital structure choice. Additionally, exploring the relationship between capital structure and liquidity is critical as the banking sector is the liquidity hub of all sectors of an economy. Challenges in liquidity position of banking sector could undermine the growth of all sectors of the economy. Therefore, capital structure decision may be considered appropriate when it has positive implications on the level of liquidity or short term financial health of the banking sector. It is against these that the present paper seeks to investigate the relationship between capital structure and liquidity of banks in Ghana.

II. CONTRIBUTION OF THE PAPER

At the theoretical level, the paper provides empirical relevance for segregating capital structure into short term financial leverage, long term financial leverage and equity risk exposure (Froko, 2017). Demonstrating how different the effect of these facets has on the level of liquidity of banks would provide theoretical implications about traditional assumptions under capital structure-performance nexus. Additionally, the paper is the first to extend the existing theories of capital structure to liquidity by considering capital structure as multi-construct. The findings would provide new theoretical evidences which could help shape the understanding of the existing theories or help relax the existing assumptions. For instance, whiles the financial distress and bankruptcy cost theory posits a negative relationship between high level of debt and liquidity, the paper has hypothesized that this assumption is limited to long term financial leverage and not short term financial leverage of the banking sector. Further theoretical contribution of the paper to the literature is extension of the implication of the optimality scale proposed by Froko (2017) to the level of liquidity. The paper seeks to provide answers to the extent to which minimum mean proxy and maximum mean proxy in absolute terms influence the level of liquidity of banks?

At policy level, by segregating capital structure into different facets, the paper seeks to provide evidence to the effect that management of banks should develop different policy for each element of capital structure (short term financial leverage, long term financial leverage and equity risk exposure). Furthermore, with the current trend in the banking sector where the regulators do not hesitate shutting down banking institutions due to high risk exposure, the paper seeks

to provide the basis for managing this risk through capital structure policy. The findings seek to explore the level of debt (short term or long term debt) appropriate to minimizing the risk exposure and managing the financial health.

OBJECTIVE OF THE PAPER

The main objective of the paper is to investigate the effect of capital structure on the level of liquidity of banks in Ghana. The paper specifically seeks to:

- ✓ Determine the effect of short term financial leverage on the level of liquidity of banks in Ghana
- ✓ Investigate the relationship between long term financial leverage and the level of liquidity of banks in Ghana
- ✓ Examine how equity risk exposure influence the level of liquidity of banks in Ghana

III. LITERATURE REVIEW AND HYPOTHESIS DEVELOPMENT

The relationship between capital structure and liquidity has remained a theoretical issue. The literature does not provide comprehensive empirical evidences to explain the nature of the relationship. The unexplored empirical investigation about these phenomena provides the grounds for this paper. It is undisputable that debt has implications on the short term financial health (liquidity) of every enterprise. This is more critical in the banking sector which relies primarily on debt as its main business. This section of the paper therefore provides theoretical literature to support the investigation and critically draw working hypotheses from the theoretical postulations.

The root of the modern capital structure theory can be assumed to have grown up on the seminal paper of Modigliani and Miller (1958) commonly known as the MM theory. The development of the MM theory dates back to 1958 as one of the most influential papers in economic literature (Bayeh, 2011). It states that based on the assumption of no brokerage, tax and bankruptcy costs, investors can borrow at the same rate as corporations and they would tend to have the same information as management about the firm's future investment opportunities (ibid). The authors thus assumed that, under the existence of condition of no bankruptcy cost as well as frictionless capital markets with no taxes, firm's value is independent of capital structure. The accredited and path breaking contributors to the modern theory of capital structure (i.e. Modigliani and Miller) made their way under the assumption of perfect capital market.

The MM theory provides that under certain restrictions, the value of a firm would not be affected by its specific capital structure. This suggests that performance parameters including liquidity position of a firm would not be related to the use of debt. This leads to the inference that, capital structure may be considered irrelevant. If this theoretical assumption is considered as valid, than it can be hypothesized that:

H_1: Capital structure of banks has no significant effect on the level of liquidity of banks in Ghana

However, Modigliani and Miller (1958) stated that they assume a company's investment policy is set in a perfect market, for example, there are no taxes, efficient market and so on, and then the company's value will not be affected by the extent of debt (Tianyu, 2013). These assumptions are too remote and therefore could not reflect the real world situation. In the banking sector, the transformation of mobilized funds (customers' deposits and other debts) into loans and advance to deficit spending units go with differential interest rates. This depicts practical case of no perfect market. In Ghanaian financial sector, the type of debts may determine the value relevant to the banks including the liquidity position. For instance, short term debt could generate high liquidity position due to high interest spread on short term leverage. This may not be similar to long term financial leverage as the long term debt could have different interest rate structure in Ghana. Additionally, the risk of debt to equity participants may also differ from the type of debt in question. This is what has been termed equity risk exposure (Froko, 2017). Therefore, this paper hypothesized as follows:

H_2: The effect of capital structure on liquidity of banks in Ghana is determined by the type of capital structure (short term financial leverage, long term financial leverage and equity risk exposure).

Despite the sound theoretical discussions drawn from the MM theory regarding capital structure and liquidity, it is quite uncommon to find empirical literature which sought to provide empirical investigations about this relationship. Most of the existing empirical studies have focused on performance indicators such as profitability and returns on equity (see Chiang, Chang, Pand & Hui 2002; Eriotis, Franguoli & Neokosmides, 2002; Krishnan & Moyer, 1997). With liquidity remaining the anchor of the banking sector, capital structure could not be effectively evaluated without benchmarking against the level of liquidity of the banking sector. This is the motivation of this paper.

