KWAME NKRUMAH UNIVERSITY OF SCIENCEAND TECHNOLOGY, KUMASI

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TESTING THE PECKING ORDER THEORY OF BANKS LISTED

ON THE GHANA STOCK EXCHANGE

BY

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DECLARATION

I hereby declare that this research is the result of my own work towards the Master of Science (Accounting and Finance) Programme and that, to the best of my knowledge, it contains no material previously published by another person except where due acknowledgement has been made, nor material which has been accepted for the award of any other degree elsewhere.

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DEDICATION

This work is dedicated to my Father and Mother

ACKNOWLEGEMENTS

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ANOVA   Analysis of Variance

DSE   Dar Es Salaam Stock Exchange

GDP   Gross Domestic product

GLS   Generalised Least Square

GMM   Generalised Method of Moment

GSE   Ghana Stock Exchange

JSE   Johannesburg Stock Exchange

MNCs   Multi-National Corporations

POT   Pecking order Theory

UK   United Kingdom

USA   United States of America

ABSTRACT

The research examined the pecking order theory practice of banks listed on the Ghana Stock Exchange. The link between leverage and firm specific characteristics such as profitability, loan quality, growth, age and size of firms was ascertained. The research used quantitative approaches and employed the descriptive designs. Secondary data from the annual financial statements of banks listed on the Ghana Stock Exchange from the year 2010 to 2019 were used for the studies. As at the end of the year 2019, eight (8) banks were listed consisting of Ecobank Ghana Ltd, Societe Generale, Standard Chartered Bank, Cal bank, Agricultural Development Bank, Access Bank, Republic Bank, and Ghana Commercial Bank. The data was analyzed using version 25 of Statistical Package for Service Solution. The Augmented Dickey Fuller, Tolerance, Durbin Watson and Variance Inflation Factor tests were used as estimation techniques to ensure accuracy of data. Panel data regression method was used to establish the presence of the pecking order theory. The study found that leverage was negatively related to profitability of listed banks but was statistically insignificant. Leverage was also negatively related to loan quality but statistically insignificant. Leverage showed positive correlation to the size and the age of the firm and was statistically significant, while leverage was positively correlated to growth but insignificant. The study recommends that management of the banks listed put in the necessary measures such as ensuring quality loans and using debt as financing strategies to enhance an increase in the growth levels of firms.

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Globally, firms listed on a stock exchange contribute significantly to countries' development through the provision of jobs, accessibility of investments, liquidity, stock trading, income stability and appreciation, poverty alleviation, economic growth and Gross Domestic Product (GDP). In Ghana, the stock exchange has over US$20billion market capitalization and this provides easy liquidity to investors (Ghana Stock Exchange 2020). Despite the significance, firms on the Ghana Stock Exchange have recently been faced with a number of constraints and key amongst them are access to financing and determining the appropriate capital structure.

In the quest to overcome the constraints, many firms rely on different internal sources of finance while participating less in using other external financing sources such as equity and debt due to its cost implications (Coles & Zhichuan 2018). This therefore poses challenges to understanding the pecking order theory in countries where firms have different internal source of financing. The pecking order model suggest that anytime businesses are faced with challenges of financing, they first access retained earnings from the business, followed by debt financing before seeking equity financing (Cheng & Cheng 2011; Chauhan 2016). This implies that companies comply to a structure of financing sources where it is appropriate and cost effective to use internal means of financing a project or a business activity.

When the internal means are exhausted, then the use of debts or borrowings should be the preferred choice and once the debt position is also exhausted then the use of equity must be applied. The pecking order theory was postulated by Stewart Myers and Nicolas Mailuf in 1984 to show that institutions rank their capital structure based on retained earnings, debt and equity

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(Brigham & Ehrhardt 2013). The use of the ranking means that profitable companies that make positive earnings use lower debt financing compared to businesses that are less profitable. For instance, researchers have showed an inverse association between profitability and debt to asset ratios (Ardalan 2017). Therefore, the pecking order theory offers the best explanation of the financing strategies or business policies.

Moreover, the internationalization of financing, easier access to funds and lower cost of borrowing offered by financial institutions to business owners have changed the contemporary rationale of owners of firms in going through the hierarchy of the pecking order in business financing (Bartholdy, Mateus & Olson 2015). Business owners in developing countries face challenges of choosing a financing mix forming an optimal capital structure. Although, debt and equity remain the two important types of liabilities that business owners use in financing certain parts of their businesses, each of these class of liabilities have different benefits, levels of risk, and control (Bhaird 2013).

Bhaird (2013) asserts that while holders of debt exercise less control, they earn risk free returns and are secured by the commitment of their investment. Equity holders on the other hand receive the residues of profits declared, bears most of the risk, and have greater control over decisions. Therefore, the choice of financing businesses has increasingly gained importance in the field of financial research. In recent finance literature has demonstrated the use of different means of financing strategies by companies to expand their firm. The banking sector is no exception as managers continue to employ varying financing strategies that best suit their operations at lower cost. This research examines the practice of the pecking order theory amongst listed financial institutions on the Ghana's Stock Exchange.

1.2   Statement of the Problem

The decision of selecting financing options by most organisations are dependent on the debt-to-equity ratios (Duc & Nguyen 2014). In this regard, a number of studies have demonstrated that organisations have a hierarchy of financing decisions. However, these hierarchy of financing structure have been found to be different across countries in developed and less developed countries. In Japan, companies rely more on debt financing (Chong, Law & Yao 2016) while United States of America (USA) and United Kingdom (UK) institutions rely more on equity financing (Cowling, Liu & Ledger 2012).

More so, studies conducted in developing countries have also produced different results from that of the developed countries with reasons been attributable to institutional and cultural differences (Ezirim, Ezirim & Momodu 2017; Hafizah 2015). Moreover, similar studies on understanding the practice of pecking order theory or capital structure in financing decisions of an organisations in developing countries have largely focused on small and medium enterprises with less emphasis on listed entities on the stock exchange.

Further, in Ghana, research works conducted on the financing practices of firms have also mainly focused on challenges in financing, sources and uses of funds used by businesses especially in the Small and Medium Enterprises sector (Kayo & Limura 2010; Manu 2015). Other studies on the financing structure done on listed entities on the GSE failed to investigate the outcome of firm characteristics on the capital structure (Salami & Iddrisu 2011). With the studies that examined the pecking order on the stock exchange, many were limited to a particular listed institution or specific industries listed on the exchange.

Also, prior research works have based their analysis on secondary data such as financial statements, annual reports and other sources of information. Results from these studies have been different with most of the research works conducted being focused on particular industries on the Ghana Stock Exchange while ignoring the study of all banks on the exchange (Salami & Iddrisu 2011; Amponsah 2011; Antwi, Mills & Zhao 2012; Akoto & Awunyo-Vitor 2013; Awuah-Agyeman 2015). As a result, this has presented gaps in examining the practice of the pecking order theory among banks on the bourse. In order to address the gap, the research was undertaken to examine the practice of the pecking order hypothesis of banks listed on Ghana Stock Exchange.

1.3   Objective of the Study

The research examined the practices of the pecking order theory of banks listed on the Ghana Stock Exchange. The specific objectives of the research were to:

1. Investigate the effect of profitability on leverage of listed banking firms on the Ghana Stock Exchange;

2. Measure the effect of loan quality on leverage of listed banking firms on the Ghana Stock Exchange;

3. Determine the effect of growth on leverage of listed banking firms on the Ghana Stock Exchange; and

4. Determine the effect of age on leverage of listed banking firms on the Ghana Stock Exchange

1.4   Research Questions

The research questions for the study are provided:

1. What is the effect of profitability on leverage of listed banking firms on the Ghana Stock Exchange?

2. What is the effect of loan quality on leverage of listed banking firms on the Ghana Stock Exchange?

3. What is the effect of growth on leverage of listed banking entities on the Ghana Stock Exchange?

4. What is the effect of age on leverage of listed banking institutions on the Ghana Stock Exchange?

1.5   Significance of the Study

The significance of this research helps to analyze the various capital structure of listed banks on the Ghana Stock Exchange. It also helps to provide a clear understanding on how banks' characteristics impact their capital structure. The pecking order emanates from three important sources of financing, that is internal funds, debt and equity. As listed banks on the Ghana Stock Exchange, it was relevant to understand and demonstrate the order in which the banks raise funds to finance capital. Hence, the research was significant in understanding the hierarchy of financing sources of listed banks since they have all three available options. The study is also significant as it adds to existing knowledge or works on the subject matter on the use of the pecking order theory in the banking industry due to the minimal literature that has been undertaken and also the failure of most of the literature to include all listed banks in a single study.

1.6   Scope of the Study

The study focuses on listed banks on the Ghana Stock Exchange. The study also focuses on the practice of the pecking order theory of listed banks. The study also focuses on banking firms that have been listed and presented audited financial reports since 2010 to 2019. The data for the research is focused on audited financial statements of the sampled firms from 2010 to 2019.

1.7   Summary of Methodology

The study uses the quantitative method of research. The population of the research included all listed banking firms on the Ghana Stock Exchange. The research used the census technique to select all eight banks listed on the exchange. Secondary data from the audited financial statements of listed banking firms from 2010 to 2019 are used to ascertain the pecking order theory. The research used the Augmented Dickey Fuller, Tolerance and Variance Inflation Factor as estimation techniques to ascertain the accuracy of results. The study employed panel regression test to also establish relationships among profitability, loan quality, growth, and age on leverage.

1.8   Limitations of the Study

The study was limited in scope as it did not analyze all firm specific characteristics of listed banks on the Ghana Stock Exchange. Data analysis was restricted to ten-year period. The structure of capital of institutions is clarified by different variables using the pecking order theory. However, the study was limited to using leverage as the dependent variable and profitability, loan quality, growth, size and age as independent variables.

1.9 Organisation of the Study

The rest of the study was organised into four chapters. Chapter two reviewed related literature on theories, concepts and empirical issues on the subject matter. Chapter three captured the methodology section of the study. This also discussed the procedures followed in conducting the research such as research design, population, sampling, method of data collection, and data analysis. Chapter four presented and discussed findings of the study and chapter five contained the summary of the findings, conclusions, and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

2.0   Introduction

This chapter of the research reviews related literature on theories, concepts and empirical evidences on the practice of the pecking order theory. The chapter is grouped into five (5) sections. The section 2.1 presents the conceptual literature on capital structure as explained by the financing mix of debt and equity, Section 2.2 presents the Modigliani-Miller and Pecking Order theories used for the study, which served as the foundational theories of the research. The Pecking Order Hypothesis and Modigliani and Miller theories as foundational theories were used in describing decisions of funding by listed entities, a brief overview of the Ghana Stock Exchange is presented after the theoretical review. The section 2.3 presents the empirical works on pecking order theory from developed, developing, African countries and Ghana. Firm characteristics and capital structure were also reviewed. The section 2.4 presents the conceptual framework for the study and how hypotheses were formulated for the study, and lastly section 2.5 as the concluding chapter summarises the reviews made.

2.1   Conceptual Review

The section of the study reviews the concept of the study. The essence was to help understand the meanings of the variables used.

2.1.1   Capital Structure

The concept of capital structure is explained as the financing mix of debt and equity operated by an entity or firm (Abdulla, Manan & Khadijah 2011). Capital structure has been grouped into four distinct features namely, capital, retained profits, loans or debt, and equity. Further, other researchers through their studies have also grouped capital structure into five parts such

as, equity, trade credit, personal debt, loans, and government loans (Ayed, & Zouari 2014; Chong, Law & Yao 2016). In the view of Ardalan (2017), capital structure is described as a mix of financing sources used by a firm to run its activities or projects.

Meanwhile, other researchers have also categorized financing sources into long-term finance (equity and debts such as personal loans from people, loans from banks, hire purchase and leasing) and short-term finance (overdrafts, and short-term bank loans) (Cowling, Liu & Ledger 2012; Daskalakis, Jarvis & Schizas 2013). In capital structure, the mix of financing have also been grouped into retained earnings, debt, and equity while other sources of financing to businesses have also been classified into personal savings, personal loans, business loans, and among others (Ardalan 2017).

