

The Impact of Working Capital and Debt Financing on the Profitability of Licensed Banks in Ghana

Elizabeth Sena Ajorsu, Jiang Hongli, Mohammed Musah

School of Finance and Economics, Jiangsu University, Zhenjiang, China

ABSTRACT

This paper examine the impact of working capital and debt financing on the profitability of twenty-two (22) licensed banks in Ghana spanning from 2008 to 2018. To ascertain the influence of working capital and debt financing on the profitability of banks, the study adopt Generalized Linear Square (GLS) estimator and the Robust Random-Fixed Effect Model (RE) to analyzed the data and explaining the model equation. Using a panel data approach, the study found that variable return on equity (ROE) used to measure profitability recorded a positive association with borrower's collection periods, bank cash conversion cycles, and debt financing presented by long-term debts. Besides, the study also revealed no significant link between short-term debts with ROE. Further, result from the main panel data disclosed that the moderating variables borrowers collection periods and short-term debt (BCP*STD), bank cash conversion cycle and long-term debt (BCCC*LTD) exhibited a significant influence on the profitability surrogated by return on equity (ROE). Whereas, the other interacting variables including BCP*LTD and BCCC*STD recorded no significant impact on return on equity. The study suggests that for banks to increase their profitability and maximize shareholder's worth it recommended that working capital and debt financing is imperative which need to be managed efficiently and effectively to uphold the confidence in the Ghanaian banking industry.

KEYWORDS: Working Capital; Debt Financing; Profitability; Licensed Banks, Ghana

1. INTRODUCTION

Undoubtedly, appropriate financial decisions are indispensable in improving prospects and curtailing potential threats amid the banking industry. Company assets and liabilities are an inevitable component of every financial statement. With the rising study on way to upsurge the profitability of companies, working capital and debt financing appeared as a major key component that defines the success of every industry globally and in the financial sectors.

Scholar, Alavinasab & Davoudi (2013) defined working capital (WC) as a component of all short-term assets that a company employs for running the daily activities of a business. In other words, WC measures the liquidity positions of a financial institution for meeting recurrent obligations. Thus, working capital indicates cash flows and profitability in the banking industry which includes cash and cash equivalent, receivables, inventory, and payables. Yeboah& Agyei (2012) perceived WC as the component of firm assets and liabilities in a manner that due commitments are settled while current assets are well examined. Further, it was outlined in the same study that solvency in relation to financial industries prevailed unchanging for the following two reasons. The reasons include fulfilling governing conditions and making sure that cash is available to settle depositors when the need arises. The term working capital is of the essence in retaining adequate cash flow, creditworthiness, stability,

How to cite this paper: Elizabeth Sena Ajorsu | Jiang Hongli | Mohammed Musah "The Impact of Working Capital and Debt Financing on the Profitability of Licensed Banks in Ghana" Published in International Journal of Trend in Scientific Research and Development (ijtsrd), ISSN: 2456-6470, Volume-5 | Issue-1, December 2020, pp.90-102, URL: www.ijtsrd.com/papers/ijtsrd35855.pdf



IJTSRD35855

Copyright © 2020 by author(s) and International Journal of Trend in Scientific Research and Development Journal. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (CC BY 4.0) (<http://creativecommons.org/licenses/by/4.0>)



and profitability of a firm Hoque, Mia& Anwar (2015). Therefore, an efficient bank's working capital can lead to retaining a high level of customer confidence, meeting their short-term obligations on time, investing in new products, and creating new bank branches well as providing employment and job creation. Management of financial institutions is, however, puzzle on how to meet investors who are interested in profit with regards to their bonuses, and creditors who are also concern with cash flows, to meet their withdrawals demand deposits when the need arises. According to Brigham Eugene & Houston Joel (2003), profitability is generally recognized as a key factor that largely affects banking sectors depending on how working capital is been managed.

According to Banafa, Muturi& Ngugi (2015), debt financing is an essential constituent of financial structure decisions, therefore it is indispensable for a financial manager in developing countries to scrutinize the pros and cons before outsourcing for their operations. Debt outsourcing provides alternative funds and prospects for a firm to grow and increase in development when utilized on profitable projects without affecting the firm's ownership. However, debt financing is frequently allied through stringent terms and conditions, hence it's a process of funding an entity by borrowing loans and repaying when the maturing time is due. Debt is an external source of funds that an entity acquired to

purchase more assets and finance its project without employing much equity in their operations. Debt financing is one of the criteria that is firmly associated with the capability of firms to meet the requirement of the various shareholders. Converging studies on the theory about debt suggested that external sources of funding are major ways of capitalizing long-term obligations which largely affect firm profitability, thus debt financing stands an ever-elusive gem (Udeh, Nwude, Itiri & Agbadua (2016) and Premeh & Nsiah Asare (2016).

The term profitability is defined as the capability of financial institutions to generate excess income of cost in terms of the bank's capital base. There are several proxies used to measure profitability. These include return on assets (ROA), return on equity (ROE), net profit margin (NPM), and profit after tax. These profitability measures indicate a company's ability to make more returns from capital financed through stockholder's equity, prospective investors then show the soundness of industry dictates the stability of the economy as a whole Nkegbe & Ustarz (2015). A primary concern of working capital and debt financing is an essential element for a smooth and successful running of daily operations that improve the financial performance of banks. Hence for this element of working capital and debt financing to function effectively and efficiently financial managers and shareholders of the institution must show great concern in evaluating the effectiveness with which current assets are transformed into profits. This divulges effective management of working capital since financing problems affect working capital and debt financing of different financial institutions possibly will affect the level of profitability Goddard, Molyneux, & Wilson (2004).

Banks can be effective in their operation when there is a proper flow of funds. However, financial hindrance has been a key issue disturbing the company's profitability in emerging countries including Ghana. Thus, the decision on debt capital can principally raise the profit margin of the bank depending on the company activities or have an adverse effect on profitability as a result of the default payment of borrowed funds. More so, the total amount of cash that banks acquired depends on the availabilities of cash and the fees charged on borrowings. Uncertainty bank can lend a huge sum of money at any specific time without having any challenge at very a low rate, hence will hold very little liquid assets. However, if it is uncertain to lend money or the rate of lending is too expensive, the bank will choose to have more liquid assets in its portfolio. Though much study has not to be conducted to provide factual data to back the statement that financial constraints contributed a major role in the failures of general banks in Ghana, it can be inferred from the report by the Ghana Banking Survey 2019 that most banks in Ghana have challenges with liquidity. Towards this challenge, the present study seeks to test the hypothesis that working capital and debt financing influences the profitability of banks in Ghana. This exploratory study is presented as follows: section 2 presents literature reviews and hypothesis development; Section 3 outlines the research methodology, Section 4 discusses the results, and finally, section 5 concludes the paper.

2. Literature Review and Hypotheses

2.1. Relationship Between Working Capital and Profitability

Most theoretical and empirical surveys backed the idea that component of working capital shows a positive impact on profitability of banks. Yeboah et al. (2012) examined the outcome of working capital and liquidity levels on the profitability of banks in Ghana. The survey employs panel data and random effect techniques to analyze the data spanning from 1999-2008 for estimation. Results from the study proved that working capital measured by borrowers' collection period and cash conversion cycle with other variables such as leverage and bank size has significant adverse interaction with the levels of bank cash position, while creditors payment period and profitability have a significantly positive connection with the cash position of banks in Ghana. Based on their findings the author's suggested that for banks to be profitable, directors of such banks must manage their working capital efficiently, makes policies to controls, and ensure adequate cash flows.

Seminal work conducted by Yakubu, Alhassan, Fuseini, & Research (2017) empirically investigated the influence of working capital management (WCM) on the profitability of non-financial firms in Ghana. Employing qualitative data for five published non-financial firms spanning from 2010-2015. Using the random effect model, the study found an average payment period and current ratio have a positive association with firm profitability (ROA). Also, the borrower's collection period, bank cash conversion cycle, and firm size on the other hand have a negative correlation with firm profitability.