Financial experts and researchers over the period have strived to close the gap and shortfalls in the MM theory. One of the breakthroughs is the financial distress and bankruptcy costs theory. According to this theory, the use of debt in financing decision by firms generates financial distress which could lead to bankruptcy. The theory states that the larger the fixed interest charges associated by debt financing, the greater the probability of decline in earnings since it is allowable expenses and ultimately increase the likelihood of incurrence of costs of financial distress and bankruptcy (Harris & Raviv, 1991; Riahi-Belkaoni, 1999). It is believed that financial distress and bankruptcy costs expand beyond certain level of debt financing, thereby making the substitution of debt for equity benefit eroding rather than cost eroding (Zeitun & Tian, 2007).

By evaluation, the theory suggests that the higher the level of debts, the likelihood of financial distress or bankruptcy cost. However, this general assumption may not be applicable in the banking sector especially when the capital structure is segregated by following Froko (2017). The theory may be sounding in the case of long term financial leverage where cost of debt is very high. Thus, due to the low interest rate spread, additional long term debt beyond certain level may generate financial distress or bankruptcy cost. However,

regarding short term financial leverage with high interest rate spread, the traditional assumption of the financial distress and bankruptcy cost theory may not hold. The risk associated with debt may also require the equity participants to require high returns in terms of dividends which could adversely affect the net cash inflow (level of liquidity). The paper therefore draws the following hypotheses:

H_3: Long term financial leverage and equity risk exposure of banks have significant negative effect on the level of liquidity of banks in Ghana

H_4: Short term financial leverage of banks has significant positive effect on the level of liquidity of banks in Ghana

Although the financial distress and bankruptcy cost theory has strived to achieve trade off, the theory has failed to established capital structure optimality level. This shortfall has caused other researchers to further propose theories such as static trade-off theory (Chang, 1999; Kwansa & Cho 1995). Trade-off theory, developed by Myers (1984), suggests that firm should have optimal capital structure based on balancing between the benefits of debt and costs of debt. It is further explained under the TOT that, interest payments in respect of debt financing tend to be tax deductible and this makes debt financing less expensive than the use of equity financing. The implication of this theory is that the direction of effect of capital structure (positive or negative) could be determined by the level of debt or debt optimality. However, the theory failed to provide the basis for or scale of optimality. It is against this that Froko (2017) proposed minimum mean scale or proxy and maximum mean scale or proxy as the basis for optimality. Froko defined minimum and maximum level of debt by the denominator of assessment. Scaling debt by asset according to Froko (2017) generates minimum level of optimal scale whiles scaling by equity provides the maximum optimality in terms of absolute figure. With the assumptions of the Trade-off Theory coupled with Froko (2017) optimality scale, the hypotheses H_3 and H_4 could be expanded as follows:

H_5: Minimum Mean proxy of long term financial leverage has significant positive effect whiles maximum mean proxy has negative effect on the level of liquidity of banks in Ghana

Contrary to the H_5, lower short term financial leverage may make it difficult to meet withdrawals and interest payments as well as reducing returns which may be translated into free cash flow. Thus, higher short term financial leverage may not only curtail challenges from panic withdrawals but also provide opportunities to increase earnings through the high interest rate spread in the banking sector and strengthening the short term financial health. Therefore, the hypothesis is reframed as:

H_6: Minimum Mean proxy of short term financial leverage has significant negative effect whiles maximum mean proxy has positive effect on the level of liquidity of banks in Ghana.

IV. ANALYTICAL PROCEDURES AND DESIGN

This paper applies quantitative analytical procedure or approach. A quantitative research approach examines the existing literature on the subject matter and deductively develops hypotheses and theories to be tested (Creswell, 2003). Under this approach, the research problem is translated to specific variables and hypotheses (Bayeh, 2011). According to Bayeh (2011), quantitative research approach assumes that there is the existence of cause and effect relationship between and among known study variables of interest. Creswell (2003) explained that if the problem to be investigated is about identifying factors that influence a given outcome, the utility of an intervention or understanding the best predictors in outcomes, then the best approach is quantitative approach. Therefore to understand and analyse the effect of capital structure on the liquidity of banks in Ghana, it is more appropriate to adopt quantitative research approach. The paper applies this approach by translating the study objectives into hypotheses and operationalises the variables by measuring them numerically using relevant proxies (Queku, 2017).

The paper also employs research design that fits into the research philosophy or the analytical procedure. The research design is defined as the overall research strategy that a researcher chooses to integrate the different components of the research in a logical and coherent manner (Kirshenblatt-Gimblett, 2006). A causal research design is used in this research to support the quantitative framework. Causal research design provides the framework to assess cause and effect relationships between variables. According to Gall (2007), this design is suitable when a researcher seeks to establish how a specific change could affect the existing norms and assumptions. Causal research designs helps the researcher understands the behavioural patterns of a phenomenon through the process of proving a causal link between variables and eliminating other possibilities. This design also provides room for replications. This is applied in this paper by manipulating the cause variables or independent or explanatory variables (capital structure) and observing the outcome in the response variable or dependent variable (liquidity).