Others have also established two main financing sources that is internal and external sources (Barros, Nakamura & Forte 2013). According to them, the internal sources of financing comprise retained earnings and personal finance (personal financial resources from the owner of a company i.e personal cash, loans, financing from family and friends, lottery winnings, inheritance and investment income). These sources of financing have been identified as the most preferred source of financing by firms across the world. Also, the external sources of finance include funds that are gotten from outside of the firm such as debts and equity. The debt component includes loans from banks, bank overdrafts, leasing, hire purchase, trade credits, foreign loans, and to mention a few.

Despite these sources of financing, Drobetz, Gounopoulos, Merikas and Schroder (2013) posit that the external sources are considered the most expensive source of financing which also require skill and competence before a person can engage in such contract of funding. As a result

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of this most firms do not consider or prefer this source of financing businesses. The most widely used external financing source employed by companies have been loans from banks. Duc and Nguyen (2014) identified that about seventy nine percent (79%) of firms in Vietnam finance business activities using bank loans followed by loans from leasing companies. It was also identified in that same study that only two percent (2%) of firms used venture capital funding.

2.2 Theoretical Review

The section presents the theories used for the study. Modigliani-Miller and Pecking Order theories were used as the foundational theories of the research.

2.2.1 Modigliani and Miller Theory of Capital Structure

The theory of capital structure as introduced by Modigliani and Miller in 1958 assumed the market will be more efficient if there are no taxes introduced (Morellec, Boris & Norman 2012). The theory assumes that firm value does not depends on the number of debts consumed by the firm. According to Jaros and Bartosova (2015) and Nenu et. al (2018), the theory is modelled on personal borrowing and arbitrage. The arbitrage position describes that two entities that are different in their structure of capital should have analogous performance whereas borrowing on personal account imply that a person can raise financing through equity that he or she hold in an institution that is levered. What happens is that the investor can sell the equity and then apply the profits in the unlevered firm, or increase proceeds without extra costs.

In order to account for taxation as was omitted in the theory earlier, Modigliani and Miller in 1963 then introduced corporate taxes into the existing model (Zhao & Wijewardana 2012). They found that if the underlying assumption remain flexible, capital structure will increase

the value of the firm. They therefore incorporated the tax shield benefits connected with the debt and stated that the financial worth of the firm depends on the amount of debts employed in the firm's capital structure. Further to the model, in the year 1977 Miller also then introduced personal taxes which had corporate taxes (Trinh, Makoto, Donghun & Tae 2017).

In the view of Miller, companies may remain to use debt till personal tax equate corporate tax rate. Vanacker and Manigart (2010) assert that firms adopt the use of internal sources of financing at the commencement of a business project. In 1980, De-Angelo and Masulis also brought in tax credits and accounting depreciation to the personal tax theory of Miller (Tran & Duc 2015). They said that non-debt tax shields will create a market equilibrium as firms without profit will not be able to benefit through tax advantage. Myers and Majluf in 1984 also elaborated on the theory used by Modigliani and Miller.

However, currently, Ebrahim and Mathur in 2007 addressed the gap of Modigliani and Miller's theory and disallowed the optimum pricing constraints of debts (Sheikh, Ahmed, Iqbal & Masood 2012). The understanding provided on the theory of capital structure lays the foundation to examine the pecking order theory which is a subsidiary of the capital structure theory of finance. Therefore, the pecking order theory is reviewed to help position theoretically the study.

2.2.2 Pecking Order Theory

Myers and Majluf (1984) describes pecking order as the inverse relationship between profitability and debt ratios. According to them, the pecking order theory commences with asymmetric information as managers of the organization know more about the prospects, and risks of the organization than the outside investors. Therefore, the asymmetric information

affects the choice between internal and external financing between debt issue or equity. The issue of debt over equity also signals the confidence of the board that an investment is profitable and that the current stock price is undervalued. The issue of equity also signals an over-valuation of stock price which eventually will lead to a drop in share price. For this reason, understanding the pecking order theory always commences by establishing an inverse relationship between profitability measures and debt ratios.

Many firms are opposed to the use of external sources of financing especially equity because they do not want to lose control over their firms which makes them go in for a financing option that will minimise any imposition into their business (Sharif, Naeem & Khan 2012; Oino & Ukaegbu 2015). Therefore, firms primarily adopt the pecking order theory due to their want of maintaining independence and control over their firm. For this purpose, the pecking order supports the research theoretically.

Donaldson in 1961 proposed the pecking order hypothesis, when he asserted that irrespective of a firm's size, managers finance investment by first using retained earnings rather than using external source of funding (Kannadhasan, Bhanu & Parikshit 2018). On the other hand, if a company was to utilise external sources of financing an investment, equity will be used as a last option. Myers improved the pecking order theory in 1977 when he developed a hierarchy describing the sources of financing that businesses use in funding a project or an activity (Hsu, Chiang & Liao 2013).

They describe that at any time possible, firms will finance their activities with shareholders earnings, and use debt financing as the last option when the retained earnings are insufficient. This is so because debt financing offers a tax shield and reduces income tax payment which

presents an opportunity and advantage by increasing profits compared to the use of equity financing. Therefore, equity financing is used as the lender of last resort employed by managers in business financing. In the year 1984, Myers and Majluf improved upon the theory and affirmed that firms who follow the hierarchy of financing maximises their value (Hoang, Chi & Duc 2019).

The theory then assumed no optimum debt-to-equity ratio and that companies employ the use of all available internal sources of financing before going in for the external source of finance. It was demonstrated in the work of Sheikh et. al (2012) who conducted a research using the non-financial sector in Pakistan found that firms prefer internal sources of financing business investment mainly because they want to evade diluting the control of their business. The reality is that some firms will tend to external sources of financing such as issuing equities even when they have not exhausted the internal sources. However, firms make different decisions of financing at every point in time and that the pecking order is not usually followed at all times by every entity (Tran & Duc 2015).

Vanacker and Manigart (2010) say that because managers want to continue to have control and dominance, they always prefer debt financing ahead of equity financing. However, such situations often occur in small and medium firms because equity financing is not common. In the study of Vijayakumar (2011), it was found that other managers do not understand how equity financing works and so because they want to save themselves stress and other cost, they prefer to use debt financing. Tongkong (2012) demonstrated in his study on Thai listed real estate companies that anytime firms used debt financing, banks were the first point of call. This is so because financing by banks through debt does not dilute the ownership and control structure of the firm.

A major issue of the pecking order theory is the relationship between the firm's ability to generate internal funds and investing in new projects or activities. The theory asserts that only companies that want to make gainful growth needs external financing especially when internal sources are inadequate. This position is confirmed by findings of Zeidan, Galil and Shapir (2018) who revealed that firms with lower levels of earnings will make use of external funds. Their findings demonstrate that there is high probability of smaller firms to incur debt than bigger ones when faced with expansionary or growth opportunities. Similarly, the likelihood of larger firms to employ equity financing is higher than borrowing when faced with investment opportunities. Some owners of firms will also not consider equity and under no conditions will they move down the pecking order.

Further, another difficulty with the pecking order theory is also the problem of information asymmetry (Salami & Iddrisu 2011). Myers and Majluf took into consideration the information asymmetry during the development of the theory. The theory supposed that problems of information asymmetry affect the structure of capital of companies. They argued that equities will be undervalued by the market since persons placed in management positions have access to additional data about the institution than the investors. On the debt side of it, businesses who also seek loans or debt financing may also be in the position to have more information about the business than the bank offering the loan. When one party has more information than the other, then there is the problem of information asymmetry. These challenges sometimes affect the capital structure of firms. There have been certain characteristics of firms that also usually impact on the capital structure of firms.

2.2.3 Ghana Stock Exchange

The Stock Exchange is where shares or equities are traded. The Ghana Stock Exchange was incorporated in the year 1989 but trading commenced active trading in the year 1990. The exchange allows for all types of securities to be listed such as debt and equities. Currently, the exchange has thirty-nine (39) traded stocks with the listing conditions being profitability, financial strength, management experience and efficiency, number of shareholders spread of shares, the firm years of presence (Ghana Stock Exchange 2020). The exchange currently has stocks listed from different industries such as manufacturing, pharmaceuticals, finance, insurance, banking, information technology, mining and many others.

The exchange has both Ghanaian firms and non-Ghanaian firms but many of the listed entities remain domestic companies. Trading of shares is opened to all residents and non-residents of Ghanaian origin. Prior to the enactment of the Foreign Exchange Act 2006 Act 723, a non-Ghanaian resident investor was only allowed to hold up to 10 percent of any listed equity. Foreign investors were also allowed to hold only up to cumulative shares of 74 percent. However, the current law abolishes all these restrictions.

The Ghana Stock Exchange also licenses entities who can only deal in trading. Some of these institutions include Gold Coast Brokerage, Databank Brokerage, National Trust Holding Company, FirstBanc Brokerage, IC Securities and many others. In the exchange has grown over the years recording increases in market capitalisations and increases in companies. The Ghana Stock Exchange was selected for this study because over the years a number of researches conducted on examining the pecking order and capital structure has been limited. This has created a number of gaps in literature on how companies listed on the exchange follow the pecking order theory.

2.3   Empirical Review

The empirical review of the study is presented under five sub-groups, thus practice of pecking order theory in; developed countries, developing countries, Africa and Ghana. Empirical review on firm characteristics and capital structure is presented as the last sub-group. The empirical studies are presented as follows:

2.3.1 Practice of Pecking Order Theory in Developed Countries

Chuan-Hao, Yi-Chein and Tung (2013) tested this capital structure model based on the view of Multinational Companies in America and Domestic Corporations in Taiwan. Data from United States of America firms was retrieved from Compustat database for the period 1991 to 2009. The study excluded financial firms and utility firms due to how their capital structure is being regulated. The study results showed that the financing behaviors of Americans firms are more reliable with the pecking order theory. Moreover, rather than domestic corporations, the pecking order principles applies to Multi-National Corporations (MNCs). The findings of curvilinear regression models also showed concave relationship for both multinational corporations and domestic companies between net debt problems and funding deficits, suggesting that companies first fund their deficits with loans and then issue equity when they exceed their debt potential.

In order to explain the funding activities of publicly traded companies in the European Union, Machielsen (2013) explores empirical suggestions for the presence of the pecking order principle. Multiple experiments were performed, including a test where a potential time delay was taken into account between the funding deficit and the issuance of the debt. In order to assess financing behaviour within the chosen data, the identified organisation were also split based on the business size and nationality. Before and after the financial crisis in Europe, the

pecking order hypothesis was also evaluated against a more conventional model of funding actions. The results showed inadequate evidence existed in support of the presence of the pecking order in companies' gradual funding activities. The study also showed no difference between companies with higher levels of total assets in pecking order behaviour. The results also revealed that there was no major improvement in funding before and after the 2009 economic crisis.

Adair and Adaskou (2015) discussed the assumptions about organisational leverage of trade off theory and pecking order theory. A linear model of data collected from 2,370 French SMEs for the period 2002 to 2010, the debt ratio was used as the dependent variable. Trade credit helps to give a warning to debtors who have no private company details and access to credit depends on agreements, in line with the trade-off principle. The link between corporate leverage and profitability of SMEs backs the pecking order theory.

Reniers (2017) conducted a study on testing the pecking order theory on 373 technology firms on publicly traded American technology firms of different sizes. Secondary data using annual financial statements of the firms was used between the period 2007 and 2017. Data was analysed using simple pooled ordinary Least Square Method, Fixed effects and random effects models and regression. The findings showed that debt issues were only 28 percent of total financing. This means that the study failed to attest the pecking order model.

The trade-off hypothesis and pecking order model under managerial overconfidence are also discussed by Bukalska (2019). Data from 145 private companies in Poland was obtained. By surveying the executives on overestimation, over placement and over optimism, the degree of overconfidence was differentiated. For the period 2010-2015, the financial data covered the

period. To determine the determinants of the capital structure, static ratios were computed. Debt ratios using the Fama and French deficit value methodology and the Shyam-Sunder and Myers funding sources were also used to describe the disparity between the target and the real debt ratios. The study found that businesses operated by highly confident executives tends to use higher equity valuation and show similar debt ratios. Reverse pecking order preferences, such as using internal funds and then shifting to bonds are also used.