In connection with Akoto, Awunyo-Vitor, & Angmor (2013) examined the association between WCM practices on the profitability of 13 quoted manufacturing firms. The data was retrieved from the balance sheet from a registered firm on the Ghana stock exchange (GSE) between the years 2005 to 2009, employing multiple regression analysis for the data. The outcome of the study found working capital (WC) variables including current asset ratio, cash conversion cycle, firm size, and current asset turnover reported a positive significant influence on firm profitability (ROE). Further study also uncovered negative interaction between accounts receivable dayson return on asset (ROA).

From another perspective, Godswill, Ailemen, Osabohien, & Systems (2018) conducted a study on Nigeria commercial banks for seven years from 2010-2016. The author's purpose was to determine empirically whether the profitability of banks presumably improved through managing WC. Using a sample of ten commercial banks, the OLS model was used for the estimation where (ROA) and (ROE) were used as proxies for bank performance with the variables of WC; net interest income, current ratio, profit after tax, and monetary policy rate. Findings from the research discovered that WC ratios have a major influence on a bank's profitability measured by return on equity. Thus, finding suggests that there must be a constant evaluation of the minimum capital base of the Nigerian commercial banks hence to lessen the effects of inflation.

According to Yahaya et al. (2015), they conducted similar work on the impact of Current ratio, Quick ratio, and Cash ratio on the profitability of listed banks in Nigeria spanning from 2007 to 2013. The materials for the survey were retrieved from firms' financial statements, OLS and a robustness check were used to study the data. The empirical result revealed both the current ratio and the quick ratio has a strong positive influence on ROA measured as a proxy for the profitability of listed banks in Nigeria, while cash ratio show adverse control on bank profitability. In conclusion, management is advisable to pay more attention to cash ratio and quick ratio to maintain adequate cash flows because these ratios play a significant role and directly shows a great positive impact on financial performance of banks. Seminal work was presented by Mun & Jang (2015) studied the influence of WC, cash levels, and profitability of hospitality industries. Their study reveals a sturdy inverted U-shape association amid WC and the firm's profitability measured by ROA, which depicts the existence of an optimal working capital level for restaurant firms. Further results indicate interactive effects among WC, cash levels, and profitability. In regards to their findings, the firm's liquidity level is a key component for efficient working capital in the hospitality industries.

In connection with Ben-Nasr (2016) examined the impact of local and foreign ownership using the variable of NWC on firm profitability. Employing conglomerate privatized firms from 54 countries, the study reported U-shape with firm net working capital. The result proved that shareholder's value increased with foreign-owned firms compared to firms owned by the state. A further study reported that companies that are financially strained from developing countries have a strong negative relationship with the value of firm net working capital (NWC). In line with Jędrzejczak-Gas (2017), this researcher researched strategies for managing NWC in businesses working in the building industries registered on the New Connect exchange market. The study uses several management strategies to examine companies operating performance spanning from 2009-2014. The outcome of the survey proves that most of the construction sector uses moderate-aggressive and aggressive-aggressive strategies for operating. This implies most of the company's current assets are high risk of current operation though such business decrease the level of solvency, but quiet remained at an optimal level.

Following, using samples of five developing countries in Africa with differential industrial levels Ukaegbu & Finance (2014) conducted a significant determinate of WCM on firm profitability spanning from 2005 to 2009. Employing balanced panel data obtained from the annual balance sheet from manufacturing firms of five countries. The study reported that with different industrialization typologies, the variable cash conversion cycle's (CCC) proxy by working capital exhibited a negative interaction between firm profitability (ROA). The negative relationship indicated that a rise in CCC will result in a decline in profit margin. Further study disclosed an affirmative result of size on firm performance which is a key factor, attributed to high-skilled managers, use technology and enjoy economies of scale. In connection with Yeboah&Yeboah (2014) using panel regression

models surveys the influence of WCM on bank's profitability in Ghana for the period 2005–2010. More specifically, the research examines whether the WC policies of the chosen banks are related to more profitability. The experiential result shows that CCC is inversely connected to the bank's profitability slightly.

Scholar, Hailu & Venkateswarlu (2016) studied the influence of working capital on Ethiopian industrialized firms and demonstrated how liquidity levels affect firm profitability. The study employs statistical techniques to comprehend the relationship that exists between the variables to provide better decision making for management. The empirical results show that the variables used to measure working capital exhibited a lower association with profitability. Following Bulin, Basit& Hamza (2016) performed research that pursues to establish the explore the effect of WC concerning the profitability of Malaysia's consumer product firms. Samples of 50 companies registered in Bursa Malaysia, spanning from 2011- 2015. Using multiple regression analysis, the result shows an insignificant relationship between the WC ratio and the debtor's collection period on return on asset. Conversely, only one variable CCC revealed a positive significant effect on ROE. Base on the immense evidence for a positive relation, the researcher formulated this hypothesis:

H1: There is a positive relationship between working capital and profitability of banks in Ghana.

2.2. Relationship between Debts Financing and Profitability

A study conducted by Pradhan & Khadka (2017) surveys the influence of financial constraints on the profitability of 22 banks from Nepal for the period 2008 to 2014. Using capital structure surrogated by STD, LTD, TD, and interest coverage ratio for the study. The finding of the regression analysis reported a positive correlation between banks' profitability with STD, interest coverage ratio, and bank size. However, further results reveal that ROE is adversely interrelated to LTD, TD, and debt to equity ratio. Siddik, Kabiraj& Joghee (2017) studied 22 banks from 2005 to 2014 and conducted experiential research on the impacts of debt capital on the profitability of banks in Bangladeshi. Using ROE, ROA, and earnings per share (EPS) to assess the bank's financial performance, the outcomes from pooled ordinary least square analysis indicated that CS negatively influence bank profitability.

Another study conducted by Harelimana (2017), explored the impact of debt structure on firm profitability by using a relative survey between I&M Bank and Bank of Kigali for six years. Employing descriptive and correlative analysis the author reported a strong positive correlation between debt level and profitability for both I&M bank and Bank of Kigali. Scholar, Schulz (2017) examines the influence of debt capital on the profitability of Dutch unquoted Small and Medium Enterprises using panel data collected from 3,363 unquoted Small and Medium Enterprises covering the year 2008- 2015. Findings from the research indicated that debt capital represented by LTD, STD, and TD had a great negative effect on the firms' profitability proxy by ROA. Suleiman & Ahmed (2016) in their study, determined the influence of capital structure on companies' profitability in Nigeria. Employing a sample of seven (7)

registered companies from the building materials industry during the period 2005-2014 was utilized for the survey. Finding from the multiple regression output indicated that debt financing measured by LTD, STD, and equity had an insignificant effect on the firms' profitability as proxy by ROA.

Narang (2018) studies the impact of debt financing using variables such as STD, LTD, and TD on firm profitability of 20 listed companies in India spanning from 2012-2017. The empirical works indicate that all debt variables, STD, LTD, and TD, have significant inverse influences on return on assets. The findings of the study disclosed that TD, LTD, and STD have significant positive impacts on ROE and EPS. The study found debt financing recording a positive impact on firm profitability. Udeh et al. (2016) also established empirical research on the influence of DF on the profitability of registered Nigerian companies. Using Pooled OLS, Fixed Effects, and Random Effects model as a regression estimation and panel data spanning the period 2001-2012. The regression analysis indicated that debt structure has adverse and significant control on ROE of listed companies in Nigeria. Other studies have been done in different part of the world and came out with their own findings.

Magoro & Abeywardhana (2016) survey the impact of debt capitals of registered manufacturing firms operating in South Africa to determine whether debt affects their financial performance by using fixed-effect models. The study employs a sample of 25 firms covering 2011-2015. The study reveals that debt capital, surrogated by STD and LTD has an adverse power on the financial profitability proxy by ROE. In related work, Bui (2017) researched 18 British Gas and Oil companies and investigate the effects of debt financing on profitability by using published data from financial statements from 2009 to 2014. Findings from the result revealed strong adverse control of debt on the profitability of ROA and ROE, of those firms. Further findings of the researcher revealed that firms that rely on debt for financing its operations exhibit poorer performances, thus to maximize profit, the author advises firm managers to carefully consider how to use optimal level of debt to eliminate elements of bankruptcy cost and maximized profit.