V. DATA, SOURCES AND MEASUREMENTS

The paper uses book based secondary data from the websites of the sampled banks in Ghana. These book values are derived from the audited financial statements of the various banks used in this study. The data are collected over eleven years' period from 2004 to 2014. The annual book based values of the financial data are used. Besides the audited financial statements of the various banks, journals articles, professional pronouncements, related books, and other relevant manuals are also used as sources of data. The book based values would provide a better common measuring rod than the market values in this paper because not all the banks under study are listed. According to Panno (2003), the use of book based values other than market values is also supported empirically especially when the study uses both listed and unlisted companies as in the case of this paper.

The variables for the paper are capital structure and liquidity. The capital structure is the independent or explanatory variable whiles the liquidity is the dependent variable or response variable. All data in relation to these variables are collected within annual interval. The variables are all measured in Ghana cedis. Liquidity measures the

ability of a firm to meet its short term obligations when they fall due. Following the literature, this paper measures liquidity as the ratio of current assets minus inventories to current liability (Chowdbury & Chowdbury, 2010; Naveed, et al, 2011; Olaynka, 2011). Thus, in this study liquidity connotes quick ratio. This forms the dependent variable.

Capital structure is the independent variable for the study. It is often termed as leverage ratio. Froko (2017) has demonstrated that capital structure is a multi-construct with four main elements. These are the short term financial leverage, long term financial leverage, total financial leverage and equity risk exposure. However, in this paper, the capital structure is measured by short term financial leverage, long term financial leverage and equity risk exposure. The short term financial leverage is measured by short term debt to equity (SDE) and short term debt to asset (SDA), the long term financial leverage is also measured by long term debt to equity (LDE) and long term debt to asset (LDA) whiles equity risk exposure is measured by ratio of debt to equity plus 1.

VI. MODEL SPECIFICATION

The generalized model for estimating the relationship between capital variables and the level of liquidity of banks in Ghana follows prior empirical studies. Since the paper collects data from cross sections (various sampled banks in Ghana) over time (from 2004 to 2014), the model in this paper follows generalized panel model of estimation. This panel based model is suitable as the data and the nature of the study have both cross sectional and time series or longitudinal characteristics. The model is specified as follows:

$$Y_{it} = \alpha_i + \beta_1 X_{it} + \varepsilon_{it} \quad (1)$$

Where:

'i' represents the cross-sectional dimension (banks in Ghana) and the 't' also denotes the time-series dimension (year) of the model.

'Y', also denotes the dependent, liquidity

'X', is the independent variable which is the capital structure.

α is the intercept of the model

'β' denotes the coefficients of the independent variable

'e' represents the error term.

Following Eqn (1), the paper derives the empirical model as expressed in Eqn (2) by building the research hypotheses into the model estimation. This empirical model is presented in multivariate model with one dependent variable (liquidity) as against five (5) independent variables which denote the capital structure. Since the paper excludes the total financial leverage, the multicollinearity problem is unlikely. The model is shown as:

$$QR_{it} = \alpha_i + \beta_1 SDA_{it} + \beta_2 SDE_{it} + \beta_3 LDA_{it} + \beta_4 LDE_{it} + \beta_5 ERE_{it} + \varepsilon_{it} \quad (2)$$

Where:

QR is quick ratio which measures the level of liquidity and represents the dependent variable

SDA, SDE, LDA, LDE and ERE are capital structure parameters which denote the independent variables and represent short term debt to asset, short term debt to equity, long term debt to asset, long term debt to equity and equity risk exposure respectively. β_1, β_2…… B_5 are the coefficients of the independent variables. The significance of these coefficients would demonstrate whether or not these capital structure variables affect liquidity. Additionally, the direction of the coefficients would also show whether the effect is positive or negative.

The significant levels of the coefficients are tested at a 10%, 5% and 1% confident interval levels of significance, an estimated coefficient. Thus, the coefficient is deemed as statistically significant if the p-value is less than 0.1, 0.05 or 0.01 respectively.

VII. ECONOMETRIC ESTIMATION

Ordinary Least Square (OLS) approach is used in this paper to estimate the empirical relationship between capital structure and liquidity as modeled in equation (2). Ordinary Least Squares (OLS) has becomes one of the most widely used econometric estimator. It is capable for estimating unknown parameters in a linear regression model and minimises the sum of the squares of the differences between the observed responses (values of the variable being predicted) in the given dataset and those predicted by a linear function of a set of explanatory variables (Greene & William, 2002). It is easy to use due to its relatively few assumptions. The results, however, become spurious when the unit root or stationarity assumption is violated. Therefore, prior to estimating the model using the OLS, the paper conducts prior econometric diagnostics with special emphasis place on the unit root tests. The Fisher Augmented Dickey Fuller (ADF) and Fisher Philip-Perron (PP) are used to test the unit root or the stationarity. These unit root tests operate with the null hypothesis that the variable has unit root or non-stationary.

The decision is based on the significance of the Chi-square. The presence of unit root is rejected when the Ch-square is significant. In this case, the conclusion about the variable property is that the variable does not have unit root. It has the integration order zero (I(0)). However, when the variable is insignificant, then, it has unit root. The implication is that the estimation cannot be conducted at levels. When the variable has unit root, then, the OLS estimation could not be reliably estimated at levels. The model would then be estimated either at difference or alternative estimator employed. The significance of the Chi-square is assessed on the corresponding p-value of less than 1%, 5% or 10%. The paper conduct Hausman test as part of the diagnostic test to determine whether it is appropriate to run the panel specifications using fixed effect or random effect. All estimates are computed using Eviews.