2.3.2   Practice of Pecking Order Theory in Developing Countries

In a research by Murray and Vidhan (2002), the pecking order theory of capital structure of American public firms listed from 1971 to 1998 were tested. Net equity issues track the funding gap more closely than net debt problems, contrary to the pecking order theory. Although certain elements of the pecking order behaviour are demonstrated by large corporations, the indication is not strong for the inclusion of traditional leverage factors. In illustrating the total debt problems for all businesses over a period, funding the deficit is less relevant.

Ziad (2009) investigated the pecking order theory and trade-off theory with evidence from Jordanian firms. Data from 114 non-financial firms in Jordan was used out of which 62 were both from the service and industrial sector. The result of the study showed that equity problems are comparatively closer to monitoring the funding gap, indicating that equity is not the last funding option as expected by the pecking theory. Moreover, Jordanian companies are more susceptible to taking up surplus debt withdrawals than to expanding debt to fulfill their funding requirements, suggesting that leverage is influenced differently by the financial surplus and deficit.

The relationship between the pecking theory and the capital structure of companies in Taiwan was investigated by Li-Ju (2010). As the research model, hierarchical regression was used. The study analysed the elements of debt decisions for 305 electronic Taiwanese companies listed on the Taiwan Stock Exchange. The findings show that profitability and the rate of growth are the determinants of the capital structure. Profitability impacts the structure of capital adversely. It ensures that companies tend to use their income to fund business operations and therefore use less debt resources. The rate of growth also positively affects the structure of capital. Therefore, the greater the potential for growth, the more debt is used to fund growth.

Sheikh *et al* (2012), examined the pecking theory with evidence from listed non-financial sector companies in Pakistan. The study followed cross-sectional designs and used financial statements from 2001 to 2008 to analyse secondary data. In order to test data from various companies, statistical methods of panel data regression analysis were used. The estimated R^2, t-test and F-Stat showed that KSE companies preferred the option of using internal generated funds and debt for reinvestment, with a small amount of external funds. This then provides the pecking order with poor support.

In Brazil, Forte, Barros and Nakamura (2013) analysed the influencing factors of capital structure of Small and Medium Enterprises (SMEs) using the pecking order theory. The research used a database comprising over 19,000 Brazilian firms. Secondary data was employed using the financial statements of a thirteen (13) year period (1994-2006). The study made used of Generalized Method of Moments estimator (GMM) and analysed data using regression. The findings showed that profitability negatively affected leverage, while asset growth positively affected leverage. Further, their study found that the firm size was positively correlated to leverage; riskier Small and Medium Enterprises are less financially leveraged,

and the firm's age was negatively correlated to financial leverage. The findings further showed that the outcomes conform to the pecking order theory and found that Small and Medium Enterprises finance growth projects using liability after exhausting their internal sources of funding.

In Poland, Koralun-Bereźnicka (2013) assessed the correlation between asset structure and capital structure of selected nine European countries across industry and size. The association between the composition of assets and the ratios of capital structure was evaluated across nations, industries and company sizes to help assess the effect of country-specific factors and company size factors using data from 2000-2010. The secondary data from the BACH-ESD database released by the European Commission was used. The results showed that the firms size impacted lower on assets structure and capital structure. However, the significance of the relationship was influenced by the specificity of the country and industry.

In Greece, Vasiliou, Eriotis and Daskalakis (2014) tested the pecking order theory using both quantitative and qualitative methodology. The essence of different methodologies was to test the validity of the pecking order theory. Data from Greek firms was used to ascertain whether the institutions follow the pecking order theory. The first data used financial statements of Greek firms listed on the Athens Exchange and a primary data set of questionnaires and interview guide was also used. The study's results indicate that a negative relationship between leverage and profitability does not necessarily mean that the principle of pecking order theory holds. Therefore, to test the pecking order theory, analysis does not rely only on quantitative regression analysis.

Hafizah (2015) also conducted a study with pecking order theory as the underpinning theory on the determinants of capital structure in small and medium sized firms and its effect on firm performance in Malaysia. In the east coast area of Malaysia, the study used SMEs and employed both quantitative and qualitative approaches. The study performed 25 interviews with SME owner-managers and analysed data using thematic approach. Questionnaires from 384 companies were also used and a set of binomial logistic regression models were used to evaluate quantitative details. The findings showed that there was no association between the education of the owner and the knowledge of decisions on capital structure. Firm features, efficiency of management and environment have been found to contribute to all forms of capital structure. The research thus offers evidence to support the hypothesis of the pecking order, the principle of agency and the model of culture.

Hoang, Chi and Duc (2019) participated in an empirical evaluation of capital structure theories for Vietnamese listed companies in Vietnam. A study of 227 listed companies on the Ho Chi Minh City Stock Exchange over the period from 2008 to 2017 used the Generalised Method of Moment approach. The study's finding indicates that to assess their capital structure, the Vietnamese listed companies follow the trade-off principle. In contrast, no evidence was found to confirm that the pecking order theory explain the financing decisions of the Vietnamese listed firms. No data on the other hand, was found to confirm that the pecking order theory explains the financing decisions of the listed Vietnamese firms.

2.3.3 Practice of Pecking Order Theory in Africa

The pecking order theory of companies listed on the Nairobi Stock Exchange was investigated by Mbugwa (2010). The study used the explanatory study design and all companies listed on the Nairobi Stock Exchange comprising 55 entities were the population of the study. Using the

annual financial statements of the listed companies, secondary data was obtained. The study showed that the companies' decision on the capital structure affected its asset structure and company size. It also revealed that large businesses were heavily leveraged and used more debt, while small companies tended to borrow short-term rather than long-term debt. The results also showed that decisions on the capital structure affected the company's retained earnings, size, growth, turnover, asset structure and reserves. Nevertheless, the findings also showed that the companies listed on the Nairobi Stock Exchange prioritized internal financing capital and used lower levels of external financing.

In Tanzanian listed enterprises, Ntogwa (2012) analysed the practice of pecking order theory, agency and trade-off theory. The study used secondary data from eight of the 2006-2012 non-financial companies listed on the Dar Es Salaam Stock Exchange (DSE). To test the practicality of the theories in Tanzania, the analysis used the descriptive method. The relationship between financial leverage and the company's characteristics was evaluated using a multiple regression model. The study found that there was no clear support for the theory of static trade-off validity. The pecking order theory was however, little supported, but the cost theory of agency was verified to be true and practiced in Tanzania.

Matemilola, Bany-Araffin and Carl (2012) analysed trade-off theory and pecking order theory using panel, Generalised Method of Moment estimation techniques with evidence from South Africa. The study showed that the cashflow coefficient was statistically significant and negatively correlated to long term debt and total debt supporting the pecking order theory. The study found that the dependent variable was statistically significant in all models specified supporting the dynamic trade off theory that firms adjust to long-run optimal debt ratio. The

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Generalised Method of Moment results revealed that fixed assets and profit are determinants of capital structure.

Vusani (2013) also examined trade-off and pecking order theory with evidence from firms in South Africa. A sampling of 42 manufacturing, 24 mining and 21 retail companies listed on the Johanesburg Stock Exchange (JSE) for the period 2000-2010 was used in a cross-sectional design. In order to suit the two variants of the partial adjustment models, the analysis used the Generalised Least Square (GLS) random effects, maximum likelihood (ML) random effect and time series regression. The study showed that leverage is associated favourably with profitability and the trade-off hypothesis is reinforced by this. The negative association of non-debt tax shield is further reinforced by the trade-off hypothesis. Capital expenditure and growth were positively correlated to leverage, consistent with the pecking order theory, while asset tangibility was inversely related to leverage. Both the pecking order and trade-off hypothesis were reinforced by the negative correlation of financial distress and the positive correlation of dividends received. These findings are consistent with the view that in explaining the funding decisions of companies, the pecking order and trade-off hypothesis are non-mutually exclusive.

The asymmetric impact of funding deficits and surpluses on pecking order financing strategies in Sub-Saharan Africa are also discussed in Chimwemwe and Chera (2016). From 2006-2014, panel data estimation techniques were conducted on a sample of 564 non-financial companies. Equity tracks the funding deficits better than debt for companies with financing deficits, the individual country study revealed. The study's categorical analysis, however, indicates that businesses operating in the poorest legal environments appear to follow the funding strategies of the pecking order. A steady decrease in the magnitude of the pecking order coefficient from countries with poor legal systems has been observed.

Demis and Man (2018) uses categorical research to analyse the determinants of the capital structure of companies operating in 13 African countries with distinct financial, legal, institutional and economic environments. In explaining the financing decision of companies of African countries, a test on the pecking order and trade off theory was statistically relevant and the result supported both the pecking order and trade-off theory. The research also found that asset tangibility, financial distress expense, profitability and non-debt tax should be strong firm specific determinants of capital structure. Also, the study demonstrated that corporate tax rate, banking sector production, GDP growth rate, and lending rate were the most significant country specific determinants of capital structure.

2.3.4 Practice of Pecking Order Theory in Ghana

The determinants of the capital structure of Ghanaian listed companies, large unlisted firms and small and medium enterprises in Ghana were examined by Abor (2008). Among the three sample classes, the panel regression model was used. The findings showed that debt levels were substantially higher for listed and large unlisted companies than for small and medium enterprises. A major gap between the capital structures of publicly traded companies and large unlisted firms was not significant in the results. Furthermore, the study showed that short-term debt is a relatively high proportion of the overall debt of all the sample classes, and that the company's age, company size, asset structure, profitability, risk and management ownership affected Ghanaian companies' decision on the capital structure.

In Ghana, Attipoe, Boamah, France and Kpodo (2012) analysed the effects of debt and equity financing on the value of listed manufacturing firms using the pecking order theory. The study employed panel data and analysed secondary data using financial statements from 2005 to 2009 of 13 listed manufacturing firms using regression. The result indicated that generally debt have

a negative relationship with profitability while the size of firm and sales were positively related to profitability. Fumey (2013) also explored whether by examining the relationships between financial leverage, dividend payout ratio and corporate investment among listed companies in Ghana, the pecking order explains the dividend payout ratio in Ghana. Secondary data for the period 2004 to 2009 were collected from the financial statements of 33 out of 34 companies listed on the Ghana Stock Exchange. The research applied the Least Square technique in three stages to test the predictions in Ghana. The study showed that the relationship between financial leverage and the dividend payout ratio among the listed companies in Ghana is positive. It also showed that profitability has a negative impact on financial leverage, suggesting that Ghana's dividend payout ratio is explained by the pecking order principle, but the ratio is very low. The paper showed no correlation between corporate investment and financial leverage as well as corporate investment and dividend payout ratio among listed firms in Ghana.

Yussif (2013) examined how business ownership and board committee affects decisions on capital structure. Twenty-nine (29) firms out of thirty-four (34) listed firms were used for the periods 2004 to 2011. Data on the board committee and ownership structure were collected from the annual reports of companies and the Ghana Stock Exchange Facts Book. Information on governance standards was also collected from the Ghana Securities and Exchange Commission's annual reports and guidance. The fixed regression method was used to analyse the effects of board characteristics and the firm ownership on financial structure of the firms using unbalance data with a maximum and minimum duration of 8 and 3 years respectively. The result of the study showed a strong and significant relationship between size of the board, composition, institutional ownership and the form of company. No major relationships with financing decisions were shown by managerial ownership, development and firm size. The study also showed that companies on the Ghana Stock Exchange are following high debt

strategy, with higher percentage of foreign directors, a greater size of the board and a higher percentage of institutional shares.

The pecking order and signaling theories for financial institutions in Ghana were also examined by Akorsu (2014). Data from National Insurance Commission and the Bank of Ghana was used in the empirical study. In addition to the purposeful sampling methodology used to select 26 financial institutions, data from the eight-year period spanning 2005 to 2012 was used. The entities sampled consisted of 13 insurance companies and 13 banks. The findings suggest that financial institutions in Ghana have applied the pecking order and signaling theories substantially. This inference comes after the methodology of the panel data was used in the model estimation. The study therefore indicates that the pecking order principle should be complied with in as many financial institutions as possible.