Vuong, Vu, & Mitra (2017) surveyed the influence of capital structure on the financial performance of 739 quoted firms on the London Stock Exchange between 2006 and 2015 for the survey under review. The analysis from the results indicated that capital structure proxy by long-term liabilities had a significant adverse influence on the firms' profitability represent by return on asset, return on equity, and Tobin's Q in most of the studied sectors, whilst capital structure proxy by short-term liabilities had an insignificant influence on the firms' ROA, ROE and Tobin's Q. A study by, Adeyemi, Unachukwu & Oyeniyi, (2017) surveyed the effect of debt financing on the profitability of insurance companies in Nigeria. Using a sample of six registered insurance firms covering the year 2012 to 2016 was used for the study. The correlation and regression analysis of the work shows that capital structure surrogated by debt ratio and the debt-equity ratio had an adverse link between the company's profitability as a proxy by ROA and ROE.

Mbahijona (2016) reviewed an influence of debt levels on the profitability of 21 companies quoted on the Namibian Stock Exchange covering from the year 2010-2013. Findings from the study revealed that debt levels surrogated by STD, LTD, and TD had a significant adverse influence on the firm's profitability as proxies by NPM, ROA, and ROE. Yong (2015) explored the weight of capital structure on the profitability of 10 plantation firms published on the Malaysia Stock Exchange covering the year 2008-2011. The author discovered STD and LTD shows a significant positive link with companies' profitability measured by ROE and ROA, but CS proxy in terms of TD had a significantly adverse interaction with the companies' profitability. Kanwal, Shahzad, ur Rehman, & Zakaria (2017) established the influence of debt financing on the profitability of non-financial firms in Pakistan. The survey was done on 213 listed companies on the Karachi Stock Exchange for the period 1999 to 2015 using panel data. Employing multiple regression analysis, the variable long-term debt had a negative significant effect on the firms' profitability as proxies by ROA, ROE, Tobin's Q, and Price Earnings (PE) ratio, but debt financing measured by short-term debt had a significantly adverse effect on the firms' profitability surrogated by ROA and ROE. The following hypothesis is derived from the discussion above:

H2: There is a positive interaction between debt financing and the profitability of banks in Ghana.

2.3. Relationship between Working Capital and Debts Financing on Profitability

Currently, no study has been studied on the effect of working capital and debt financing on the profitability of banks in Ghana, therefore the researchers seek the opportunity to further examine the effect of the said topic and it's important for Ghana. In Ghana, most of the firms including the banking industries use debt as their external source of fund for their operations but has no idea about how to use an ideal level of debt that will not negatively influence their financial performance and hence increase shareholders return. More so, many banking sectors have issues of managing their working capital, thus holding the firm's assets in liquid states which creates another problem for managers by not able to settle their short-term debt when maturity is due. All these depend on managerial skills and capability to clear their debt in terms of STD and LTD by increasing sales to improve the economic conditions of Ghana. The following hypothesis is derived from the discussion above:

H3: There is a positive moderating effect between working capital and debt financing on the profitability of banks in Ghana.

3. Research method

3.1. Sample and Data Collection

In this paper we selected twenty- two licensed banks in Ghana for carrying out the research ranging from the year 2008-2018. Out of twenty- three banks we narrowed the research to twenty- two (22) banks due to availability of data. The paper examines banking industries from two different perspectives that is the local and foreign banks in Ghana. These selected banks includes Access Bank , Agricultural Development Bank , Bank of Africa Ghana , Barclays Bank Ghana , CalBank , Ecobank Ghana , FBNBank Ghana , Fidelity Bank Ghana, First Atlantic Bank, First

National Bank, Ghana Commercial Bank, Guaranty Trust Bank, National Investment Bank, OmniBank Ghana, Prudential Bank, Republic Bank Ghana, Société General Ghana, Stanbic Bank Ghana, Standard Chartered Bank Ghana, United Bank for Africa, Universal Merchant Bank and Zenith Bank. The purpose of this study is to empirically investigate the impact of working capital and debt financing on the profitability of in Ghana. The analysis of the data collected from the financial statements of the selected banks was analyze and interpreted using a panel model with the aid of analytical tool STATA 14. The study used balance panel data approach for the research because it combines both time series and cross sectional data hence it is expected to give unbiased estimators. Also, the panel data model gives researchers greater flexibility to control the impact of individual-specific variables and time-specific variables B. Baltagi, Egger, and Pfaffermayr (2014).The data for the study was collected and retrieved from the audited annual financial reports, Fact Book of Ghana Stock Exchange and from the web portals of individual banks.

3.2. Regression model

The main aim of this paper is to measure the impact of independent variables on bank profitability, by using multiple regression equations. It then follows;

$$Profitability_{i,t} = \alpha_0 + \alpha_1 WC + \beta X + \mu_{it} \dots\dots\dots(1)$$

$$Profitability_{i,t} = \alpha_0 + \alpha_1 DF + \beta X + \mu_{it} \dots\dots\dots(2)$$

$$Profitability_{i,t} = \alpha_0 + \alpha_1 WC + \alpha_2 DF + \beta X + \mu_{it} \dots\dots\dots(3)$$

To study the potential interaction between working capital and debt financing on bank profitability we consider this specification:

$$Profitability_{i,t} = \alpha_0 + \alpha_1 WC + \alpha_2 DF + \alpha_3 WC * DF + \beta X + \mu_{it} \dots\dots\dots(4)$$

Where, profitability is proxy by return on equity (ROE), working capital (WC) is represented by borrower’s collection period (BCP) and bank cash conversion cycle (BCCC), debt financing is surrogated by short-term debt (STD) and long-term debt (LTD), X is a vector of control variables encompassing bank size (BS) and assets growth (A.GRW), current ratio (CUR) and age(AG) α_0 is the constant term, $\alpha_1 \dots \alpha_n$ represents the slope coefficients of the main explanatory variables, β denotes the slope coefficients of the control variables, u is the error term which is expected to be normally distributed, i denotes the studied entities and t represents the study period.

3.2.1. Dependent variables

Return on Equity (ROE) is the explanatory variable used as a proxy for measuring the profitability of banks in Ghana. This variable has been used by several authors in the financial literature including Ukaegbu (2014)), Pradhan & Khadka (2017)Narang (2018), and Kanwal et al. (2017). Return on Equity (ROE) is also a profitability indicator that strategically measures the capability of a bank to make a profit on shareholders’ equity. This is computed as dividing net income by shareholder's wealth.

3.2.2. Independent variables

The explanatory variables include working capital and its elements which are surrogated by the borrower’s collection period (BCP) and bank cash conversion cycle (BCCC). While debt financing is also presented by short-term debt (STD) and long -term debt (LTD). These variables are briefly explained below respectively:

Borrowers’ collection period (BCP) measures how long banks take to receive payment owned in terms of accounts receivable. This variable was used by many scholars including Godswill et al. (2018); Yakubu et al.(2017) and Bulin et al. (2016), in their found that borrowers collection harms firm profitability. This can be calculated as Bank’s current assets divided by interest income, all multiply by 365 days.

Bank cash conversion cycle (BCCC) measures the number of days it takes a bank to alter its assets into cash. The shorter the cycle, the less time capital is tied up in the business process and the better for the company and vice versa. In their study, (Akoto et al., 2013) find a significant interaction between profitability and BCCC of listed manufacturing firms in Ghana. Thus computed as accounts receivable days plus inventory days less accounts payable days.

Short-term debt (STD) is the amount of loan that is payable to the lender within a year. This can be computed as current liabilities divided by total assets. Studies from some researchers have proven that most companies use a significant sum of short-term debt to fund their operations compare to long-term debt (Abor, 2005; Amidu, 2007). Abor (2005), found a significant positive relationship between company profitability and short-term debt. Whereas, (Amidu, 2007) established an inverse association between short-term debt and firm profitability. However, in this study, the scholar anticipates a significantly negative connotation between short-term debt and the two profitability measures.