VIII. DESCRIPTIVE ANALYSIS

The descriptive statistics show the properties of the data used. The results from the descriptive statistics are presented in Table 1. From Table 1, it can be seen that all the variables have positive means. The mean values for quick ratio (QR), short term debt to equity (SDE), short term debt to asset (SDA), long term debt to equity (LDE), long term debt to asset (LDA) and equity risk exposure (ERE) are 1.4135, 6.8129,

ISSN: 2394-4404

0.8072, 1.3221, 0.0909 and 8.9434 respectively. The study relies on the median as central tendency as the normality assumption is rejected by the results from the Jarque-Bera statistics (Dess et al, 2005). Given the average values the standard deviation of the QR, SDE, LDE and ERE are high while SDA and LDA are relatively low. The standard deviations for QR, SDE, SDA, LDE, LDA and ERE are 3.3390, 4.6757, 0.6730, 4.2626, 0.1530 and 6.7070 respectively. All the study variables are positively skewed as revealed by the skewness statistics. The Kurtosis also indicates that all the variables also have excess peakness.

	QR	SDE	SDA	LDE	LDA	ERE
Mean	1.4135	6.812948	0.807163	1.322080	0.090860	8.943416
Median	1.0425	6.109603	0.810096	0.313223	0.032307	7.654907
Maximum	46.8587	34.95461	8.351157	40.20839	0.873719	58.66590
Minimum	0.0000	0.000000	0.000000	0.000000	0.000000	0.000000
Std. Dev.	3.3390	4.675734	0.673003	4.262563	0.153026	6.707006
Skewness	11.9568	1.666024	7.986842	6.134932	3.061029	2.976150
Kurtosis	158.9238	8.973817	81.55352	46.11778	13.42036	18.40295
Jarque-Bera	228104.2	428.8995	58903.29	18422.18	1338.916	2499.574
Probability	0.0000	0.000000	0.000000	0.000000	0.000000	0.000000
Sum	310.9663	1498.848	177.5758	290.8576	19.98914	1967.551
Sum Sq. Dev.	2441.668	4787.884	99.19243	3979.109	5.128343	9851.480
Observations	220	220	220	220	220	220

Note: Std. Dev. represents Standard Deviation while Sum Sq. Dev. represents Sum of Squared Deviation
Source: computed using Eviews 7.0 Package
Table 1: Descriptive Statistics of Study Variables Panel Unit Root

Panel unit root diagnostic is a fundamental test for applying Ordinary Least Square (OLS) approach to estimate a relationship. As explained in the earlier section, this paper considers this assumption as the basis to either continue to apply OLS or employ alternative estimator. The panel unit root results are reported in Table 2 using the Fisher ADF and Fisher PP. The statistics in Table 2 show that all the variables are I(0). The Chi-squares of these variables have p-values which are less than even 1%. This means that the variables do not have unit root. It is also an indication that the variables are stationary and therefore POLS can be used to estimate the empirical model of the relationship. Having tested the unit root properties of the variables, the paper proceeds to run the panel OLS.

Variables	ADF		PP		ORDER
	Chi-Square	P-Value	Chi-Square	P-Value	
SDE	64.8875	0.0077	104.320	0.0000	I(0)
SDA	121.347	0.0000	145.817	0.0000	I(0)
LDE	77.5526	0.0018	97.7525	0.0000	I(0)
LDA	69.4814	0.0026	102.964	0.000	I(0)
ERE	68.8654	0.0031	77.8522	0.0003	I(0)
QR	100.799	0.0000	114.419	0.0000	I(0)

Source: computed using Eviews 7.0 Package
Table 2: Panel Unit Root of the Study Variables

IX. FIXED EFFECT AND RANDOM EFFECT SPECIFICATIONS

The results from the diagnostics tests indicate that the estimation could be conducted using panel ordinary least square (POLS). The paper therefore proceeds to use the POLS to estimate the multivariate panel regression in equation (2). However, in running POLS, it is expected that choice is made between fixed effect and random effect specifications. The paper relies on the Hausman test to determine the suitable specifications rather than made arbitrary choice. The results of Hausman test can provide evidences of one way fixed effect or random effect. This case arises when only either cross section or period random is significant. The decision rule is that when the Chi-square statistics are significant, then fixed effect panel is more appropriate and when these statistics are insignificant then the suitable panel analysis is random effect. The chi-square statistics and the associated p-values are reported in Table 3. The statistics on the Table 3 shows that all the three test points, namely, cross –section random, period random and both cross sections and period random are not significant. The chi-square statistics in all the three scenarios presented on Table 3 are virtually zero with p-value of 1. These mean that these statistics are quite insignificant. The study therefore employs the panel random effect for estimating the POLS.

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	0.000000	5	1.0000
Period random	0.000000	5	1.0000
Cross-section and period random	0.000000	5	1.0000

Source: computed using Eviews 7.0 Package
Table 3: Hausman Chi-square Test on Liquidity Model

X. PANEL ORDINARY LEAST SQUARE ESTIMATION RESULTS

The diagnostics tests have revealed that POLS is suitable for the estimation of the relationship. Additionally, the Hausman test results show that it is more appropriate to conduct the POLS using random effect specifications. The random effect results of the POLS estimation are reported in Table 4.