A similar study was conducted by Awuah-Agyeman (2015) on evaluating the impact of capital structure on profitability of manufacturing industry in Ghana. An eight-year period secondary data of corporate financial statements from 2005 to 2012 was used. The study used fifteen (15) firms from the manufacturing sector, thirteen of which were listed and two were unlisted. For data analysis, the panel data regression approach was used, using both fixed and random effects. The research also employed correlation and regression for the analysis. The result showed that short-term debt and long-term debt were negatively linked to profitability. The impact of the long- term debt was not significant.

Between 2001 and 2005, Dacosta and Adusei (2016) also tested the pecking order theory of capital structure at FTSE 350 food manufacturing companies in the United Kingdom. The approach was retrospective, but a multiple case study design was used. This study adopted the

pecking order model as suggested by Shyam-Sunder and Myers, Frank and Goyal and Rajan and Zingales. To make an examination of the commonalities and differences found, the empirical study of firm-year data was compared to a generalised view of the literature. The results showed that although there is some sort of pecking order behaviour among FTSE 350 UK food producer companies, particularly when it comes to the preference of managers for the various sources of finance, the trade-off theory of capital structure best explains their financing behaviour.

2.3.5 Firm Characteristics and Capital Structure

Characteristics of firms or businesses have been identified to impact on the capital structure of financing decisions which tend to support the pecking order. Business characteristics such as age, size, asset structure and profitability are demonstrated to impact significantly on capital structure. A negative correlation between business size and debt was found by Manigart (2010). A positive correlation between leverage and firm's size was also shown by Vijayakumar (2011). The age of a company or company to date is the time of initiation of a company. When business commences as start-ups, the first thing they do is to raise funds internally before looking at external sources. This is so because at the earlier stages, it becomes difficult for smaller firms to get external financing.

An opposite relationship between age of firms and leverage was revealed in a study by Arabzadeh and Meghaminejad (2012) which found that new firms use leverage more than firms that are aged. The research found that two critical elements accounted for this; first, many banks failed to give out loans to aged firms because most had acquired more loans from other banks which had outstretched their loan balances. Second, many aged firms choose to use more equity than debt financing. Other studies have also found inverse relationships between age of firms

and debt financing (Ampenberger, Schmid, Achleitner & Kaserer, 2013). It has been demonstrated that as firms age, they tend to have more retained earnings and so consequently try to avoid debt on their balance sheet. This result agrees with the pecking order theory where corporate bodies use internal sources of financing over external financing methods.

On the contrary, studies conducted by Saarani and Shahadan (2013) on age of firms and capital structure revealed that as a firm age, they are able to build good financial records and reports that propels them to seek for debt and equity financing. Therefore, their study concluded that older firms enjoy easier debt financing compared to small firms. The research was corroborated by Abor and Biekpe (2016) who also demonstrated that smaller firms face challenges in external financing than older firms. In a similar study by Ardalan (2017), it was revealed that firms who reach a maturity stage employ external sources of financing than start-ups. However, a critical gap in these literatures are the specific ages that a firm needs to attain before determining which stage of growth the firm has attained.

There has also been disagreement on the relation between firm size and capital structure. A negative correlation between the size of companies and leverage is envisaged in the pecking order theory. It explains that small businesses face knowledge asymmetry problems that often hamper their ability to access external funding sources. More so, higher interest rate on debt makes smaller firms less likely to go in for external financing. Bhaird (2013) confirms empirically the negative linkage between leverage and size of firm. Firm size influences the capital structure in Brazilian enterprises (Barros, et. al. 2013). The sizes of firms are measured by total asset, turnover, and number of employees (Ampenberger, et al. 2013). It was therefore demonstrated that larger companies are more varied than smaller firms because they tend to suffer lower bankruptcy costs. As a result, they are able to take on more debts as they have

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easier access to the market. This was also corroborated by the work of Bartholdy, Mateus and Olson (2015) who found that as firms become large, external financing options become more attractive.

However, trade-off theory asserts a positive association between the size and the leverage of a firm (Razak & Mohd 2014). The theory describes that larger firms should use more debt financing than smaller ones. This is because large firms are more diversified, have good reputation, less volatile, more stable cash flows and lees likely to be liquidated which enables them to access external funds. On the contrary, the theory also posit that smaller firms borrow less because they are less risky and financial institutions usually do not want to extend credit to them. This is corroborated by the work of Zeidan, Galil and Shapir (2018) who also ascertained a positive linkage between size of firm and external financing.

2.4   Conceptual Framework and Hypothesis Formulation

The concepts used in the conceptual framework are first explained.

Leverage: It is explained as the total debt to total asset.

Profitability: Profitability is the ability of a bank to generate revenues capable of covering cost. It is the profit after tax to total asset.

Age: The age of firm is the explained by the period of establishment of the firm to date.

Growth: The growth of the banks is explained by the profit after tax.

Loans Quality: The loan quality is the loans impaired in a particular year to the loans and advances of the bank.

Size of firm: The size of firm is explained by the total assets of listed banking firms.

The conceptual framework of the study is presented in Figure 1.

Figure 2. 1: Conceptual framework of Study
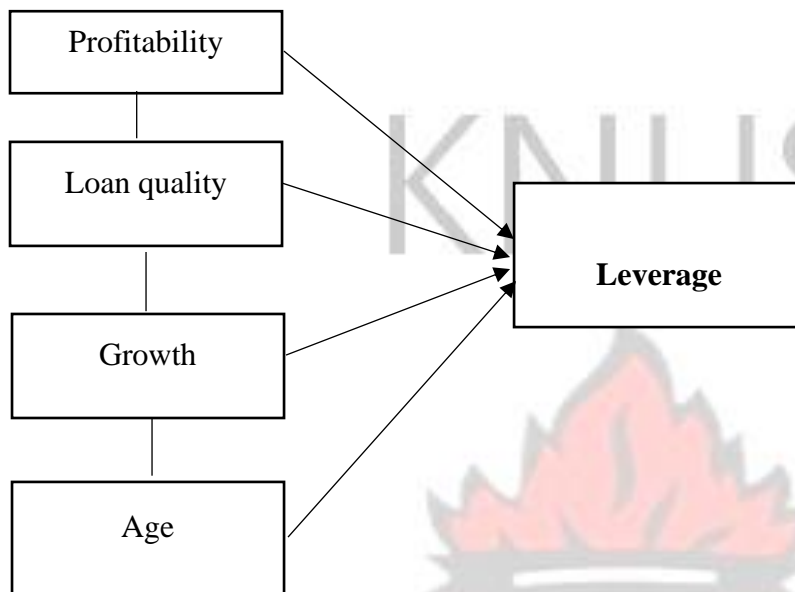
Source: Author's Construct (2020)

The framework presents that banks listed on the stock exchange of Ghana in their business financing decisions are influenced or affected by certain determinants such as profitability, loan quality, growth, and age of firm. Therefore, any decision made to go for any of the financing choices are influenced by these characteristics. The framework reinforces that the profitability of listed banks determines the usage of financial leverage. On the other hand, while growth of listed banks influences the use of leverage, age and loan quality of listed banks also impacts the use of debt by listed banks. The impacts of age, loan quality, profitability and growth on leverage helps to then determine the pecking order on the financing mix and choice of listed banks.

The hypotheses are formulated based on firm characteristics such as profitability, loan quality, growth, size and age. The characteristics are used as independent variables and leverage as dependent variable. First, profitability is identified as a factor of capital structure for funding a

business. Myers (1984) agreed a negative relationship between leverage and profitability. Second, the loan quality of firms explains the liquidity of banks which is a determinant of capital structure. A negative relation is also predicted between leverage and loan quality. Also, as firms grow and age, the need for funds to expand increases. Therefore, an organisation cannot entirely rely on internal funding. Myers (1984) describe that older firms and the ones with potentials to grow look to external sources of financing pushing firms into borrowing, hence a positive relationship exist. Firm size also plays determining role in determining the capital structure of firms. Therefore, the size of a firm is used as the moderator variable which interacts with the relation between dependent variables and independent variables in the empirical model. The hypotheses are therefore formulated below:

1. H_1: There is a relationship between leverage and profitability
2. H_1: There is a relationship between leverage and loan quality
3. H_1: There is a relationship between leverage and growth
4. H_1: There is a relationship between leverage and age
5. H_1: There is a relationship between leverage and size

2.5   Summary of Chapter

The chapter reviewed related literature on the practice of the pecking order theory from the perspective of developed and developing countries and was narrowed down to the case of Ghana. It was ascertained that firm characteristics such as loan quality, profitability, growth, size of firm and age have an effect on the capital structure of firms and was thus presented in the conceptual framework for the study.

CHAPTER THREE

METHODOLOGY

3.0   Introduction

This chapter presents the methodology for the research topic *"testing the pecking order theory of banks listed on the Ghana Stock Exchange"*. Following the introduction of the chapter, the study is categorised into six sections. First, the research design is presented under section 3.1, followed by the data and data sources used for the research under section 3.2. The section 3.3 presents the population and sampling techniques used for the study, the section 3.4 presents the model specification, diagnostic test afterwards and then section 3.5 explains the variables and how they are measured. The chapter is concluded with a summary on the method used for the research under section 3.6.

3.1   Research Design

Quantitative method was used for the study. Quantitative approaches are concerned with the use of numbers and drawing cause and effects relationships among variables. The paradigm associated with quantitative approach is positivism. Positivist believe that there is social truth out there, but with the use of empirical techniques, one can understand and gain knowledge of these facts or realities (Ofori & Dampson, 2011). This empiricism can be accomplished through the compilation of verifiable, testable and reliable empirical data by sensory experiences that endorse theories or hypothesis through the pursuit of deductive analysis approaches.

The research also used the explanatory research design. Explanatory designs seek to explain the forms in observed social phenomenon, behavior and social relationships (Creswell, 2014). Explanatory designs provide intellectual satisfaction and seeks the causes for the occurrence of an event. Explanations identify causes of events and factors that produce them. They also help

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researchers study a phenomenon from outside without subjective interpretations. The use of the explanatory design helped in explaining the pecking order theory.

3.2 Data and Data Sources

The research collected data using secondary means from annual audited financial statements of listed banking firms. Data was retrieved from the websites of listed banking institutions and the website of Ghana Stock Exchange. As a requirement to all listed firms, annual reports are to be published for shareholders and the general public. Secondary data was collected on financial institutions who had been listed from 2010 to 2019. Data retrieved from the audited financial report of the listed financial firms was cleaned, edited and inputted into Statistical Product for Social Sciences (SPSS) version 25. Descriptive statistics using univariate analysis was generated as output to describe the data. Inferential statistical tool such as correlation was used to ascertain the direction of the dependent and independent variables. Panel regression test was also used to establish the existence of the pecking order theory among listed banks on the Ghana Stock Exchange.

3.3 Sampling Population

The population involved all banking firms in Ghana listed on the Stock Exchange. The total number of listed banking firms stand at eight (8) comprising, Ecobank Ghana Ltd, Societe Generale, Standard Chartered Bank, Cal bank, Agricultural Development Bank, Access Bank, Republic Bank, and Ghana Commercial Bank. (Ghana Stock Exchange 2019). The probability method of sampling was also used as the method of sampling. The probability method ensured that every representative has a chance of selection equally. The probability method also ensures generalisation of a study. The census method was used as the sampling technique. This

technique captured all the sampled banking institutions in the data set. Published financial statements between the period 2010-2019 was used for the analysis.