Long-term debt (LTD) consist of any amount of outstanding debt that a company holds that has a maturity lasting over one year.It is calculated as long-term debt divided by total assets. This variable was used by several researchers including Suleiman & Ahmed (2016), Schulz (2017) and Bui (2017) in their surveys reported an insignificant impact of LTD on company's profitability. However, in this current work, the researcher assumes a strong positive interaction between LTD and bank's profitability proxies by return on assets and return on equity.

3.3. Control variables

Extant literature have suggested that firm size and age can influence banks profitability however, this paper will include an additional two which are current ratios and growth for the study.

Bank size (BS) can be simply defined as natural logarithm of net interest income. According to Alzomaia and Research (2014), claims that large banks can easily access loans and other financial assistance from Central bank because their probability of default payment is very low compared to other small banks. Age (AG) can be term as a number of year a firm has been in an operations for a

longer period of time, and constantly establishes good business status in terms of good managerial skills and credit worthiness. Current ratio (CUR) is the ability of banks to pay off short-term debt with the current assets which signifies liquidity position of a company. It is computed by dividing current asset by current liabilities. Growth (GRW) is measured as changes in banks total revenue. Salim&Yadav (2012) assert that banks growth will significantly affect their financial performance.

4. Empirical Analysis Result

4.1. Descriptive Analysis

Table 5.1 reveals the descriptive statistic of 22 licensed banks in Ghana covering the period 2008-2018. The descriptive statistics of the output, explanatory, and control variables used in the study are described in the above table. Profitability proxy by Return on Equity (ROE) was chosen as the explained variable. Other variables used in the analysis include Borrowers collection periods (BCP), Bank Cash Conversion Cycle (BCCC), Short-term debt (STD), Long- term debt (LTD), Bank Size (BS), Asset growth (A.GRW), Current ratio (CUR) and Age (AG). The main descriptive statistics comprises of the mean, maximum, minimum, standard deviation, skewness, kurtosis, and JB test values of the variables were used.

In general, the descriptive statistics begin to interpret the sampled for all the licensed banks in Ghana which are giving the mandate to operate. The table disclosed that the average return on equity (ROE) varies from 25.5% to 33.6% with a minimum value of 16.3%. It also recorded a standard deviation of 37.5%, which implies that financial management is efficiently and effectively utilizing their capital to generate income and profits on shareholder's equity. The positive coefficient of ROE indicates favorable conditions for prospective shareholders since they are expected to get a return on their investments and also indicate that banks are using their retained earnings to generate more revenues.

Borrower's collection period (BCP) has a total mean of 18 days with a maximum of 25 days and a minimum of 8 days with a standard deviation of 4days.The results imply that relatively, licensed banks in Ghana must not lengthen credit to their clients beyond 18 days. Furthermore, it also takes 19 days for the licensed banks in Ghana within the period under study to change their liquid assets (BCCC) into cash. However, some of the banks could take as long as 25 days and a minimum of 10 days to achieve this. Short-term debt to total assets (STD) of the banks has the mean values of 45days with a maximum value of 2.354days and the minimum value of 0.485days, thus recorded a standard deviation of 0.347days. Short-term debt recording about 44.5% is a clear indication that

Ghanaian banking industries largely depends on short term-debt for funding their activities concerning long-term instruments.

Likewise, long-term debt to total (LTD) has an average mean of 20days with a maximum of 55days and a minimum value of 10days with a standard deviation ranging from 4.539days. The value of long-term debt implies that the banks own more assets than liabilities and can meet their debts by selling their assets if the need arises. On average, 20% of the company's assets are financed through debt. An increasing trend of the average values for LTD signifies that banks will not be able to settle their liabilities when they fall due, which can lead to possible bankruptcy shortly. Bank size (BS) has a mean of 18 with a maximum of 25days and a minimum of 7days and recorded 3.776days as standard deviation. More so, asset growth (A.GRW) measured by bank total assets has an average mean of 26.963 % annually with a maximum of 35.019% with a minimum value ranging from 14.001% thus recorded 4.687 % as standard deviation. The high mean of growth indicated that banks have a higher rate of return on their assets and shareholders' equity thus increases bank profitability. The current ratio (CUR) has an overall mean of 22.089 with a maximum of 34.004 and a minimum of 7.031 with a standard deviation of 5.262%. This implies, that moderately banks ought to have adequate cash to settle their debts. The descriptive statistics further show age (AG) having a mean value of 8.054% with a maximum of 10.100 and a minimum of 3.021% with a standard deviation of 2.776%.

Per the skewness values depicted in table 1, a greater proportion of the variables ROE, BCP, BCCC, BS, A.GRW, CUR, and AG distribution lies on the right-hand side of the normal curve, meaning that it is negatively skewed, depicting their coefficient respectively (-0.207, -0.303, -0.345, -0.555, -0.497, -1.031 and -0.728). However, the STD and LTD distribution is positively skewed implying that, a bigger portion of its distribution lies on the left side of the normal curve with their coefficient values respectively, (2.098 and 3.674). Finally, the kurtosis values for the following variable results shown in table 1 indicated that BCCC, STD, LTD, BS, and CUR coefficient (3.161, 11.015, 31.253, 3.353, 3.478), attesting that the distribution was not normally distributed, thus are leptokurtic which simply means that their kurtosis values were greater than 3.

More so, the Kurtosis distribution for ROE, BCP, and AG has the values of the following coefficients (2.598, 2.938, and 2.188) respectively thus were platykurtic in shape indicating that their kurtosis value was lesser than 3.

Table 4.1 Descriptive Statistical Analysis of the study variables

Variables	ROE	BCP	BCCC	STD	LTD	BS	A.GRW	CUR	AG
Mean	0.255	17.962	19.363	0.445	19.716	18.441	26.963	22.089	8.054
Maximum	0.336	25.031	25.059	2.354	55.034	25.031	35.019	34.004	10.100
Minimum	0.163	8.056	10.003	0.485	10.032	7.004	14.001	7.031	3.021
Std. Dev.	0.375	3.761	3.227	0.347	4.540	3.776	4.687	5.262	2.776
Skewness	-0.207	-0.303	-0.345	2.098	3.674	-0.555	-0.497	-1.031	-0.728
Kurtosis	2.598	2.938	3.161	11.015	31.252	3.353	3.288	3.478	2.188
JB test	3.356	3.742	5.069	82.373	85.042	13.674	10.815	45.199	28.063

Note: ROE= Return on Equity, ROA= Return on Asset, BCP= Borrowers Collection Periods, BCCC= Bank Cash Conversion Cycles, STD= Short- term debt, LTD= Long term-debt, BS= Bank Size, A.GRW= Asset Growth, CUR= Current ratio, AG= AGE.

4.2. Correlation Matrix Results

The correlation coefficient was used to discover the connection between the variables used for the study from Table 4.2. The analysis first started by analyzing the correlation results between the borrower's collection period (BCP) and ROE. The correlation analysis between the borrower's collection period (BCP) and return on equity (ROE) shows a strong positive coefficient of 0.754 and a probability value of 0.000. The outcome displays a highly significant at $\alpha = 0.01$ and it implies that the shorter the number of days banks use to collect money from their creditors will lead to high solvency, and it will cause banks profitability (ROE) to increase. This discovery opposes that of Yeboah et al. (2012) whose study revealed an adverse association between borrower's collection period profitability.

Again, the result discovered a significantly positive correlation amid profitability (ROE) and bank cash conversion cycle (BCCC) with a coefficient of 0.536 and a p-value of 0.001 respectively. According to Bulin et al. (2016) establish a significant interaction between BCCC and ROE. However, this present study was consistent with much previous literature including Akoto et al. (2013), Yeboah et al. (2014), Godswill et al. (2018) uncovered that ROE has a significant association with bank cash conversion cycle. The result implies that licensed banks in Ghana would be cost-effective if the number of days taken to change its assets into cash is slightly lengthened.