Variable	Coefficient	Std. Error	t-Statistic	Prob.
SDA	-1.5245***	0.3143	-4.8505	0.0000
SDE	0.0084***	0.0020	4.2039	0.0000
LDA	3.8608**	1.6731	2.3076	0.0220
LDE	-0.0779**	0.0321	-2.4244	0.0162
ERE	-0.0029**	0.0014	-2.0738	0.0393

Notes: R^2= 0.757472; Adj R^2= 0.735451; F-statistics = 116.1767; and P-value (F-statistics = 0.0068); Durbin-Watson stat = 2.0823
**** Significant at 1%, ** Significant at 5%, * Significant at 10%.*
Table 4: Panel Ordinary Least Square Regression Results

The preliminary statistics or diagnostics reported Table 4 include the R^2, adjusted R^2, the f-statistics and the Durbin-Watson statistic. The statistics are used to assess the model soundness. The R^2 and the adjusted R^2 for instance are used to determine the fitness of the model. The higher these statistics, the better is the model specification and its fitness. This model has R^2 of 0.7574 and adjusted R^2 of 0.7355. These statistics are high indicating the goodness of the model estimated. They show that the estimation technique is

sounding. The R^2 suggests that the independent variables: short term financial leverage, long term financial leverage and equity risk exposure explain about 75.74% of variations in the level of quick ratio. On the other hand, only 24.26% of the variation is contributed by factors outside the model.

The f-statistic of the model shows the joint significance of the coefficients of all the independent variables in the model. Table 4 shows f-statistic of 116.1767 and associated P-value of 0.0068. This indicates significance level of 1%. Less than 1% value exhibited by the p-value shows that the f-statistic is significant. This means that although a particular variable may not have significant coefficient in explaining variations in the dependent variable (level of quick ratio), they are jointly significant to explaining movement in the dependent variable. The Durbin –Watson statistic which is also used to check whether or not there is an autocorrelation problem has been reported in the Table. The assumption of autocorrelation problem is rejected when the statistic is closer to 2 and vice versa. The Table shows that there is no autocorrelation problem as it is closer to 2 (2.0823).

INTERPRETATION AND DISCUSSIONS OF HYPOTHESES

The paper is built on three hypotheses which were developed from the specific objectives of the paper. These are recalled as follows:

H_0: Short term financial leverage has no significant influence on the level of liquidity of banks in Ghana

H_0: There is no significant relationship between long term financial leverage and the level of liquidity of banks in Ghana

H_0: Equity risk exposure has no significant influence on the level of liquidity of banks in Ghana

XI. SHORT TERM FINANCIAL LEVERAGE AND LIQUIDITY OF BANKS

The first hypothesis seeks to determine the level of contribution of short term financial leverage to the level of liquidity (quick ratio) of Banks in Ghana. The short term financial leverage were measured by the minimum mean proxy (short term debt to asset, SDA) and maximum mean proxy (short term debt to equity, SDE) as conceptualized by Froko (2017). The SDA in Table 4 has a negative coefficient of -1.5245. The negative coefficient is evidence that the direction of the relationship between the level of short term debt to asset (SDA) and level of quick ratio is negative. The p-value for the coefficient is 0.0000. This indicates that the coefficient is significant in contributing to changes in the level of quick ratio. This implies that null hypothesis of insignificant contribution to quick ratio is rejected. Therefore, an increase in the level of short term debt to asset (SDA) would decrease the level of quick ratio by 1.5245. On the other hand a decrease in the level of short term debt to asset (SDA) would lead to an increase in the level of quick ratio by 1.5245.

The next short term financial leverage variable is short term debt to equity (SDE). The coefficient of SDE from Table 4 is 0.0084. The statistic is positive. This means that contrary to the short term debt to asset (SDA), the short term debt to equity (SDE) has positive effect on the quick ratio. The p-value of this coefficient is 0.0000. This means that the coefficient is significant. This suggests that the study rejects the null hypothesis of no significant effect of short term debt to equity (SDE) on quick ratio at 1%, 5% and 10% confidence level. Following these statistics, a 1% increase in the level of short term debt to equity (SDE) would also increase the level of quick ratio by 0.0084 and vice-versa.

Since the low level of short term financial leverage (SDA) is negatively related to liquidity but the high level (SDE) demonstrated positive contribution to liquidity, the findings suggest that low level of short term debt restrains banks' ability to meet its short term obligation (Liquidity position). Low short term debt decreases the ability to pay off debt holders' interest and meet withdrawal needs of the customers. However, the ability to meet short term obligations increases with high level of short term debt. The implication is that banks in Ghana peg the returns from the short term debt to finance their short term obligation such as interest expenses and customers' demand. This means that this ability is retarded when there is no much short term debt as returns normally increases with the magnitude of the investment.

The findings demonstrate a special case of trade-off theory. Trade-off theory traditionally suggests balancing between low and high level of debt due to cost of debt (Myers, 2001). Primarily, the theory implies that increasing in debt to a high level sacrifices the benefits of debt; therefore, to benefit from debt, debt should not be unreasonably high. This is contrary to the findings in this paper. The empirical findings in this paper suggests that there is a special trade-off for short debt in respect of banks where low debt rather sacrifices liquidity benefits of debt and high debt increases the liquidity benefits of debt. The practical implication is that given the current high interest rate spread in the Ghanaian banking sector, it pays for banks to employ more short term debt rather than keeping them low. Thus, for the banking sector, short term debt such as customers' deposit is insatiable to the banks as their liquidity strength increases with the short term debt and decreases with low debt. This theoretical implication explains why banks continuous to search for new customers and also develop promotional strategies to increase customers' deposits.