3.4   Model Specification

The methodology assumes the homogeneity of the banks, and variability in data. The general model is given as:

$$Y_{it} = \beta_i + \sum_{a_{it}}^{n} \beta_1 X_{it} + \epsilon_{it}$$

Where Y_{it} = Leverage of listed banks

β_i = The intercept for each bank

X_{it} = Independent variables

ϵ_{it} = Error term

a_{it} = Represents the variables which vary across time and entity

Deducing from the above model, the research objectives was represented in equation form as.

$$\text{Lev}_{it} = w_i + \beta_1 \text{Prof.}_{it} + \beta_2 LQ_{it} + \beta_3 \text{Gwth}_t + \beta_4 Age_{it} + \beta_5 Size_{it} + \varepsilon_{it}$$

Where;

Y_{it} = Leverage

$\beta_{i,}$ $_i$= 1, ………..,5

w_i= intercept for each bank

ϵ_{it} = Error term

β = Coefficients

Prof.= Profitability

LQ = Loan quality

Gwth = Growth of firm

Age = Age of firm

Size = Size of Firm

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3.4.1 Diagnostic Test

Diagnostics tests was conducted on variables to test whether a regression model is correctly specified in terms of the regressors that are included. In order to ensure the validity and reliability of data, tests of normality and multicollinearity using the Augmented Dickey Fuller, Tolerance and Variance Inflation Factor test were undertaken. Durbin Watson was also performed to identify the presence of autocorrelation. In simple terms, all the assumptions of conducting parametric tests were adhered to in order to avoid spurious analysis.

3.5 Variable Description and Measurement

The description and measurement of the variables used in the study are as defined below.

Leverage: It is measured by total debt to total asset.

Profitability: It is measured by Profit after tax to total asset.

Age: The age of firm is measured by the period of establishment to the period of reporting, thus, 2019.

Growth: The growth of the banks is measured by the profit after tax.

Loans Quality: The loan quality is the loans impaired in a particular year to the loans and advances of the bank.

Size of firm: The size of firm is measured by the total assets of listed banking firms.

Table 3. 1: Variables and predicted relationship

Variables	Name of Variable	Measurement	Relationship
Profitability	ROA	Return on Asset	-
Loans quality	LOQ	Loans impaired	-
Size	SZ	Log Total Asset	-
Age	AG	Period Established	+
Growth	GWT	Log (Profit After Tax)	+

3.6   Chapter Summary

The methods used in carrying out the research were the subject of this portion of the study. It also referred to the ethical concerns and shortcomings found in the conduct of the research. More generally, the research approach centered on recognizing the practicalities involved in the scientific achievement of research findings. Results found from the field are discussed and examined in the next chapter.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0   Introduction

The chapter presents and discusses the research results to the topic "*testing the pecking order theory of banks listed on the Ghana Stock Exchange*. The chapter is grouped into seven (7) sections. The 4.1 presents the descriptive statistics of the research findings and presents preliminary results on data normality, and the presence of multicollinearity using Augmented Dickey Fuller, Tolerance and Variance Inflation Factor (VIF). The 4.2 section presents the results of the research on both correlation and regression. The entire result was presented together due to the nature of the model. Section 4.3 then discusses the results of the first research objective which sought to establish the effect of profitability on leverage. Section 4.4 also provided discussion on the effect of loan quality on leverage. Section 4.5 discussed the effect of growth on leverage while the 4.6 section ascertained the effect of age on leverage of listed banks. The last section 4.7 drew the summary chapter of the study.

4.1   Preliminary Analysis of Data

The preliminary analysis of data presents the descriptive statistics and tests on accuracy of results. The sample consisted of eight banks listed on the Ghana Stock Exchange. Financial statements of listed banks from the period 2010 to 2019 was used. The dependent variable was leverage while independent variables were profitability, loan quality, growth, firm size and age of firm. The descriptive statistics of the finding is presented in Table 1.

Table 4. 1: Descriptive Statistics

	Leverage	Profitability	Loan Q	Growth	Size	Age
Mean	0.844	0.030	0.035	110011.2	3412601	48.2
Std Dev.	0.043	0.020	0.030	114848.2	2793269.1	32.7
Min.	0.649	-0.037	0.000	-78975	280092.0	10
Max.	0.928	0.070	0.174	441947	13197574	123
Obs.	80	80	80	80	80	80

Source: Financial Statements of Listed Banks (2010-2019)

The findings in Table 1 indicate that the mean leverage of banks listed on the Ghana Stock Exchange is 84.4 percent. The least bank leveraged has 64.9 percent whereas the highest bank leveraged has 92.8 percent. This means that leverage of banks listed on the Ghana Stock Exchange is high indicating that the banks have high availability of funds in the market to finance the banks. The high leverage is also an indication that the Ghana Stock Exchange is less developed and as such many of the banks make use of more debt due to the lack of the developed nature of the equity market.

The findings on the profitability of listed banks showed a mean of 3 percent. This indicate that averagely, listed banks use their total asset to generate only 3 percent of profit after tax to cover all cost and expenses. The minimum profitability of listed banks was -3.7 percent which indicate losses while the maximum of 7 percent of profit was realized. The lower profitability index of banks listed on the Ghana Stock Exchange is also an indication that banks are unable to use their asset to generate more profits which implies a reduction and minimal contribution or transfer to retained earnings. Therefore, banks may find it difficult to have large funds from their retained earnings to finance their investment and may end up using external financing

mechanisms. The lower profitability indices therefore provide a support to the earlier findings of banks being highly leveraged.

Further, the results from the study on the quality of loans showed a mean of 3.5 percent. The finding is an indication that listed banks on the Ghana Stock Exchange have lower non-performing loans as only 3.5 percent of loans and advances become impaired. The minimum value of loan quality was 0 percent while the maximum loan quality was 17.4 percent. The loan quality of banks listed on the Ghana Stock Exchange posits that the lower non-performing loans rate of banks helps banks in making profit that can be used to finance investments.

The findings on the growth of listed banks showed that the banks made an average of GH¢110 million as profit after tax for the ten-year period. The minimum growth of GH¢-78million was recorded as well as a maximum growth of GH¢441million. The findings indicate that listed banks have seen positive growth in profits after tax over the period indicating the profitability of banks.

The firm size also showed that banks listed on the Ghana Stock Exchange have a mean size of GH¢3.4 billion. The listed banks also have a minimum size value of GH¢280million and a maximum of GH¢13.1 billion. The increase in bank size also positions listed banks to be able to use external financing mechanisms to expand investment projects. As firms become larger, they are unable to use only internal sources of financing to expand and may therefore require external sources. Larger firms also usually want to part away with some equity position in the firms compared to smaller firms who always want to maintain control. The pecking order theory asserts that larger firms are less susceptible to bankruptcy costs and as a result positions them to take on more debts at lower costs.

The age of banks listed on the Ghana Stock Exchange from the findings demonstrate a mean of 48.2 years. The minimum age of banks listed was 10 years while the maximum was 123 years. The findings also show that listed banks have been in existence for a longer period of time which positions listed banks to use external sources of financing at a lower cost for expansion projects or investments. This is so because as firms age, many people gain confidence and trust in the institutions and become willing to provide funding in different forms to the institutions.

The diagnostic tests were undertaken to ensure the data conformed to the parametric assumptions. The Augmented Dickey Fuller (ADF) test was performed to ensure the stationarity of data. The Tolerance, Variance Inflation Factor and correlation matrix were also undertaken to determine the presence of multicollinearity of data and Durbin Watson was done to determine the existence of autocorrelation. The results on ADF test, Tolerance, Variance Inflation Factor and Durbin Watson are presented in Table 2.
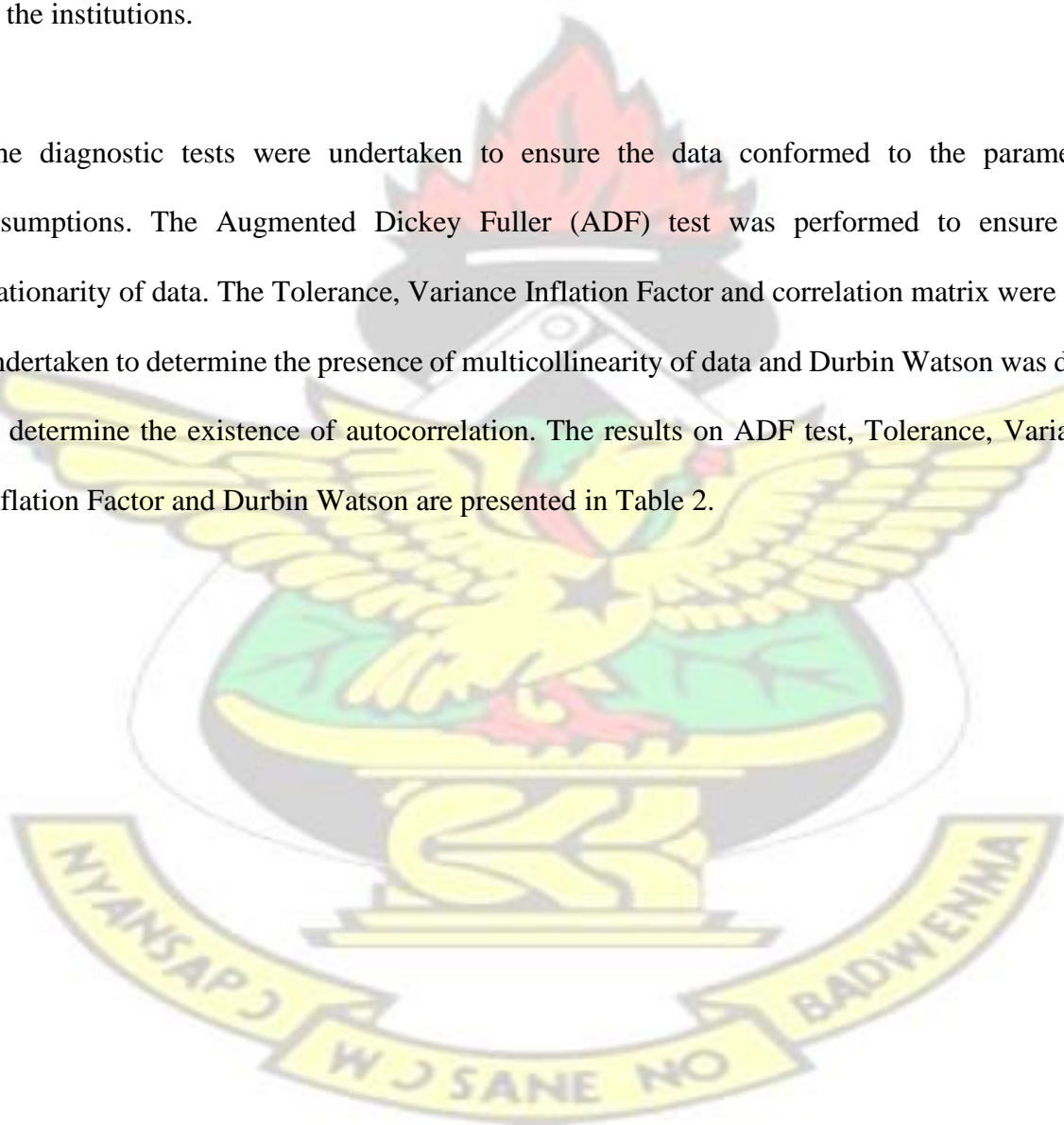
Table 4. 2: Preliminary Tests

p-value =0.065

DW = 1.903

Obs. = 80

Variables	ADF Statistics	5% Critical Values	Collinearity Statistics	
			Tolerance	VIF
Leverage	-5.1221	-2.998		
Loan quality	-5.4211	-2.998	.865	1.155
Profitability	-5.1642	-2.998	.704	1.420
Size	-5.2232	-2.998	.829	1.206
Growth	-5.4221	-2.998	.868	1.152
Age	-5.2224	-2.998	.823	1.215

Source: Author's Computation (2020)

The unit root analysis shows that the t-statistic is higher than the critical value at 5 percent and with p-value of 0.065. Where the t-statistic is greater than the critical value, it implies that the test result is stationary at first difference. Further, the collinearity statistics of VIF and Tolerance levels show no problem of multicollinearity as Ofori and Dampson (2011) suggests that tolerance levels of more than 0.2 indicate no problem of multicollinearity while a VIF of more than 1 indicate no multicollinearity. The Durbin Watson test of 1.903 also showed that there is no autocorrelation amongst the variables.