Similarly, the outcomes from the correlation analysis indicate a negative insignificant connection between STD with ROE. The finding is in line with Magoro & Abeywardhana (2016) and Bui and management (2017). However, this result contradicts Narang (2018) who found a significant positive link between the short-term debt and bank profitability (ROE). Furthermore, the correlation result of long-term debt (LTD) is statistically significant on ROE with a coefficient of 0.332 and a probability of 0.000. However, the coefficient for long-term debt is positive which implied that higher debt ratios increase banks profitability in Ghana and this result contradicts with other studies that revealed an adverse link between long-term debt and bank profitability with most prior works including that of Pradhan & Khadka (2017) and Magoro & Abeywardhana (2016).

Further results from the study reveal that bank size reported a strong positive weight on ROE with a coefficient of 0.729 at a significant level of 0.000. These findings indicated that as the size of banks increases their profitability also increases due to economies of scale. This result is consistent with other empirical studies that found size reported a positive impact on profitability Yakubu et al. (2017). More so, the study observed that assets growth (A.GRW) use as a proxy for measuring a change in bank total assets has a substantial control on ROE.

The correlation analysis from table 5.2, disclosed a positively and statistical interaction between ROE on the current ratio (CUR) with a coefficient of 0.526 and significant at a level of 1%. This implies, that licensed banks that increased their profit margin need more liquid assets to pay off its obligations. Although the outcome is conflicting to other prior research as well as that of Raheman and Nasr (2007) and Eljelly (2004), opinions that it's very important to note that a rise in bank's current assets might not hinder shareholders worth in the Ghanaian case. Finally, the study discovers that the correlation result of age (AG) on bank profitability (ROE) also has a strong positive coefficient of 0.587 and 0.879 at 1% significant level respectively. This specifies that the number of years in business increases the banks' reputation and creditworthiness and profitability.

Table 4.2 Correlations of the variables

Variables	ROE	BCP	BCCC	STD	LTD	BS	A.GRW	CUR	AG
ROE	1.000								
BCP	0.754* (0.000)	1.000							
BCCC	0.536* (0.000)	0.206* (0.001)	1.000						
STD	-0.009 (0.889)	-0.069 (0.285)	0.019 (0.771)	1.000					
LTD	0.332* (0.000)	0.189* (0.003)	0.628* (0.000)	-0.003 (0.962)	1.000				
BS	0.729* (0.000)	0.772* (0.000)	0.231* (0.000)	-0.021 (0.743)	0.084 (0.194)	1.000			
A.GRW	0.526* (0.000)	0.186* (0.003)	0.772* (0.000)	0.008 (0.833)	0.601* (0.000)	0.221* (0.000)	1.000		
CUR	0.526* (0.000)	0.971* (0.000)	0.008 (0.900)	0.601* (0.000)	0.216* (0.003)	-0.372* (0.000)	0.662 (0.042)	1.000	
AG	0.879* (0.000)	0.772* (0.000)	0.231* (0.000)	-0.021 (0.743)	0.084 (0.194)	0.221* (0.001)	-0.067 (.300)	0.628* (0.000)	1.000

Note: ROE= Return on Equity, ROA= Return on Asset, BCP= Borrowers Collection Periods, BCCC= Bank Cash Conversion Cycles, STD= Short- term debt, LTD= Long term-debt, BS= Bank Size, A.GRW= Asset Growth, CUR= Current ratio, AG= Age.

Note; ***, **, * implies significance at the 1%, 5% and 10% levels and values in parenthesis () represent probabilities

4.3. Test for Multi-Collinearity

Per the clarification by Kock & Lynn (2012), multi-collinearity emanate when two or more explanatory variables are extremely interrelated with each other which becomes challenging to propose consistent evaluations of their coefficients. For this reason, multi-collinearity can create high confidence intervals and reduce dependable likelihood values, and distorting inferences Gujarati (2009). The scholars decided to ascertain whether the predictor variables were extremely interrelated or not. Multi-collinearity was discovered through the Variance Inflation Factor (VIF) afterward conducting the GLM regression analysis with ROE as the measured variable and BCP, BCCC, STD, LTD, BS, A.GRW, CUR, and AG as the independent variables. The basic principle is that, a variable with a VIF more than 5 ($VIF > 5$) or a degree of tolerance lower than 0.2 ($1 / VIF < 0.2$) was review to be greatly collinear with the other regressor. Commencing Table 5.3 the VIFs of BCP, BCCC, STD, LTD, BS, A.GRW, CUR, and AG with their degrees of tolerance ($1 / VIF$) signposted that the variables were not highly correlated to each other ($VIF < 5$; $1 / VIF > 0.2$). This suggests that all the variables were fit to be used together in the work.

Table 4.3 Multi-Collinearity Test Results

Variables	VIF	1/VIF
BCP	2.62	0.382
BCCC	9.00	0.111
STD	1.01	0.990
LTD	1.74	0.576
BS	2.65	0.377
A.GRW	7.93	0.126
CUR	1.03	0.971
AG	1.51	0.662
Mean VIF	3.44	

Note: VIF = Variance Inflation Factor, BCP= Borrowers Collection Periods, BCCC= Bank Cash Conversion Cycles, STD= Short- term debt, LTD= Long term-debt, BS= Bank Size, A.GRW= Asset Growth, CUR= Current ratio, AG= Age.

4.4. Test for Heteroscedasticity

Heteroscedasticity occurs once the standard deviations of an independent variable are examined over different values of a predicted variable or as interconnected to previous time frames or non-constant. (Giles, 2013; Ginker & Lieberman, 2017; Gujarati, 2009). Heteroscedasticity is regarded as more challenging such that, it could lead to biased standard errors, and because standard errors are significant to directing importance checks and computing confidence intervals. The Breusch & Pagan (1979) and Cook & Weisberg (1983) heteroscedasticity test, which test the null hypothesis that, there is the nonexistence of heteroscedasticity among the fitted values of a model Breusch & Pagan (1979) and Cook & Weisberg (1983) was adopted for this study. From Table 5.4, the Test values for three models with their respective values of 57.00, 42.81, and 54.50 with a probability of 0.0000 was statistically significant at the 99% confidence interval. The study thus rejects to accept the null hypothesis that, there was a lack of heteroscedasticity among the fitted values of the ROE working model and established that, there was the presence of heteroscedasticity between the right values of the ROE working model. A more random- affect robust GLS regression estimator was therefore regarded as suitable for assessing the study's working model.

Table 4.4 Heteroscedasticity Test Results for Regression Models

Regression Models	Test type	Test method	Test value	Probability
Model 1a	Heteroscedasticity Test	Breusch and Pagan Test	57.000	0.000***
Model 1b	Heteroscedasticity Test	Breusch and Pagan Test	39.870	0.001***
Model 2a	Heteroscedasticity Test	Breusch and Pagan Test	42.810	0.000***
Model 2b	Heteroscedasticity Test	Breusch and Pagan Test	26.070	0.004***
Model 3	Heteroscedasticity Test	Breusch and Pagan Test	54.500	0.000***

4.5. Test for Serial Correlation

According to Verbeek (2008) and Colberg & Höfling(2011) serial or autocorrelation is calculated present a magnitude of similarity concerning a given time series or a cross-section and a lagged form of itself over continuous time intervals. It is also denoted as lagged correlation as it measures the association between a variable's current value and its past values Verbeek (2008) and Colberg & Höfling (2011). Autocorrelation was considered detrimental because its existence could make the computed standard errors, and consequently the p-values to be misleading making room for wrong conclusions or tests of hypothesis. Similarly from Wooldridge (2016) serial correlation test outcomes, test the null hypothesis of no serial correlation in the panel data cannot be disallowed. Therefore, Wooldridge Test which measures autocorrelation in residuals from regression analysis with the assumptions that, the errors are mostly apportioned with a mean of 0 and that, the inaccuracy is stationary was accepted for this research. Hence the outcomes from this test indicate that the proven panel data model was valid. Hence Table 4.5 summaries the outcomes established on the serial correlation tests.