Similarly, the findings suggest no evidence of financial distress with increasing short term debt as argued by the traditional financial distress and bankruptcy cost theory (Riahi-Belkaoni, 1999). The findings from this paper imply that financial distress could be witnessed in the case of the banks when the short debt is low as there is negative relationship with low short term debt and positive with high debt. Therefore, another practical implication is that effective management of liquidity of banking institutions in Ghana does not follow the assumptions of the financial distress and bankruptcy cost theory. The findings suggest that management of banks could fulfill their fiduciary duty to the shareholders when policy for mobilising customers' deposits is pursued.

XII. LONG TERM FINANCIAL LEVERAGE AND LIQUIDITY OF BANKS

The second objective of this paper and the corresponding hypothesis seeks to investigate how long term financial leverage influences the level of liquidity. Like the short term financial leverage, the long term financial leverage is also measured using Froko's minimum and maximum mean proxies which are long term debt to asset (LDA) and long term debt to equity (LDE) respectively (Froko, 2017). Table 4 reveals statistical results on long term debt to asset (LDA) and long term debt to equity (LDE). The statistical coefficient of long term debt to asset (LDA) is 3.8608. It can also be observed that the corresponding p-value for this coefficient is 0.0220. This p-value is less than 5% indicating that the coefficient of long term debt to asset (LDA) is significant at 5% level. The direction of the coefficient shows positive relationship. This means that the level of long term debt to asset has positive effect on the level of quick ratio. The study therefore, rejects the null hypothesis that the level of long term debt to asset has no significant influence on the level of quick ratio. The magnitude of the coefficient is relatively high indicating high sensitivity of the level of quick ratio to the level of long term debt to asset. The significant coefficient of long term debt to asset (LDA) means that an increase in the level of long term debt to asset (LDA) would increase the level of quick ratio by 3.8608 and vice-versa.

Unlike the level of long term debt to assets (LDA) which saw positive significant relationship with the level of quick ratio, the long term debt to equity (LDE) has significant negative coefficient. The coefficient of the long term debt to equity (LDE) is -0.0779. This coefficient is relatively small in magnitude compared to the coefficient of LDA. The associated p-value of the coefficient of the long term debt to equity (LDE) is 0.0162. This p-value is less than 5% and therefore suggesting significant negative effect of the long term debt to equity (LDE) on the quick ratio. Since the coefficient is significant at 5% confidence level, the study rejects the null hypothesis that the level of long term debt to equity has no significant influence on the level of quick ratio. This suggests that when there is an increase in the level of long term debt to equity (LDE), it would decrease the quick ratio by a magnitude of 0.0779. Similarly a decrease in the level of long term debt to equity (LDE) would increase quick ratio.

The findings can be explained by the interest rate spread in Ghana. Unlike the short term debt with low interest expenses, long term debt comes with interest charge which is not too wide from the interest charge on loans of banks. This means that the returns from long term debt financing are lesser than the short term debt financing. Therefore, as the level of long term debt increases, the interest payment would be high and this would be detrimental to the liquidity position. The theoretical implication is that these findings conform to the assumption of the financial distress and bankruptcy cost theory. As discussed in this paper, the theory holds the view that high debt increases with financial distress and bankruptcy cost (Francis & Cho, 1995). Like some of the earlier contributors to confirming this theory such as Francis & Cho (1995) who revealed that the higher the debt, the higher the financial distress and bankruptcy probability levels, the present paper has seen that high long term debt can generate distress problem as shown in the negative effect of maximum mean proxy of long term debt on liquidity and positive effect by the minimum mean proxy.

Another theoretical implication is that the findings affirm the trade-off theory. Trade-off theory suggests optimal capital structure based on balancing between the benefits of debt and costs of debt (Myers, 1984). The findings in this paper indicate that optimality of long term debt in respect of benchmarking to liquidity falls within upper and lower limit of mixture of capital structure (LDA and LDE). When the banks operate within the minimum and maximum mean proxies, the cost of debt would not outweigh the benefit, however, at the maximum mean (LDE), it would deplete the liquidity. Practical implication of the findings is that banking institutions should pursue policy of balancing the returns of debt with cost.

XIII. EQUITY RISK EXPOSURE AND LIQUIDITY OF BANKS

The last specific objective of the paper sought to establish the relationship between equity risk exposure and liquidity of banks in Ghana. The equity risk exposure (ERE) is the subject of the third hypothesis. This hypothesis seeks to examine how equity risk exposure explains variation in the level of quick ratio of Banks in Ghana. The statistics presented on Table 4 shows that equity risk exposure (ERE) has negative coefficient. The coefficient of equity risk exposure (ERE) reported is -0.0029. The p-value of the coefficient is 0.0393. This p-value is less than 5%. This means that the coefficient of equity risk exposure (ERE) is significant at 5% confidence level. The significant coefficient means that the null hypothesis is not holding. Therefore, the study rejects the null hypothesis of no significant causal relationship between equity risk exposure (ERE) and the quick ratio. The implication is that when there is an increase in the level of equity risk exposure, it would decrease the level of quick ratio by 0.0029 and a decrease in the level of equity risk exposure (ERE) would increase the level of quick ratio by 0.0029 all others things being equal.