4.2 Presentation of Results

The section of the study tests the pecking order theory to ascertain whether banks listed on the Ghana Stock Exchange conform to the use of the theory. The relationships between leverage and profitability, loan quality, growth, size and age are examined. The correlation matrix is presented to determine the strength and direction of the relationship of each of the variables. The result of the correlation is presented in Table 4.3.

Table 4. 3: Correlations

		Leverage	Loans quality	Profitability	Lnx Size	LnX Growth	Lnx Age
Leverage	Pearson Correlation	1	-.019	-.123	.471**	.097	.355**
	Sig. (2-tailed)		.870	.278	.000	.404	.001
	N	80	80	80	80	76	80
Loans quality	Pearson Correlation	-.019	1	-.458**	.104	-.170	.010
	Sig. (2-tailed)	.870		.000	.361	.141	.927
	N	80	80	80	80	76	80
Profitability	Pearson Correlation	-.123	-.458**	1	.112	.345**	.167
	Sig. (2-tailed)	.278	.000		.324	.002	.138
	N	80	80	80	80	76	80
Lnx Size	Pearson Correlation	.471**	.104	.112	1	.162	.311**
	Sig. (2-tailed)	.000	.361	.324		.162	.005
	N	80	80	80	80	76	80
LnX Growth	Pearson Correlation	.097	-.170	.345**	.162	1	.133
	Sig. (2-tailed)	.404	.141	.002	.162		.251
	N	76	76	76	76	76	76
Lnx Age	Pearson Correlation	.355**	.010	.167	.311**	.133	1
	Sig. (2-tailed)	.001	.927	.138	.005	.251	
	N	80	80	80	80	76	80

**. Correlation is significant at the 0.05 level (2-tailed).

The presentation of the correlation results is followed by the regression. The analysis of the data also makes use of the panel regression model. The use of regression analysis helps to explain the behavior of one variable, thus, the dependent variable, using the predictive powers of independent variables or predictor variables. Leverage, the dependent variable is regressed on five predictor variables which is profitability, growth, size, age and loan quality in order to test for their significance. Firm size is used as the control variable with all the independent variables. The model presents the regression analysis of leverage on profitability, loan quality, growth, age, and size. The model also holds firm size as the proxy natural logarithm of total assets of banks listed on the Ghana Stock Exchange. The model summary is presented in Table 4.

Table 4. 4: Model Summary

Model	R	R square	Adjusted R-square	Std Error of the Estimate
1	.500[a]	.250	.240	.0374
2	.603[b]	.364	.319	.0354

   a. Predictors: (Constant), Lnx Size

   b. Predictors: (Constant), Lnx Size, Profitability, Loans quality, Lnx Age, Lnx Growth

The model summary explains the extent to which the model predicts the dependent variable, thus, leverage. Holding firm size constant, the value of 'R' which is the multiple Pearson's correlation coefficient is 0.500. The value of R^2 and adjusted R^2 informs us that profitability, loan quality, growth, and age of listed banks collectively explain about 25 percent (24% when adjusted for bias) of the variance in leverage. This imply that about 75 percent of the use of leverage by banks listed on the Ghana Stock Exchange is explained by other factors. On the other hand, if firm size is not held constant, the value of R^2 tells us that profitability, loan quality, growth, age and size of listed banks collectively explain about 36.4 percent (31.9% when adjusted for bias) of the variance in leverage. This means that about 63.6 percent of other

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predictor variables or factors of listed banks account for the variance in leverage. The Analysis of Variance (ANOVA) model is presented to explain how best our model predicts leverage. The ANOVA test is presented in Table 5.

Table 4. 5: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig
1	Regression	.035	1	.035	24.708	.000[b]
	Residual	.103	74	.001		
	Total	**.138**	**75**			
2	Regression	.050	5	.010	8.016	.000[c]
	Residual	.088	70	.001		
	Total	**.138**	**75**			

a. Dependent Variable: Leverage

b. Predictors: (Constant), Lnx Size

c. Predictors: (Constant), Lnx Size, Profitability, Loans quality, Lnx Age, Lnx Growth

The ANOVA table contains the details of further test undertaken to ascertain whether our model significantly predicts leverage than just doing a guess work using the mean. With an F-ratio of 24.708 when firm size is held constant, and a significance value of 0.000[b], it is explained that our data was highly unlikely to be obtained by chance. Also, an F-ratio of 8.016 and a significance value of 0.000[c] explains that if firm size is not held constant, our data is highly unlikely to be obtained by chance. The coefficients tables are therefore presented to determine the individual predictors in the regression equation to predict the use of leverage by the listed banks. The coefficient table is presented in Table 6.

Table 4. 6: Coefficients

Model		Unstandardized Coefficient		Standardized Coefficients		
		B	Std Error	Beta	t	Sig.
1	(Constant)	0.748	0.041		18.397	0.000
	Loans Qua.	-0.189	0.171	-0.123	-1.105	0.273
	Profitability	-0.511	0.329	-0.186	-1.552	0.125
	Lnx Growth	0.002	0.003	0.085	0.738	0.463
	Lnx Age	0.025	0.007	0.414	3.738	0.000
2	(Constant)	0.474	0.071		6.654	0.000
	Lnx Size	0.022	0.005	0.458	4.467	0.000
	Loan Qua.	-0.306	0.154	-0.200	-1.989	0.051
	Profitability	-0.558	0.293	-0.203	-1.905	0.061
	Lnx Growth	0.001	0.003	0.021	0.200	0.842
	Lnx Age	0.017	0.006	0.286	2.785	0.007

a. Dependent Variable: Leverage

b. Predictors: (Constant), Lnx Size

c. Predictors: (Constant), Lnx Size, Profitability, Loans quality, Lnx Age, Lnx Growth

4.3 Profitability and Leverage of Listed Banks

The findings from the correlation results between leverage and profitability show that a negative correlation (r = -0.123) exist between profitability and leverage. The negative correlation indicates that as leverage increases, the profitability of institutions falls. The findings from the regression model (Table 6) which presents the results before and after accounting for firm size as proxy can be observed that the firm specific variable of profitability in both model 1 and 2 respectively shows a negative relationship (b = -0.511; -0.558) with

leverage. The result from model 1 shows that a 1 percent increase in leverage will lead to a fall of about 51 percent of profitability of banks. The second model also indicate that a 1 percent increase in leverage will result in about 55.8 percent fall in profitability of banks. However, the negative relationship existing between profitability and leverage does not present a statistically significant relationship with p-values (p = 0.125; p = 0.061) greater than the significance level. This indicate that there is no overwhelming evidence that profitability of banks on the Ghana Stock Exchange is influenced by leverage.

The result of the findings is consistent with the pecking order theory as it describes that when firms become profitable, they use less debt due to the problem of asymmetric information. Profitable firms find it difficult to use equity financing since there is the fear of an undervaluing of their firm. Hence, profitable firms prefer to use internal means of financing to expand before considering external financing mechanisms. The result confirms the work of Forte, Barros and Nakamura (2013) who examined the practice the of pecking order theory in developing countries and concluded that a negative relation exist between profitability and leverage. The result of the study is also consistent with the work of Li-Ju (2010) who used the hierarchical regression analysis to establish a negative relationship between profitability and capital structure. The result is also in consonance with the work of Demis and Man (2018) who studied determinants of capital structure of firms operating in 13 African countries and found that profitability was a determinant which conformed to the pecking order theory.

4.4 Loan Quality and Leverage of Listed Banks

The findings from the correlation result on loan quality and leverage shows the existence of a negative relationship between leverage and loan quality (r = -0.019). The relationship shows that a fall in the quality of loans will increase the leverage of the banks. This implies that when

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loan quality falls, the debt position of the banks will worsen which is likely to result in distress on the banks. The findings from the regression model (Table 6) which presents the results before and after accounting for firm size as proxy also observes in both model 1 and 2 respectively that a negative relationship (b= -0.189; -0.306) exist between loan quality and leverage. The result from model 1 shows that a percentage fall in the quality of loans will lead to about 18.9 percent increase in leverage. The second model also demonstrate that a percentage decrease in loan quality will result in an increase of about 30.6 percent in leverage. However, the negative relationship existing between loan quality and leverage does not present a statistically significant relationship with p-values (p = 0.273; p = 0.051) greater than the significance level. This means that the decrease in the quality of loans of banks may not have a great impact on the leverage of the banks.

When a bank has a good loan quality, its non-performing loans become low. With a significant amount of profits of banks coming from loans and advances, quality loans make banks profitable which therefore makes them able to use internal means of financing for investment projects. The result from the findings on loan quality and leverage agrees with the pecking order theory which describes that when banks are able to improve upon the quality of their loans, they become profitable and are able to reduce their debt position. This helps the banks to be able to raise internal source of financing investment projects for expansionary purposes. The findings from the study agrees with the work of Ahmadi, Bajuri, Jahanzeb, Karami and Rehman (2013) who all showed a negative relationship between loan quality and leverage.

4.5 Growth and Leverage of Listed Banks

The findings from the correlation results between growth of banks and leverage shows a positive correlation (r = 0.097) between leverage and growth. The positive correlation shows

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that as banks grow and become larger, the level of leverage also increases. The findings from the regression model (Table 6) which presents the results before and after accounting for firm size as proxy can be observed that growth of banks in both model 1 and 2 respectively shows positive relationships ($b_1 = 0.002$; $b_2 = 0.001$) with leverage. The result from model 1 shows that a percentage increase in growth of banks will lead to an increase in the leverage of banks by about 0.2 percent whereas the second model also indicate that a percentage increase in bank growth will result in about 0.1 percent increase in leverage of banks. Despite the positive relationship existing between growth of banks and leverage, it is not statistically significant with p-values ($p_1 = 0.463$; $p_2 = 0.842$) greater than the significance level. This demonstrate that the growth of banks does not significantly impact an increase in leverage of banks.

The findings from the results presented shows that internal sources of financing for banks with high growth potentials are more likely to be insufficient towards their expansion projects or investments. As a result, additional capital may be required by such firms with higher growth potentials and this is more likely to exert pressure on retained earnings. Therefore, such firms end up engaging in borrowing to finance their growth. The finding therefore is consistent with the work of Ayed and Zouari (2014) who both showed that as firms grow and become large, they accumulate more debts because they are able to borrow at a lower rate of interest or the cost of borrowing becomes less than cost of equity. The result also agrees with the pecking order theory which provides a positive relationship between growth of firms and leverage. The finding is also in consonance with the work of Adair and Adaskou (2015) who examined the practice of the pecking order theory using 2,370 French firms over an eight-year period and confirmed that growth supported the pecking order theory.

The firm specific variable of size which is also the control variable showed a positive relationship (b= 0.022) with leverage. The relationship is statistically significant at ($p < 0.05$; $p = 0.000$). The positive relationship therefore fails to agree with the pecking order theory which posits that as firm size increase, they have less problem of asymmetric information and adverse selection cost when issuing equity. Therefore, as firms increase in size, they borrow less and use more equity. However, in the context of listed banks on the Ghana Stock Exchange, the situation is different as banks with larger sizes are found to borrow more. The finding agrees with the work of Attipoe, Boamah, France and Kpodo (2010) who studied the practice of the pecking order theory among listed manufacturing firms in Ghana and found a positive relationship between size and capital structure. However, the result of the study disagrees with the work of Mbugwa (2010) who studied the pecking order theory of companies listed on Nairobi Stock Exchange and found that larger firms were highly leveraged compared to smaller ones.

4.6 Age and Leverage of Listed Banks

The findings from the correlation result on age of banks and leverage shows the existence of a positive relationship between leverage and age ($r = 0.355$). The relationship shows that as banks increase in age, their leverage levels also increase, which is similar to growth of banks. The positive correlation demonstrates that older firms are able to take on larger debts due to the confidence they gain from the market. Hence, investors will be in a better position to lend monies to firms that are aged. The findings from the regression model (Table 6) which presents the results before and after accounting for firm size as proxy can be observed that age of banks in both model 1 and 2 respectively shows positive relationships ($b_1 = 0.025$; $b_2 = 0.017$) with leverage. The result from model 1 shows that a year increase in age of banks will result in an increase in leverage by about 2.5 percent whereas the second model indicate that a year increase

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in age of banks will lead to about 1.7 percent increase in leverage of banks. The positive relationship between age of banks and leverage is also statistically significant with p-values (P_1 = 0.000; P_2 = 0.007) less than the significance level. This shows that the age of banks does significantly impact the increase in leverage of banks.

