KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF BUSINESS

DEPARTMENT OF ACCOUNTING AND FINANCE

THE IMPACT OF CAPITAL STRUCTURE ON FINANCIAL PERFORMANCE OF INSURANCE COMPANIES: EMPIRICAL EVIDENCE FROM INSURANCE COMPANIES IN GHANA

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A THESIS SUBMITTED TO THE DEPARTMENT OF ACCOUNTING AND FINANCE, KWAME NKRUMAH UNIVERSITY OF SCIENCE AND TECHNOLOGY IN PARTIAL FULFILLMENT OF THE REQUIREMENT FOR THE DEGREE OF MSC. ACCOUNTING AND FINANCE

November, 2020

DECLARATION

I hereby declare that this submission is my work towards the award of the MSc. Degree and that, to the best of my knowledge, it contains no material previously published by another person nor material which had been accepted for the award of any other degree of the university, except where due acknowledgment had been made in the text.

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ABSTRACT

The purpose of this study was to investigate the firm's capital structure decision and its impact on the profitability. A panel-data covering 2014 to 2018 audited financial statements of Insurances Companies under National Insurance Commission was used in the study. A sample of 24 insurance companies was used due to availability of financial statements for the period selected. The study revealed that, there was statistically significant negative relationship between capital structure and firms' profitability. It was also evidenced that Return on equity, growth and assets quality are the key determinants of capital structure. Achieving an optimal capital structure was very challenging for the companies due to the dynamic nature of the determinants. The study, therefore, recommends that, the corporate leaders should always monitor the business environment. This would help them to understand the dynamics of debt and equity instruments, thereby choosing the right capital structure. When a firm plans to increase its return on equity, it should reduce its debt source of finance

ACKNOWLEDGEMENT

I am highly indebted to the Almighty Allah for his mercy and grace for the entire period of study and making this thesis a success. I am thankful to my Supervisor, Mr. Alexander Agambila Awuni, for his efforts and selfless contributions for making this thesis a reality. His expert comments, patience, constructive criticisms, and suggestions were spectacularly significant in improving the output of the work.

I express my profound gratitude to all the lecturers and staff from the KNUST School of Business, who sacrificed in diverse ways to ensure that I get the right kind of knowledge and guidance to the success of the work. Their rich knowledge has shaped me to impact positively to society.

I also express my gratitude to my family especially my lovely brothers, Mr. Abudu Dauda, Abdulai Habib, Dr Musah Amadu Abudu and also to Mr. Ibrahim Sulemana for their support during the course of this work. My appreciation further goes to all friends who assisted me through encouragement and prayers and to all others whose names cannot be readily mentioned, I am equally grateful to them.

DEDICATION

This piece of work is dedicated to my daughter, Luqman Sumaya. The work is also dedicated to my dear wife for her unrelenting support and prayer towards a successful completion of this work.

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CHAPTER ONE

INTRODUCTION

1.1. Background of the Study

A firm's capital structure is described as a composition of debt and equity financing of a business activities. The capital structure creates a financing decision and it is the responsibility of corporate leaders to understand what option is the best for their corporate objectives. This decision has to do with either to choose external or internal sources of finance. The external comprises long term debt instruments, trade credit, and bank overdraft. The external source comes with an interest payment. The holders of this source are given preferential treatment. On the other hand, internal sources include issuing new shares (ordinary and preference) and surplus. The holders of this source are rewarded after external source holders are satisfied. Based on this, they have a residual interest. As pointed out by Ong and Teh, (2011) that capital structure of a company comprises debt (long and short) and shares (ordinary and preference shares).

The theory of capital structure proposes that the option between debt and shares at any time has significant implications for various managerial actions especially those concerning future, liquidity, long term solvency & profitability. It is common knowledge that no business can survive without investment in non-current assets and working capital. These investments require the right financing option to achieve the objectives of the business. Any decision on the capital structure will affect the profitability and growth of the business and therefore, the decision-makers must critically evaluate these options to determine the appropriate capital structure.

The relationship between capital structure and company performance has remained a topical issue in the relevant literature. There had been different opinions on this

relationship. In a perfect capital market condition with the assumptions of the absence of insolvent cost, capital markets are frictionless and no levies, the firms value do not depend on the verdict of capital structure of the business (Miller & Modigliani, 1958). The cost of debt is part of the operating expenses of business such that debt can reduce the tax to be paid (that is if businesses want to avoid paying more tax), then the debt becomes the best capital. To better appreciate the capital structure, quite a lot of theories have explained the capital of a company. These theories include Peck Order, Static Trade-off, and Agency Cost.