The findings imply that increase in the level of risk of equity participants adversely affects liquidity. On the other hand when there is a decrease in the level of equity risk exposure, it would improve the liquidity position of banks in Ghana. The negative significant effect on liquidity is consistent with the study expectations. It is expected that high equity risk would require high equity compensation in a form of returns or dividends. These payments are made from liquidity and therefore decrease the liquidity position. The findings also contribute to the financial distress and bankruptcy cost theory. The theory argues that high debt increases risk and financial distress cost. Relatedly, the increasing risk can be associated with the equity risk exposure which also increases with debt (Kwansa & Cho 1995). Therefore, per this theory when this risk (equity risk) increases, banks would incur distress cost which is a charge against liquidity. This is consistent with the empirical evidence found in this paper.

XIV. SUMMARY AND CONCLUSIONS

This paper investigated the relationship between capital structure and liquidity of banks in Ghana. The capital structure was defined from three of the four concept proposed by Froko (2017). Namely: short term financial leverage, long term financial leverage and equity risk exposure. Apart from the equity risk exposure, the two remaining facets of capital structure were operationalised in terms of minimum mean proxies and maximum mean proxies. Liquidity was measured by quick ratio. The paper found that short term debt to asset (SDA), a proxy for measuring short term financial leverage contributes negatively to the level of liquidity of Ghanaian banks. However, the second proxy (SDE) contributes significant positive effect to the level of liquidity. The conclusion was that the nature and direction of the relationship between short term financial leverage and liquidity of banks in Ghana depends on whether or not the bank operates at minimum short term debt or maximum short term debt. A low level of short term financial leverage (minimum mean proxy) is negatively related to liquidity whiles the high level (maximum mean proxy) demonstrated positive contribution to liquidity.

Regarding the relationship between long term financial leverage and liquidity, it was revealed that the level of long term debt to asset (LDA) has positive effect on the quick ratio whiles the long term debt to equity also showed a negative significant effect on the level of liquidity. These findings are in opposite direction to the findings under the short term financial leverage. This also provides evidences to segregate the concept of capital structure into its key components in empirical and theoretical analysis. Furthermore, the findings from the estimations revealed that equity risk exposure has significant negative effect on the level of liquidity of banking institutions in Ghana. The conclusion from the findings was that increase in the level of risk of equity participants adversely affects liquidity. On the other hand when there is a decrease in the level of equity risk exposure, it would improve the liquidity position of banks in Ghana.

XV. IMPLICATIONS AND RECOMMENDATIONS

The implication of minimum mean proxy of short term debt exhibiting negative effect and maximum mean proxy positively affecting liquidity is that Ghanaian banking institutions pursue aggressive financing policy where they finance their short term obligations from short term finance. Thus, Ghanaian banks peg their cash inflow from the short term debt to finance their short term obligation such as interest expenses and customers' demand. Therefore, when the level of short term debt is low, it is not able to generate enough cash inflow to meet its short term obligations. However, an increasing short term debt (customer deposits) would produce more than enough cash flow to cater for short term obligation.

The implication of the relationship found between long term debt and liquidity supports the financial distress and bankruptcy cost theory. The findings imply that high debt increases with financial distress through high interest payment which may make the banks illiquid. This is crucial because the cost of debt is usually financed through short term finance-liquidity.

The findings of negative effect of equity risk exposure on liquidity imply that Ghanaian banks pursue profit oriented policy-where premium is placed on profitability or returns. Since returns or profits are different from liquidity or cash, any shock on returns such as uncollectible income or debt could severely affect the banking operation. This explains why panic withdrawal causes some banks to close some branches.

Since the short term financial leverage does not follow the traditional relationship between long term leverage and liquidity, it is important for policy makers and practitioners to segregate the policy for each facet of capital structure decisions rather than lumping the policy as it could obscure the true direction of the policy. It is also recommended that researchers should conceptualise capital structure as multi-construct and operationalises the concept as such in empirical investigations so as to resolve the mixed results in the literature. This is important because, the findings in this paper revealed that how capital structure is defined has implication on the nature and direction of the empirical findings and conclusions drawn.

High level of long term financial leverage and the equity risk exposure derails the liquidity of banks. Therefore, in quest to apply debt to meet capital requirement, management should search for low interest bearing debt so as to reduce cash out flow in a form of interest payment so as to minimise the effect on liquidity.

REFERENCES

[1] Abor, J. (2005). The effect of capital structure on profitability: an empirical analysis of listed firms in Ghana.The journal of risk finance, 6(5), 438-445.
[2] Albabiyan, A. (2007). The economics of Islamic finance and securitization. The Journal of Structured Finance, 13(1), 6-27.
[3] Ahmed, N., Ahmed, Z., & Usman, A. (2011). Determinants of performance: A case of life insurance sector of Pakistan. International Research Journal of Finance and Economics,61(1), 123-128.
[4] Akinlo, O. (2011). Determinants of capital structure: Evidence from Nigerian panel data. African Economic and Business Review, 9(1), 1-16.
[5] Akintoye, I. R. (2008). Efficient market hypothesis and behavioural finance: A review of literature. European Journal of Social Sciences, 7(2), 7-17.
[6] Amidu, M. (2007). Determinants of capital structure of banks in Ghana: an empirical approach. Baltic Journal of Management, 2(1), 67-79.
[7] Awunyo-Vitor, D., & Badu, J. (2012). Capital structure and performance of listed banks in Ghana. Global Journal of Human-Social Science Research, 12(5).
[8] Bayeh, A. (2011). Factors Affecting Capital Structure Decision: Evidence from Ethiopian Insurance Firms (Doctoral dissertation, Addis Ababa University Addis Ababa, Ethiopia).