This is so because as firms become older, they want to expand to capture a larger market share. As a result, older firms are more likely to use internal funds and may also require additional capital to finance their expansion. This tends to put strain on retained earnings and pushes older firms to use borrowing. Moreover, as firms become older in the market, other participants in the market gain their trust and may be willing to lend to such firms to undertake their expansion projects or investments. The increase in leverage with the increase in age also goes to reinforce the understanding that many aged institutions do not want to lose control over their business which motivates business owners to use leverage instead of equity as an external source of financing as demonstrated by Oino and Ukaegbu (2015).

The result therefore supports the pecking order theory as aged banks prefer to use internal sources and then move to using debt as the next external financing option for business expansion. The finding agrees with the work of Saarani and Shahadan (2013) who revealed a positive relationship between age of firms and capital structure demonstrating that as firms age, they are able to build good financial records and reports that propel them to seek for debt in financing projects. The study is also consistent with the work of Ardalan (2017) who described that as firms reach their maturity age, they employ debt as external sources of financing more compared to start-ups.

However, the result remains inconsistent with the work of Arabzadeh and Meghaminejad (2012) who showed an inverse relationship between age of firms and leverage. They argued that as firms age, they use more equity than debt financing because banks failed to give out loans to aged firms since they had already acquired more loans on their books which outstretched their loan balances. However, the disagreement with the findings also come from the facts that the firms from the Tehran Stock Exchange were not restricted to only banks but had other firms from other sectors compared to this study which is restricted to only banks which uses debt as a major investment instrument.

4.7 Chapter Summary

The entire chapter focused on the presentation and discussion of results. The chapter first presented the preliminary statistics to show the normality and multicollinearity of the data used for the analysis. Results from the findings were then presented followed by the discussions. The study discussed results on the effect of profitability, loan quality, growth, and age of firm on leverage. The next chapter of the study presents the summary, conclusion and recommendations of the research.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.0   Introduction

This chapter of the research presents the summary, conclusion and recommendations in relation to testing the pecking order theory of banks listed on the Ghana stock exchange. The chapter is categorised into three sections. The first section of the study Summaries the entire research. The second part of the chapter draw conclusion from the findings of the research based on the summary. The third section of this chapter provide recommendation and policy implications based on the conclusion and further areas of future research are also presented

5.1   Summary

The study examined the practice of the pecking order theory of banks listed on the Ghana Stock Exchange. The relationship between leverage and firm specific characteristics such as profitability, loan quality, growth, age and size of firms was ascertained. The research used quantitative approaches and employed the explanatory research designs. The study used secondary data of audited annual financial statements of banks listed on the Ghana Stock Exchange from the year 2010 to 2019. As at the end of the year 2019, eight (8) banks were listed consisting of Ecobank Ghana Ltd, Societe Generale, Standard Chartered Bank, Cal bank, Agricultural Development Bank, Access Bank, Republic Bank, and Ghana Commercial Bank. Data was presented using Statistical Package for Service Solution version 25. Panel regression analysis was conducted to establish the existence of the pecking order theory.

In examining the practice of the pecking order theory, leverage was used as the dependent variable while profitability, loan quality, growth of firm, size and age of firm were the independent variables. Leverage was measured by total debt to total asset. The independent

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variables such as profitability was measured by profit after tax to total asset; age of firm was measured by the period of establishment of banks up to the reporting date of 2019; growth was measured by profit after tax; loan quality was measured by loans impaired in a year to total loans and advances of the banks; and size was measured by the natural logarithm of total assets of listed banks and was held constant. The study found that leverage was negatively related to profitability of listed banks but was statistically insignificant. Leverage was also negatively related to loan quality but statistically insignificant. Leverage was positively related to size and age of the firm and was statistically significant while leverage was positively related to growth but insignificant.

5.2   Conclusion

The negative relationship between leverage and profitability and loan quality implies that banks prefer internal financing to external financing. The banks use internal financing to finance new investments. When the internal financing from retained earnings are insufficient, the banks issue debt before equity. The positive relationship between growth, age and leverage of banks also supports the pecking order theory. However, given the insignificant results, the evidence for the support of the pecking order theory for profitability, loans quality, and growth is not overwhelming. This means we cannot conclude based on the evidence that profitability, loans quality and growth of banks actually predicts the pecking order theory. Hence, even though, the relationship supports the pecking order theory, they fail to provide overwhelming evidence towards the prediction of the pecking order theory.

The profitability, quality of loan and growth of the banks do not necessarily mean that they follow the pecking order theory. By implication, a bank may be profitable, have quality loans or achieve a higher growth but may not practice the pecking order theory. On the other hand,

there is an overwhelming evidence that age of banks predicts the pecking order theory since the relationship is significant. Hence, there is an overwhelming evidence from listed banks that as they age, they use internal sources of financing, before the use of debt and equity. Therefore, older banks entirely practice the pecking order theory.

5.3 Recommendations and Policy Implications

Profitable banks listed on the Ghana Stock Exchange should ensure to make use of internal sources of financing their investment before other external means in order to avoid external cost on raising funds. It is also recommended that banks with quality loans should also take the opportunity to expand their loan portfolio in order to be profitable. Furthermore, larger banks should take advantage of the use of debt as a financing requirement since they have the collateral strength for lower cost of financing while also benefiting from tax deductibility and must therefore prefer external financing to internal means. Older banks should also employ the use of debt as a financing strategy and benefit from tax deductibility. Management of the banks should ensure to put in the necessary measures to enhance an increase in their growth levels in order to take advantage of adhering to the pecking order.

5.3.1   Suggestions for Further Research

The model explains 36.4 percent variability in leverage. This means that other factors help in explaining the capital structure decisions of listed banks. It is therefore important to consider other country and firm specific factors such as legal environment and stable economic conditions as influential factors explaining the use of leverage. Further studies should be conducted to ascertain the actual ages and sizes of firms needed in the practice of the pecking order theory. The period of data collection should be extended to fifteen to twenty-year period to ascertain the significance of the determining firm specific factors.

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Bank	Year	Leverage	Loans Quality	Profitability	Debt to equity	Retained earnings	Asset quality	Firm size	LnxSize	ROE	Growth	LnxGrowth	Age	LnxAge	Zleverage	Zloans	ZLnxGrowth	ZLnxAge
Access	12/31/2010	0.64899	0.08242	0.03005	1.84892	0.00925	0.02267	280092	12.54	0.08562	8418	9.04	10	2.3	-4.54233	1.54204	-1.57011	-1.95198
Access	12/31/2011	0.64978	0.01083	0.02999	1.85535	0.02132	0.00295	280724	12.55	0.08562	8418	9.04	10	2.3	-4.52396	-0.8074	-1.57011	-1.95198
Access	12/31/2012	0.7867	0.07859	0.04344	3.68832	0.01367	0.02705	797291	13.59	0.20364	34631	10.45	10	2.3	-1.34164	1.41656	-0.67606	-1.95198
Access	12/31/2013	0.78248	0.02412	0.04598	3.59724	0.0098	0.01055	991334	13.81	0.21136	45578	10.73	10	2.3	-1.43986	0.37131	-0.50243	-1.95198
Access	12/31/2014	0.83114	0.01864	0.04958	4.92192	0.02597	0.00925	1718712	14.36	0.29362	85218	11.35	10	2.3	-0.30898	0.55096	-0.10686	-1.95198
Access	12/31/2015	0.85194	0.01256	0.03317	5.75423	0.03887	0.00628	2424439	14.7	0.22401	80410	11.29	10	2.3	0.17466	0.75057	-0.14357	-1.95198
Access	12/31/2016	0.84007	0.04333	0.01565	5.25276	0.00489	0.02079	2679608	14.8	0.09785	41934	10.64	10	2.3	-0.10132	0.25912	-0.5551	-1.95198
Access	12/31/2017	0.8535	0.0465	0.00925	5.82593	0.01353	0.01276	3199566	14.98	0.06313	29592	10.3	10	2.3	0.2108	0.3634	-0.77545	-1.95198
Access	12/31/2018	0.82159	0.11344	0.01408	4.60506	-0.0112	0.02613	3540941	15.08	0.0789	49846	10.82	10	2.3	-0.53084	2.56009	-0.44585	-1.95198
Access	12/31/2019	0.8294	0.0205	0.03687	4.86178	0.0014	0.00563	4711698	15.37	0.2161	173704	12.07	10	2.3	-0.34924	0.49001	0.3433	-1.95198
Cal	12/31/2010	0.84689	0.05007	0.01763	5.53107	0.01088	0.02571	499751	13.12	0.11513	8810	9.08	29	3.37	0.05708	0.48033	-1.54134	-0.41613
Cal	12/31/2011	0.88179	0.02779	0.02333	7.45948	0.02069	0.01459	786063	13.57	0.19735	18338	9.82	29	3.37	0.86829	0.25083	-1.07794	-0.41613
Cal	12/31/2012	0.824	0.02336	0.04266	4.68184	0.03172	0.01506	1159345	13.96	0.24236	49452	10.81	29	3.37	-0.47481	0.39611	-0.45086	-0.41613
Cal	12/31/2013	0.81899	0.01785	0.05902	4.52446	0.03347	0.01124	1558962	14.26	0.32605	92010	11.43	29	3.37	-0.59133	0.57697	-0.05838	-0.41613
Cal	12/31/2014	0.8551	0.01531	0.05184	5.90136	0.04613	0.00756	2707542	14.81	0.35775	140352	11.85	29	3.37	0.24802	0.66049	0.20853	-0.41613
Cal	12/31/2015	0.84904	0.01975	0.04776	5.6244	0.06163	0.01065	3351039	15.02	0.31637	160042	11.98	29	3.37	0.10722	0.51457	0.29152	-0.41613
Cal	12/31/2016	0.86032	0.10132	0.002	6.15908	0.04027	0.05536	3599355	15.1	0.01433	7203	8.88	29	3.37	0.36925	2.16257	-1.66864	-0.41613
Cal	12/31/2017	0.84631	0.02964	0.03446	5.50674	0.06549	0.01304	4212638	15.25	0.22422	145166	11.89	29	3.37	0.04377	0.19002	0.22985	-0.41613
Cal	12/31/2018	0.85857	0.02749	0.03014	6.07043	0.01076	0.01234	5405856	15.5	0.21311	162940	12	29	3.37	0.32855	-0.2608	0.30286	-0.41613
Cal	12/31/2019	0.86351	0.02855	0.02476	6.32649	0.02483	0.01184	7039780	15.77	0.18138	174285	12.07	29	3.37	0.44343	0.22587	0.34541	-0.41613
ADB	12/31/2010	0.85759	0.01159	0.03302	6.02213	0.03167	0.00665	1005897	13.82	0.23187	33215	10.41	54	3.99	0.30594	-0.7826	-0.70245	0.48066
ADB	12/31/2011	0.8539	0.01121	0.03616	5.84451	0.00331	0.00631	1205757	14	0.24753	43606	10.68	54	3.99	0.22005	-0.79491	-0.53039	0.48066
ADB	12/31/2012	0.86346	0.03372	0.01848	6.32368	0.01214	0.01806	1444223	14.18	0.13538	26696	10.19	54	3.99	0.44221	0.05627	-0.84056	0.48066
ADB	12/31/2013	0.82673	0.02172	0.04972	4.77149	0.02772	0.01225	1621761	14.3	0.28694	80629	11.3	54	3.99	-0.41127	0.45002	-0.14185	0.48066
ADB	12/31/2014	0.84059	0.05256	0.02219	5.27297	0.02517	0.02739	2156740	14.58	0.13922	47865	10.78	54	3.99	-0.08934	0.562	-0.47148	0.48066
ADB	12/31/2015	0.84402	0.10097	-0.03701	5.41091	0.01658	0.05148	2134147	14.57	-0.23724	-78975		54	3.99	-0.00962	2.15081		0.48066
ADB	12/31/2016	0.85018	0.10347	-0.02307	5.67467	0.06219	0.03427	3035493	14.93	-0.15398	-70026		54	3.99	0.13364	2.23311		0.48066