Table 4.5 Serial Correlation Test Results for Regression Models

Regression Models	Test type	Test method	Test value	Probability
Model 1a	Serial Correlation Test	Wooldridge test	17.008	0.005***
Model 1b	Serial Correlation Test	Wooldridge test	12.9.830	0.000***
Model 2a	Serial Correlation Test	Wooldridge test	21.251	0.002***
Model 1b	Serial Correlation Test	Wooldridge test	35.012	0.014***
Model 3	Serial Correlation Test	Wooldridge test	23.492	0.001***

4.6. The Hausman Specification Tests

The Durbin (1954), Wu (1973), and B. H. Baltagi (1989) model specification test were adopted for this study. Essentially, the Durbin-Wu-Hausman test also well-known as Hausman’s specification test or *m*-statistic, check if there exists a unique correlation between an error and the repressors in a model Durbin (1954), Wu (1973) and B. H. Baltagi (1989). It is also employed to test for a hypothesis to check for bias or irregularity of an estimator Greene (2012), Durbin (1954), and Hausman (1978). To select between the fixed effects model and the random-effects model, The Durbin–Wu–Hausman test with the null hypothesis of the random-effects GLS model was superior to that of the fixed effects model Durbin (1954), B. H. Baltagi (1989) and Wu (1973) was accepted for the study’s model. As a rule of thumb, if performed and the likelihood value is less than 0.05 (i.e. $p < 0.05$) then there is a correlation between the error terms and the response variables and the fixed effects is approved in the model estimation otherwise the random effects is a more efficient estimator of the parameters under the analysis. Table 4.6 beneath displays the outcomes of the Hausman specification tests.

Table 4.6 Hausman Tests Results

Model	Test Value	Prob.
Model 1a	13.640	0.813
Model 1b	10.540	0.831
Model 2a	5.550	0.235
Model 2b	1.300	0.362
Model 3	8.140	0.228

Results of the specification test showed a Test Value for all the three models used in the study with their respective values (13.640, 10.540, 5.550, 1.300 and 8.140) which was statistically insignificant at $\alpha = 5\%$ [$(p = 0.813)$, $(p = 0.831)$, $(p = 0.235)$, $(p = 0.362)$, $(p = 0.228) > 0.05$] respectively. The research thus failed to reject the null hypothesis that, the random-effects model was ideal over the fixed effects model and established that, the random-effects GLS regression estimator was the most suitable estimator for all the fitted values of the ROE model, which focus on the result of the random effect test.

4.7. Benchmark Regression

This chapter presents multiple regression analyses that were conducted and discussed using the panel data. The regressions model’s analysis was engaged to survey the link between the element of working capital and debt financing on the profitability of banks in Ghana, measured by ROE. Working capital measured by borrower’s collection periods (BCP) and bank cash conversion cycle (BCCC) whiles debt financing was proxy by STD and LTD would be independently regressed against bank profitability. The relevant measure of profitability is ROE. As detailed in the earlier section, two main regressions analyses were carried out in the study. Table 4.7, presented results of estimating four regression models which will be discussed separately. However, model 4 of the regression model in table 4.8 would also be detailed on the moderation effect that exists between each variable in the study.

Table 4.7 Main panel Regression Estimates of ROE (Robust Random-Effects GLS)

Variables	Model 1a	Model 1b	Model 2a	Model 2b	Model 3
BCP	0.053 (0.000) ***				0.203 (0.000) ***
BCCC		0.135 (0.035) **			0.019 (0.347)
STD			0.076 (0.884)		0.034 (0.577)
LTD				0.662*** (0.003)	0.209 (0.226)
BS	0.032 (0.202)	0.618 (0.189)	0.402 (0.185)	0.012 (0.330)	0.049 (0.261)
A.GRW	-0.065 (0.304)	0.604 (0.400)	-0.705 (0.417)	-0.031 (0.546)	-0.028 (0.357)
CUR	0.084 (0.000) ***	0.013 (0.075)	0.453 (0.000) ***	0.025 (0.000) ***	0.391*** (0.006)
AG	0.776*** (0.000)	0.218*** (0.000)	0.038*** (0.000)	0.118*** (0.000)	0.607*** (0.000)
Constant	0.045 (0.706)	0.601 (0.360)	0.057 (0.400)	0.003 (0.301)	0.505 (0.689)
R-Square	0.909	0.896	0.894	0.898	0.911
F-Statistic (Prob)	358.560 (0.000)	308.240 (0.000)	301.180 (0.000)	315.020 (0.000)	240.130 (0.000)

Note: ROE= Return on Equity, ROA= Return on Asset, BCP= Borrowers Collection Periods, BCCC= Bank Cash Conversion Cycles, STD= Short- term debt, LTD= Long term-debt, BS= Bank Size, A.GRW= Asset Growth, CUR= Current ratio, AG= Age of firm. Note: ***, **, * implies significance at the 1%, 5% and 10% levels and values in parenthesis () represent probabilities.

Model 1a in Tables 4.7, examines the influence of borrowers' collection period on profitability. The regression analysis shows strong connection between BCP and ROE with a probability value of 0.000. The result discovered a significant decline in the number of days of borrowers' collection periods (BCP) by a day at 0.053%. This finding implies that a profitable bank uses shorter days to receive cash in the form of loan repayments from their customer which intend to increase their return on investment. Based on Model 1b in Table 4.7, discovered a positive association between ROE and bank cash conversion cycle (BCCC) at 0.135% at a significant level of 5%. The findings contradict with Peprah & Riziki (2019); Yeboah et al. (2014) and Avc, (2018) establish an adverse link between BCCC and firm financial performance (ROE) however in line with (Gill, Biger&Mathu (2010) and Hassan & Shrivastava (2019) whose result shown a strong significant connection between BCCC and firm profitability.

The above table in model 2a shows that short-term debt (STD) shows no significant correlation with ROE, however other control variables such as CUR and AG exhibit a strong positive interaction. The study was conversely contradicted with Narang (2018); Pradhan & Khadka (2017) and Yong (2015) whose works uncovered short-term debt (STD) as a significant factor of profitability. Further, the regression analysis in model 4b reported a significantly positive influence of LTD on ROE. The significant positive influence of long-term debt on ROE indicates 66% profit on shareholders' equity as most of the bank assets is financed by debt which has greater returns at significant levels of 1%. This outcome was not consistent with several authors including Kanwal et al. (2017), Yazdanfar (2015), Adeyemi et al. (2017) and Bui (2017) whose findings reported an adverse effect of long-term debt on the firm's profitability proxy by ROE. Finally, model 3 in Table 4.7, depicts that the regression analysis on the explanatory and control variables indicate that BCP has a strong positive interaction between bank profitability measured by ROE whereas BCCP, STD, and LTD exhibit no significant effect on ROE. On the other hand, control variables such as current ratio (CUR) and age (AG) shows statistically positive impact on ROE with the exception of bank size and assets growth also shows no significant on profitability of banks (ROE).

4.8. Moderating Effect Analysis

Table 4 2 Results of Moderating effect Analysis

Variables	4a	4b	4c	4d
BCP	0.116(0.013) **	0.013(0.943)		
BCCC			0.249(0.058)	-0.014(0.014) ***
STD	-0.191(0.212)		-0.162(0.887)	
LTD		-0.103(0.552)		-0.007(0.000) ***
BCP*STD	0.122(0.009) ***			
BCP*LTD		0.074(0.372)		
BCCC*STD			0.591(0.849)	
BCCC*LTD				0.812(0.002) ***
BS	0.670(0.000) ***	0.674(0.000) ***	0.794(0.000) ***	0.799(0.000)
A.GRW	0.278(0.000) ***	0.026(0.000) ***	0.110(0.309)	0.135(0.232)
CUR	0.032 (0.041)	-0.503(0.005) ***	0.239(0.114)	0.696 (0.289)
AG	0.017(0.000) ***	0.024(0.000) ***	0.025 (0.000) ***	-0.030 (0.463)
Constant	0.345(0.000)	0.136(0.000) ***	0.005(0.000) ***	0.529 (0.000) ***
R- Square	0.783	0.806	0.768	0.826
F-statistic (Prob)	128.450(0.000)	143.440(0.000)	118.070(0.000)	0.604(0.000)

Notes: ROE= Return on Equity, BCP= Borrowers Collection Periods, BCCC= Bank Cash Conversion Cycles, STD= Short- term debt, LTD= Long term-debt, BS= Bank Size, AG= Asset Growth, CUR=Current ratio, AG= Age

Notes: ***, **, * implies significance at the 1%, 5% and 10% level and values in parenthesis () are probabilities.