[9] Bhabra, H. S., Liu, T., & Tirtiroglu, D. (2008). Capital structure choice in a nascent market: Evidence from listed firms in China. Financial Management, 37(2), 341-364
[10] Brush, C. G., Carter, N. M., Greene, P. G., Hart, M. M., & Gatewood, E. (2002). The role of social capital and gender in linking financial suppliers and entrepreneurial firms: a framework for future research. Venture Capital: An international journal of entrepreneurial finance, 4(4), 305-323.
[11] Chang, C. (1999). Capital structure as optimal contracts.The North American Journal of Economics and Finance,10(2), 363-385
[12] Chakrabortey. (2010). Time varying size and liquidity effects in South Asian equity markets: A study of blue-chip industry stocks. International Review of Financial Analysis, 19(4), 242-257.
[13] Chiang, J., Cheng, A., & Pand, C. Y. (2002). A conceptual framework for corporate governance reform in South Korea. Corporate governance: An international review, 10(1), 29-46.
[14] Dess, J., & Sels, L. (2005). SMEs' radical product innovation: The role of internally and externally oriented knowledge capabilities. Journal of Small Business Management, 52(1), 141-163.
[15] De Mesquita, J. M. C., & Lara, J. E. (2003). Capital structure and profitability: the Brazilian case.
[16] Eriotis, N. P., & Franguoli, Z. et Neokosmides ZV (2002):«Profit Margin and Capital Structure: An Empirical Relationship». The Journal of Applied Business Research (18), 85-89.
[17] Francis K. H., & Cho, M. (1995). Structural changes, housing price dynamics and housing affordability in Korea. Housing Studies, 25(6), 839-856
[18] Gall, A. (2007). Legislation, Regulation, and Governance of Building Societies. In Building Societies in the Financial Services Industry (pp. 45-60). Palgrave Macmillan UK.
[19] Hadlock, C. J., & James, C. M. (2002). Do banks provide financial slack?. the Journal of Finance, 57(3), 1383-1419.
[20] Hailu, A. (2015). The impact of capital structure on profitability of Commercial Banks in Ethiopia.
[21] Harris, M., & Raviv, A. (1991). The theory of capital structure. The Journal of Finance, 46(1), 297-355.
[22] Hunag, L., & Song, Y. S. (2006). Top management team characteristics, R&D investment and capital structure in the IT industry. Small Business Economics, 35(3), 319-333.
[23] Iqbal, Z. (1997). Islamic financial systems. Finance and Development, 34(2), 42.
[24] Krishnan, V. S., & Moyer, R. C. (1997). Performance, capital structure and home country: An analysis of Asian corporations. Global Finance Journal, 8(1), 129-143.
[25] Kwansa, F. A., & Cho, M. H. (1995). Bankruptcy cost and capital structure: the significance of indirect cost. International Journal of Hospitality Management, 14(3), 339-350.
[26] Mazur, K. (2007). The determinants of capital structure choice: evidence from Polish companies. International Advances in Economic Research, 13(4), 495-514.
[27] Modigliani, F., & Miller, M. H. (1958). The cost of capital, corporation finance and the theory of investment. The American economic review, 48(3), 261-297
[28] Myers, S. C. (1984). The capital structure puzzle. The journal of finance, 39(3), 574-592.
[29] Octavia, M., & Brown, R. (2008). Determinants of bank capital structure in developing countries: regulatory capital requirement versus the standard determinants of capital structure. Department of Finance The University of Melbourne, 35, 35.
[30] Panno, A. (2003). An empirical investigation on the determinants of capital structure: the UK and Italian experience. Applied Financial Economics, 13(2), 97-112.
[31] Paulo, E., Esperança, J., Matias Gama, A. P., & Azzim Gulamhussen, M. (2003). Corporate debt policy of small firms: an empirical (re) examination. Journal of Small Business and Enterprise Development, 10(1), 62-80.
[32] Phillips, P. A., & Sipahioglu, M. A. (2004). Performance implications of capital structure: evidence from quoted UK organisations with hotel interests. The Service Industries Journal, 24(5), 31-51.
[33] Riahi-Belkaoui, A. (1999). Level of multinationality, growth opportunities, and size as determinants of analyst ratings of corporate disclosures. American Business Review, 19(2), 115.
[34] Singh, J. P., & Pandey, S. (2004). Impact of Working Capital Management in the Profitability of Hindalco Industries Limited. ICFAI journal of financial Economics,6(4).
[35] Shyam-Sunder, L., & Myers, S. C. (1999). Testing static tradeoff against pecking order models of capital structure.Journal of financial economics, 51(2), 219-244.
[36] Tianli, Z., Yanbin, H., & Tianyu, Z. (2013). Relationship between technological innovation investment and financing structure of enterprise: Theoretical model and empirical analysis. Technology Economics, 32(6), 40-45.
[37] Yat Hung, C., Ping Chuen Albert, C., & Chi Man Eddie, H. (2002). Capital structure and profitability of the property and construction sectors in Hong Kong. Journal of Property Investment & Finance, 20(6), 434-453.
[38] Zeitun, R., & Tian, G. G. (2007). Capital Structure and Firm Performance: Evidence from Jordan. Australia Accounting Business and Finance Journal, 1(4), 148-168.