Bank	Date																	
ADB	12/31/2017	0.86488	0.04373	0.00748	6.40093	0.05343	-0.01405	3545143	15.08	0.05534	26510	10.19	54	3.99	0.47534	0.27231	-0.84498	0.48066
ADB	12/31/2018	0.82217	0.00953	0.00164	4.62347	0.08175	-0.00283	3597395	15.1	0.00924	5908	8.68	54	3.99	-0.51727	0.85007	-1.79392	0.48066
ADB	12/31/2019	0.82668	0.01063	0.00324	4.76979	0.06321	0.00341	4577659	15.34	0.01868	14823	9.6	54	3.99	-0.41245	0.81395	-1.21245	0.48066
GCB	12/31/2010	0.91313	0.07126	0.02303	10.51108	0.0067	0.03403	2084656	14.55	0.26506	48002	10.78	66	4.19	1.59663	1.17593	-0.46967	0.77013
GCB	12/31/2011	0.92764	0.02236	0.00677	12.82056	0.01085	0.00432	2463377	14.72	0.0936	16683	9.72	66	4.19	1.93403	0.42889	-1.13773	0.77013
GCB	12/31/2012	0.90493	0.01248	0.04665	9.51884	0.03419	0.00356	2972068	14.9	0.4907	138645	11.84	66	4.19	1.40618	0.75315	-0.2008	0.77013
GCB	12/31/2013	0.86814	0.011	0.06591	6.58371	0.05818	0.00312	3391100	15.04	0.49984	223508	12.32	66	4.19	0.55102	0.80182	0.50265	0.77013
GCB	12/31/2014	0.8441	0.01921	0.0638	5.41437	0.08957	0.00563	4232819	15.26	0.40924	270057	12.51	66	4.19	-0.00766	0.53239	0.62224	0.77013
GCB	12/31/2015	0.82361	0.06264	0.05286	4.66923	0.10925	0.02019	4629588	15.35	0.29969	244735	12.41	66	4.19	-0.48391	0.89283	0.56	0.77013
GCB	12/31/2016	0.8322	0.01878	0.04943	4.95954	0.11578	0.00439	6049604	15.62	0.29456	299007	12.61	66	4.19	-0.2842	0.54663	-0.68661	0.77013
GCB	12/31/2017	0.88354	0.02377	0.02225	7.58658	0.08257	0.00522	9558151	16.07	0.19109	212715	12.27	66	4.19	0.90896	-0.3827	0.47137	0.77013
GCB	12/31/2018	0.87537	0.02144	0.03038	7.02393	0.04707	0.00564	10635051	16.18	0.2438	323132	12.69	66	4.19	0.71916	0.45922	-0.73566	0.77013
GCB	12/31/2019	0.86695	0.02105	0.03391	6.51594	0.05935	0.00608	12416741	16.33	0.25484	421003	12.95	66	4.19	0.52339	0.47201	0.9029	0.77013
SG	12/31/2010	0.83053	0.0218	0.02824	4.90061	0.02523	0.00949	685913	13.44	0.16663	19370	9.87	44	3.78	-0.32315	0.44749	-1.04333	0.18524
SG	12/31/2011	0.82086	0.00264	0.02719	4.58211	0.02139	0.00108	841077	13.64	0.1518	22872	10.04	44	3.78	-0.54789	1.07639	-0.93828	0.18524
SG	12/31/2012	0.84405	0.01028	0.02779	5.41245	0.01744	0.00491	1088927	13.9	0.17823	30266	10.32	44	3.78	-0.00875	0.82553	-0.76122	0.18524
SG	12/31/2013	0.84135	0.02272	0.02989	5.30337	0.02957	0.01383	1216553	14.01	0.18842	36364	10.5	44	3.78	-0.07147	0.41705	-0.64519	0.18524
SG	12/31/2014	0.86755	0.04374	0.02972	6.54989	0.03004	0.02305	1675949	14.33	0.22439	49812	10.82	44	3.78	0.5373	0.27272	-0.44628	0.18524
SG	12/31/2015	0.86819	0.0416	0.02227	6.58671	0.02522	0.01893	2002742	14.51	0.16897	44605	10.71	44	3.78	0.55224	0.20227	-0.51607	0.18524
SG	12/31/2016	0.8642	0.04193	0.02609	6.36369	0.0321	0.01614	2448836	14.71	0.19215	63900	11.07	44	3.78	0.45946	0.21335	-0.28884	0.18524
SG	12/31/2017	0.81401	0.02768	0.03244	4.37675	0.05118	0.01399	2789742	14.84	0.17444	90508	11.41	44	3.78	-0.70691	0.25439	-0.06879	0.18524
SG	12/31/2018	0.79548	0.03476	0.01806	3.88947	0.00882	0.01687	3431356	15.05	0.08831	61972	11.03	44	3.78	-1.1377	0.02198	-0.30821	0.18524
SG	12/31/2019	0.81954	0.02078	0.02893	4.5413	0.01489	0.01236	4443909	15.31	0.16028	128542	11.76	44	3.78	-0.57855	0.48097	0.15297	0.18524
SCB	12/31/2010	0.8825	0.02906	0.04329	7.51043	0.01922	0.00814	1667882	14.33	0.36844	72208	11.19	123	4.81	0.88474	0.20909	-0.21158	1.66813
SCB	12/31/2011	0.882	0.0165	0.03941	7.47492	0.03377	0.005	1971062	14.49	0.33398	77676	11.26	123	4.81	0.8733	0.62129	-0.16543	1.66813
SCB	12/31/2012	0.86977	0.007	0.05701	6.67847	0.02614	0.00281	2390684	14.69	0.43773	136288	11.82	123	4.81	0.58885	0.93304	0.18996	1.66813
SCB	12/31/2013	0.83704	0.01542	0.06961	5.13646	0.0595	0.00583	2988358	14.91	0.42716	208019	12.25	123	4.81	-0.17176	0.65678	0.45725	1.66813
SCB	12/31/2014	0.84915	0.03842	0.0594	5.62908	0.04287	0.01401	3506297	15.07	0.39376	208271	12.25	123	4.81	0.10969	0.09822	0.45802	1.66813
SCB	12/31/2015	0.83525	0.17449	0.01963	5.06998	0.04513	0.06315	3369448	15.03	0.11916	66148	11.1	123	4.81	-0.21324	4.5638	-0.26698	1.66813
SCB	12/31/2016	0.82504	0.06424	0.05133	4.71546	0.05319	0.01855	4373564	15.29	0.2934	224511	12.32	123	4.81	-0.45074	0.94538	0.50548	1.66813
SCB	12/31/2017	0.80725	0.00686	0.05937	4.18811	0.05262	0.00199	4776984	15.38	0.30801	283598	12.56	123	4.81	-0.86408	0.93761	0.65317	1.66813

Bank	Date																	
SCB	12/31/2018	0.82424	0.07738	0.03534	4.68943	0.03862	0.0169	5961495	15.6	0.20104	210654	12.26	123	4.81	-0.46935	1.37677	0.46521	1.66813
SCB	12/31/2019	0.84684	0.0564	0.037	5.52917	0.04161	0.01311	7618622	15.85	0.24155	281856	12.55	123	4.81	0.05604	0.68821	0.64927	1.66813
REPUBLIC	12/31/2010	0.80694	0.01077	0.02103	4.17962	0.00986	0.00537	361411	12.8	0.10891	7599	15.84	29	3.37	-0.87142	0.80932	2.73173	-0.41613
REPUBLIC	12/31/2011	0.82825	0.01002	0.02295	4.82258	0.02144	0.00489	430925	12.97	0.13364	9890	16.11	29	3.37	-0.37593	0.83388	2.89829	-0.41613
REPUBLIC	12/31/2012	0.78333	0.01657	0.02216	3.61532	0.00182	0.00947	587787	13.28	0.10228	13025	16.38	29	3.37	-1.42005	0.61891	3.07234	-0.41613
REPUBLIC	12/31/2013	0.83177	0.01973	0.03734	4.9444	0.01222	0.01046	973066	13.79	0.22199	36339	17.41	29	3.37	-0.29413	0.51529	3.72089	-0.41613
REPUBLIC	12/31/2014	0.82175	0.02145	0.04097	4.60999	0.01524	0.01077	1324350	14.1	0.22987	54265	10.9	29	3.37	-0.5272	0.45887	-0.39215	-0.41613
REPUBLIC	12/31/2015	0.88524	0.09214	-0.02505	7.71419	-0.0086	0.05439	1566419	14.26	-0.2183	-39241		29	3.37	0.9486	1.86107		-0.41613
REPUBLIC	12/31/2016	0.92396	0.07585	-0.0208	12.15044	0.02569	0.03759	1856171	14.43	0.27351	-38606		29	3.37	1.84834	1.32657		-0.41613
REPUBLIC	12/31/2017	0.89121	0.00003	0.01776	8.19161	0.01563	0.00001	2079096	14.55	0.16324	36923	10.52	29	3.37	1.08713	1.16203	-0.63555	-0.41613
REPUBLIC	12/31/2018	0.82585	0.03632	0.0131	4.74229	-0.02278	0.01493	2857988	14.87	-0.07522	37440	10.53	29	3.37	-0.43175	0.02919	-0.62676	-0.41613
REPUBLIC	12/31/2019	0.83266	0.02267	0.01881	4.97589	-0.01126	0.00962	3326242	15.02	-0.11239	62557	11.04	29	3.37	-0.27353	0.41874	-0.30227	-0.41613
ECOBANK	12/31/2010	0.85035	0.01162	0.03952	5.68243	0.0477	0.00379	1521229	14.24	0.26408	60117	11	31	3.43	0.13768	0.78164	-0.32742	-0.31993
ECOBANK	12/31/2011	0.87684	0.00726	0.03395	7.11954	0.04131	0.00289	2132183	14.57	0.27563	72381	11.19	31	3.43	0.75327	0.92473	-0.21006	-0.31993
ECOBANK	12/31/2012	0.86488	0.01815	0.04237	6.40087	0.02529	0.00749	3378843	15.03	0.31359	143169	11.87	31	3.43	0.47531	0.56728	0.22109	-0.31993
ECOBANK	12/31/2013	0.87953	0.02606	0.04019	7.30076	0.02766	0.01197	4624405	15.35	0.33362	185862	12.13	31	3.43	0.81576	0.30752	0.38606	-0.31993
ECOBANK	12/31/2014	0.86174	0.01179	0.05461	6.23286	0.04392	0.00563	5669630	15.55	0.39498	309613	12.64	31	3.43	0.40236	0.77594	0.70864	-0.31993
ECOBANK	12/31/2015	0.86626	0.03714	0.04972	6.47705	0.04004	0.01757	6587487	15.7	0.37175	327523	12.7	31	3.43	0.50731	0.05602	0.74419	-0.31993
ECOBANK	12/31/2016	0.88135	0.05131	0.04057	7.42832	0.03241	0.02225	8025510	15.9	0.34194	325594	12.69	31	3.43	0.85814	0.52099	0.74046	-0.31993
ECOBANK	12/31/2017	0.88715	0.06476	0.02807	7.86123	0.02185	0.01912	9098692	16.02	0.24872	255384	12.45	31	3.43	0.99286	0.96265	0.58693	-0.31993
ECOBANK	12/31/2018	0.87437	0.03141	0.03228	6.95972	0.0181	0.01238	10457596	16.16	0.25695	337590	12.73	31	3.43	0.6958	0.13208	0.76333	-0.31993
ECOBANK	12/31/2019	0.8662	0.04061	0.03349	6.47359	0.05561	0.01637	13197574	16.4	0.25027	441947	13	31	3.43	0.50587	0.17009	0.93359	-0.31993