The results showed in Table 4.8, in model 4a indicated that the variables STD (-0.191) and CUR (0.032) were insignificant. Despite the insignificant and indirect relationship between current ratio and short-term debts on ROE, however, bank size, asset growth, and age established a direct and positive result on ROE with a confidence intervals level of 1%. The probability (F-statistic) value was found to be significant at 1%, showing the general significance of the model. The positive and significant nature of the moderating variable of borrower's collection periods multiplied by STD (0.009) shows that borrower's collection periods affect the relationship between STD (as a measure of debt financing and ROE (a measure of profitability) of the bank. This result implies that the combining effects are very important in defining returns on equity in the financial sectors in Ghana. This means that BCP*STD on bank

profitability hypotheses do occur in the financial industry in Ghana under the period of investigation. We must understand that debt can positively or negatively have an influence on returns on equity which depends on the amount of debt used in executing projects.

According to the results in model 4b, showed that the variables of bank size (0.674), asset growth (0.026), and age (0.024) are positively significantly at 1% significance, while the moderating variable of BCP*LTD was not significant. The insignificance of borrower's collection period (0.013) and borrower's collection periods *LTD (0.074) indicates that there is no relation between borrowers' collection periods and the profitability of the bank and that this variable may not affect the interaction between WC and the bank profitability. The obtained value of Adjusted R-square explained some 81% of ROE. The

obtained value of the Fisher statistic (143.440) indicated the general significance of the model.

From the above table in model 4c, it can be observed that both the independent and the moderating variables reported no major effect on profitability measured by ROE. The positive coefficient of the moderating variable, bank cash conversion cycle multiplied by STD (0.591) shows that BCCC affects the relationship between STD (as a measure of debt financing) on ROE (a measure of profitability) however, reported insignificant. The value of Adjusted R-square shows that variables of this model can explain some 78% of variations in ROE. Fisher statistic (F-value) was found to be significant at 1%, showing the general significance of the model. Base on the outcomes revealed in table 4.8, in model 4d the variables BCCC (-0.014), LTD (-0.007), bank size (0.799), and asset growth (0.135) were not significant. Despite the negative association between both BCCC and LTD on ROE, the variables were found to have a significant influence on return on equity. However, the adverse and significant nature of the BCCC and LTD ratio indicates that a percentage increased in BCCC and LTD, results in a decline in ROE. However, the moderating variable BCCC*LTD was positive at 1% significant level. The results of the test from model 4d obtained the Fisher statistic value of (0.604) representing an overall significance level at 1%. The results show that licensed banks in Ghana can finance their daily operations through the combination of BCCC*LTD at 81.2% to maximize profits.

5. Conclusion and Recommendations

Banks commonly play a key part in the financial growth in every country. Principally, financial institutions play an intermediary role between the excess and spending units of every economy amid other tasks by collecting money from excess units and lending it to deficit units. One major challenge that banks face is how to manage working capital and use the best debt optimal structure decision to determine profit maximization of the banks. The study examined the influence of working capital and debt financing on the profitability of licensed banks in Ghana from the years 2008-2018. Using a panel data approach, the survey revealed a positive and a significant interaction between return on equity, borrower's collection periods (BCP), and bank cash conversion cycle (BCCC) proxy by working capital. This finding means that the profitability of a bank is positively influenced by fewer days for the debtor's collection periods as well as shorter time related to the cash conversion cycle. More so, the bank was able to pay off its financial liabilities within the shortest possible time when the needs arise which is measured by bank cash conversion cycles represented liquidity of the bank, thus the level of profit also increases. Also, the study found that, the moderating variables Borrowers collection periods and short-term debt (BCP*STD), bank cash conversion cycle and short-term debt (BCCC*LTD) has a significant effect on bank profitability surrogated by return on equity (ROE). Whereas, the other interacting variables including BCP*LTD and BCCC*STD recorded no significant impact on return on equity.

Following the assessment of the above results, the survey suggests the following recommendations for the management of the banking institutions in Ghana and

policymakers with a straight opinion that will probably aid to lessen or eliminate the challenges related to WC and debt financing on the profitability of licensed banks. The management should invest the surplus funds of the commercial banks in short-term instruments of the money market. Secondly, licenses banks in Ghana should not only be profit oriented but rather be concerned with using depositor funds well and professionally. To attain this target, banks need reasonable loaning charges that would not discourage clients from acquiring loans. Lastly, the existence of every banks depends on liquidity management and profitability, therefore not only rely on revenue growth concept but also embrace processes the safeguard operational management of working capital and debt financing. This methods will aid reduce or elude cases of unnecessary and poor management of cash flows. Also, investors should be guided by the true liquidity and profitability positions of a bank in any of these firms in their investment decisions.

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*.
- [2] Adeyemi, A. Z., Unachukwu, J., & Oyeniyi, K. (2017). Capital structure and its effect on the financial performance of Nigerian insurance industry. *International Journal of Business & Law Research*, 5(3), 8-15.
- [3] Akoto, R. K., Awunyo-Vitor, D., & Angmor, P. L. (2013). Working capital management and profitability: Evidence from Ghanaian listed manufacturing firms.
- [4] Alavinasab, S. M., & Davoudi, E. J. B. M. D. (2013). Studying the relationship between working capital management and profitability of listed companies in Tehran stock exchange. 2(7), 1.
- [5] Alzomaia, T. S. J. T. I. J. o. B., & Research, F. (2014). Capital structure determinants of publicly listed companies in Saudi Arabia. 8(2), 53-67.
- [6] Amidu, M. (2007). Determinants of capital structure of banks in Ghana: an empirical approach. *Baltic Journal of Management*.
- [7] Avci, E. J. I. (2018). EFFECTS OF 2008 GLOBAL CRISIS ON WORKING CAPITAL AND PROFITABILITY OF TURKISH MANUFACTURING COMPANIES. 3(1).
- [8] Baltagi, B., Egger, P., & Pfaffermayr, M. (2014). Panel data gravity models of international trade.
- [9] Baltagi, B. H. (1989). The equivalence of the Boothe-MacKinnon and the Hausman specification tests in the context of panel data. *Econometric Theory*, 5(3), 454-454.
- [10] Banafa, A., Muturi, W., Ngugi, K. J. I. J. o. F., & Accounting 4 (2015). The impact of leverage on financial performance of listed non-financial firm in Kenya. 20, 2009-2013.
- [11] Ben-Nasr, H. J. J. o. C. F. (2016). State and foreign ownership and the value of working capital management. 41, 217-240.