In any competitive environment, the source of capital a business chooses would determine its position in the market. Therefore, the firm has to use the right mixture of debt and equity that will maximize its profit and create value. Based on financing, the amount of debt the firms need is influenced by many factors.

The level of risk a business faces can influence its capital structure decision. As suggested by the trade-off model, the companies with the highest business risks have to use a smaller amount of debt than the minor risk firms. This is because, if the risk level of the business is too high, it is an indication that the business in financial difficulties which would render it incapable of meeting its financial obligations. Conversely, companies with quality assets would have the capability to use more debt to finance its operations. This implies that businesses with quality assets should use debt. The basis for this argument is that quality assets can be used as collateral. In a country where the tax rate is high posing a tax payment burden to a business, it is suggested businesses should use more debt (Brigham, Gapenski & Ehrhardt, 1999). The theory of the Pecking Order which was proposed by Myers (1977) ranks the financing decision between the internal and external sources. It theorized that a firm should initially consider the internal sources of finance since it is cheap to raise before resorting to

external sources. This means that if internal sources can finance its operations, there is no need to go for an external source unless it is for a strategic reason. Agency cost theory focuses on how a firm could attain a finest capital structure. It suggested that for a firm to achieve a best capital structure, the costs of resulting conflict between the managers and the owners should be reduced. According to Jensen and Meckling (1976), the gearing level of an organization can be used to monitor the bosses to achieve the entire objectives of the firm. If the firm can reduce is gearing level, the operating expenses would also reduce thereby increasing the efficiency and profitability of the firm (Buferna, Bangassa, & Hodgkinson, 2005).

The consequences of capital structure on performance have received considerable attention in recent times. Nevertheless, researchers failed to agree on the exact impact. While some concluded on a negative relationship, others established a negative relationship. To this end, there is no specific conclusion that can be generalized and for that matter, there is the need to engage in new research to study and comprehend the dynamic nature of capital structure and its consequence on profitability. It appears that corporate managers in developing countries like Ghana do not give much attention to capital structure decisions. This could be attributed to financing constraints because of the volatility in the financial markets. The bond markets in these countries are not developed coupled with an ineffective system of bank lending. The developing countries have to appreciate the importance of financial institutions and their roles in providing funds to corporate organizations. It is very critical for corporate managers to examine capital structure decision in their institutions in relation to their corporate objectives. This would enable them to established the right capital structure that would make them maximize shareholders' value. Corporate managers can better improve the fortunes of their business if they consider some significant variables that affect their

capital structure decisions. To this end, the drive of this study remains to determine the impact of capital structure on financial performance of Insurance companies and to understand how capital structure could be used to improve the financial performance of insurance companies.

1.2. Problem Statement

Financial Managers are faced with three main decisions namely financing, investment, and dividend decisions. The capital structure falls under the financing decision of business. The kind of financing decision a business makes depends on its investment portfolios and the overall corporate goal. This suggests that financing decisions will one way or other influence the performance of a business. A business can finance its operating and investment activities through debt instrument and equity instrument. A firm has a choice of either financing its investment project by increasing equity holders' position shares or debt holders' position or both (Pandy, 2010). The equity holders' position can be increased through the issuing of shares or retained earnings. However, the debt holders' position in the business can be increased by issuing debt instruments. According to Sinyabola, Olaoye, and Olurin (2015), the survival of a firm largely depends on how the firm makes use of equity and debt financing. A good mix of capital structure would strengthen firm's position in the industry. It is significant to note that, the debt capital has to be utilized appropriately as the high leveraged firm has a large cost of debt to be paid annually and this can affect its liquidity position and also makes debt holders have much influence in the firm especially when borrowings are secured on the assets of the firm. This gives the holders the right to sell the assets in case of default to recover the value of the loan. When this happens, the firm's position in the industry would be affected and its survival would be at stake. The concern of corporate