- [12] Breusch, T. S., & Pagan, A. R. (1979). A simple test for heteroscedasticity and random coefficient variation. *Econometrica: Journal of the Econometric Society*, 1287-1294.
- [13] Brigham Eugene, F., & Houston Joel, F. (2003). *Fundamentals of Financial Management*, South-Western College Pub, 2003. 843 p.
- [14] Bui, N. J. I. j. o. e., commerce, & management. (2017). The impact of financial leverage on firm performance: A case study of listed oil and gas companies in England. *5(6)*, 477-485.
- [15] Bulin, S., Basit, A., Hamza, S. M. J. I. J. o. A., & Management, B. (2016). Impact of Working Capital Management on Firm's Profitability. *4(2)*, 227-241.
- [16] Colberg, P. H., & Höfling, F. (2011). Highly accelerated simulations of glassy dynamics using GPUs: Caveats on limited floating-point precision. *Computer Physics Communications*, *182(5)*, 1120-1129.
- [17] Cook, R. D., & Weisberg, S. (1983). Diagnostics for heteroscedasticity in regression. *Biometrika*, *70(1)*, 1-10.
- [18] Durbin, J. (1954). Errors in Variables. Review of the International Statistical Institute, *22*: 23-32. In.
- [19] Eljelly, A. M. J. I. j. o. c., & management. (2004). Liquidity-profitability tradeoff: An empirical investigation in an emerging market. *14(2)*, 48-61.
- [20] Giles, D. (2013). Robust standard errors for nonlinear models. *Econometrics Beat*.
- [21] Gill, A., Biger, N., Mathur, N. J. B., & journal, e. (2010). The relationship between working capital management and profitability: Evidence from the United States. *10(1)*, 1-9.
- [22] Ginker, T., & Lieberman, O. (2017). Robustness of binary choice models to conditional heteroscedasticity. *Economics Letters*, *150*, 130-134.
- [23] Goddard, J., Molyneux, P., & Wilson, J. O. J. T. M. S. (2004). The profitability of European banks: a cross-sectional and dynamic panel analysis. *72(3)*, 363-381.
- [24] Godswill, O., Ailemen, I., Osabohien, R. J. B., & Systems, B. (2018). Working capital management and bank performance: Empirical research of ten deposit money banks in Nigeria. *13(2)*, 49-61.
- [25] Greene, W. (2012). Estimation and inference in binary choice models. *Econometric analysis*. In: Boston: Pearson Education.
- [26] Gujarati, D. N. (2009). *Basic econometrics*: Tata McGraw-Hill Education.
- [27] Hailu, A. Y., & Venkateswarlu, P. J. I. J. A. R. (2016). Effect of working capital management on firms profitability evidence from manufacturing companies in Eastern, Ethiopia. *2*, 643-647.
- [28] Harelimana, J. B. J. G. J. o. M., & Research, B. (2017). Effect of debt financing on business performance: A comparative study between I&M Bank and Bank of Kigali, Rwanda.
- [29] Hassan, M., & Shrivastava, S. (2019). *Working Capital Management and Its Impact on the Profitability of Tata Motors*. Paper presented at the Proceedings of 10th International Conference on Digital Strategies for Organizational Success.
- [30] Hausman, J. A. (1978). Specification tests in econometrics. *Econometrica: journal of the Econometric Society*, 1251-1271.
- [31] Hoque, A., Mia, A., Anwar, R. J. R. J. o. F., & Accounting. (2015). Working capital management and profitability: A study on cement industry in Bangladesh. *6(7)*, 18-28.
- [32] Jędrzejczak-Gas, J. J. P. E. (2017). Net working capital management strategies in the construction enterprises listed on the NewConnect market. *182*, 306-313.
- [33] Kanwal, M., Shahzad, S. J. H., ur Rehman, M., & Zakaria, M. (2017). Impact of capital structure on performance of non-financial listed companies in Pakistan. *Pakistan Business Review*, *19(2)*, 339-353.
- [34] Kock, N., & Lynn, G. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for information Systems*, *13(7)*.
- [35] Magoro, K., & Abeywardhana, D. (2016). Debt Capital and Financial Performance: A Study of South African Companies.
- [36] Mbahijona, C. (2016). *An analysis of the impact of capital structure on the financial performance of firms listed on the Namibian stock exchange*. University of Namibia,
- [37] Mun, S. G., & Jang, S. (2015). Working capital, cash holding, and profitability of restaurant firms. *International Journal of Hospitality Management*, *48*, 1-11. doi:<https://doi.org/10.1016/j.ijhm.2015.04.003>
- [38] NAIMULBARI, K. (2012). A Research Paper On "The Impact Of Working Capital Management On Profitability" Of Pharmaceuticals Sector In Bangladesh.
- [39] Narang, M. J. I. J. o. A. E. R. (2018). Impact of capital structure on firm performance: A study of listed firms on national stock exchange. *3(1)*, 251-254.
- [40] Nkegbe, P. K., & Ustarz, Y. J. G. J. o. D. S. (2015). Banks performance in Ghana: Trends and determinants. *12(1-2)*, 33-52.
- [41] Peprah, W., & Riziki, A. (2019). *The relationship between working capital and profitability: A confirmatory study from selected banks in Ghana*. Paper presented at the A paper presented at the 1st International Research Forum. On Fire: Excellence in Research, Adventist University of the Philippines, Putting Kahoy, Silang, Cavite, and April.
- [42] Pradhan, R. S., & Khadka, N. J. A. a. S. (2017). The effect of debt financing on profitability of Nepalese commercial banks.
- [43] Prempeh, K. B., & Nsiah Asare, E. (2016). The Effect of Debt Policy on Firms Performance: Empirical

- Evidence from Listed Manufacturing Companies on The Ghana Stock Exchange. [53] Wooldridge, J. M. (2016). *Introductory econometrics: A modern approach*: Nelson Education.
- [44] Raheman, A., & Nasr, M. J. I. r. o. b. r. p. (2007). Working capital management and profitability–case of Pakistani firms. 3(1), 279-300. [54] Wu, D.-M. (1973). Alternative tests of independence between stochastic regressors and disturbances. *Econometrica: journal of the Econometric Society*, 733-750.
- [45] Salim, M., Yadav, R. J. P.-S., & Sciences, B. (2012). Capital structure and firm performance: Evidence from Malaysian listed companies. 65, 156-166. [55] Yahaya, O. A., Kutigi, U. M., Solanke, A. A., Onyabe, J. M., Usman, S. O. J. I. J. o. A., & Asian Studies. (2015). Current assets management and financial performance: Evidence from listed deposit money banks in Nigeria. 45-56.
- [46] Schulz, T. (2017). *The impact of capital structure on firm performance: An investigation of Dutch Unlisted SMEs*. University of Twente, [56] Yakubu, I. N., Alhassan, M. M., Fuseini, A.-A. J. E. J. o. A., Auditing, & Research, F. (2017). The Impact of Working Capital Management on Corporate Performance: Evidence from Listed Non-Financial Firms in Ghana. 5(3), 68-75.
- [47] Siddik, M., Kabiraj, S., & Joghee, S. J. I. j. o. f. s. (2017). Impacts of capital structure on performance of banks in a developing economy: Evidence from Bangladesh. 5(2), 13. [57] Yazdanfar, D. (2015). Debt financing and firm performance: an empirical study based on Swedish data. *The Journal of Risk Finance*, 16(1), 102-118. doi:10.1108/JRF-06-2014-0085
- [48] Suleiman, M., & Ahmed, H. (2016). *The impact of capital structure on firm performance in Nigeria: A study of Nigerian building material industry*. Paper presented at the Proceedings of, 2nd. [58] Yeboah, B., Agyei, S. K. J. E. J. o. B., & management. (2012). Working capital management and cash holdings of banks in Ghana. 4(13), 120-130.
- [49] UDEH, S. N., NWUDE, E., ITIRI, I., AGBADUA, B. J. A. E., & Review, F. (2016). The impact of debt structure on firm performance: Empirical evidence from Nigerian quoted firms. 6(11). [59] Yeboah, B., Yeboah, M. J. I. J. o. B., & Science, S. (2014). The effect of working capital management of Ghana banks on profitability: Panel approach. 5(10).
- [50] Ukaegbu, B. J. R. i. I. B., & Finance. (2014). The significance of working capital management in determining firm profitability: Evidence from developing economies in Africa. 31, 1-16. [60] Yong, H. (2015). Impact of capital structure on firm performance: Evidence from Malaysia Plantation Firms. *An Unpublished Project Submitted in Partial Fulfillment of the Requirements for the Degree of Bachelor of Economics with Honours (Finance), Faculty of Economics and Business, Universiti Malaysia Sarawak*.
- [51] Verbeek, M. (2008). *A guide to modern econometrics*: John Wiley & Sons.
- [52] Vuong, N. B., Vu, T. T. Q., & Mitra, P. (2017). Impact of Capital Structure on Firm's Financial Performance: Evidence from United Kingdom. *Journal of Finance & Economics Research*, 2(1), 16-29.