managers has been how to balance the debt and capital financing to minimize risk to an acceptable low level. To this end, Sinyabola, Olaoye, and Olurin, (2015) reiterated the need for companies to have a competent team in place and their main responsibility is to continue to monitor all long-term financing that the company utilizes. The team ought to be conscious of the danger involved in this source of finance. Owing to this, in recent times more attention has been paid to capital structure because of how relevant it is for organizations to continue to achieve profitability to maximize stakeholders' value. It appears from the empirical evidence that, there is an association amid capital structure and financial performance of a business. However, researchers across the world are not in the same line of the argument despite the similarity in objectives and the approach they deployed in their research work. They arrived at very different and conflicting conclusions. Several researches exposed that there is an optimistic association amid capital structure and financial performance (Roden & Lewellen, 1995; Abor, 2005; Kyereboah-Coleman, 2007; Margaritis & Psillaki, 2010; Fosu, 2013; Yakubu *et al.*, 2017; Vicar and Program, 2018; Yinusa *et al.*, 2019). In their research, they argued that when you determine the appropriate capital structure, it will lead to high profit and the overall business performance. On contrary, other researchers have found a negative relationship, (Booth *et al.*, 2001; Abbadi & Abu-Rub, 2012; Imtiaz, Mahmud, and Mallik, 2016; Alomari and Azzam, 2017), between these two variables. To compound the dilemma, other researchers also revealed in their study that there is no significant optimistic association amongst the variables besides that decisions related to the debt-equity mix of companies do not affect firm value in any way (El-Sayed Ebaid, 2009). This inconsistency in findings over the years therefore creates a research gap, and it is against this backdrop that this research is going to be conducted. With specific reference to studies on association amongst capital structure and financial performance of

insurance companies in emerging markets like Ghana are not only limited, but are also equally contradictory (Akpan, Mahat, Nordin, Annuar, &. Nassir (2017). Akpan *et al.* (2017) established a positive association among leverage employed by insurance companies and their performance. Other studies specific to the insurance industry have also found a negative connection between the variables (Malik, 2011; Tornyeva, 2013; Getahun, 2016; Alomari and Azzam, 2017). Further, other publications have even reported mixed results for different leverage ratios. Gatsi, Gadzo, and Akoto (2013), for instance, the gearing position of a firm was revealed to be inversely connected with profitability whereas operating leverage was positively allied with profitability. All these have continuously drawn the attention of researchers to study the association amongst capital structure and financial performance and therefore, there is a significant scope to conduct this research on insurance companies in Ghana.

1.3. Research Objectives

The research is seeking to study the capital structure and financial performance of insurance companies in Ghana. The aim is:

1. To examine the effect of capital structure on the profitability of insurance companies.
2. To assess the association amongst capital structure and the profitability of insurance companies in Ghana for over 5 years (2014-2018).
3. To explore the optimal capital structure for insurance companies in Ghana.
4. To examine the determining factors of capital structure in Ghana

1.4. Research Questions

The succeeding questions were developed to achieve the objectives of the research:

1. Does the capital structure have any influence on the profitability of insurance companies in Ghana?
2. Is there at all an association amongst capital structure and the profitability of insurance companies in Ghana?
3. What are the determining factors of the capital structure of insurance companies in Ghana?
4. Is there a best capital structure for insurance companies in Ghana?

1.5. Significance of the Study

The research will be significant for managers and stakeholders of insurance companies, potential investors, and researchers.

First and foremost, the study is important for management bodies and stakeholders of insurance companies in Ghana by giving significant information on how capital structure can have effect on performances of various companies and the care needs to be made during financing decisions as well. It can empower managers and guide them in achieving the best capital structure decision which could help them minimize the cost of capital and maximizing their firms.

Also, the study will be significant for current stakeholders and potential investors of insurance companies by giving deep knowledge and insights about the association amongst capital structure and insurance companies financial performances.

Moreover, the research can also be used as a good reference for other investigators in the future who want to conduct their research relating to capital structure influence on the performance of firms in the Ghanaian insurance industry.

1.6. Scope of the Study

The research focuses on how capital structure can influence the financial performance of insurance companies in Ghana. The study covered five years 2014-2018 and was confined to only insurance companies licensed by National Insurance Commission of Ghana

1.7. Limitations of the study

The study will use secondary sources of data (National Insurance commission annual reports) and others which are historical data by their nature. But this limitation is the intrinsic limitation of using secondary data in general and accounting data specifically.

The sampling procedure could also be another limitation of this study. In this study, the selection of the samples will be done through a non- probability sampling method based on the selection criteria to be used by the researcher. The Companies' operational period and the type of insurance business they subscribe (at least Non-life Insurance Companies) will be the selection criteria. This may introduce bias intrinsic with the non-probability sampling method which in turn affects the generalizability of findings to all insurance companies.

1.8. Organization of the Study

The research work is organized into five chapters. The first chapter deals with the introduction which covers the background, statement of problem, objectives, and research questions. It also covers the significance of the study, scope, and limitation of the study. Chapter two presents the theoretical and empirical literature related to the research area. It also consists of the research gap and theoretical framework of the study. The third chapter outlines the research methodology and research design. Chapter

four outlines the research results and discussions. The last chapter presents conclusions and recommendations, and citations, references, and Appendix.

CHAPTER TWO

LITERATURE REVIEW

2.0. Introduction

In reviewing related literature, the following areas were covered:

i. Meaning of Capital Structure
ii. Theory of Capital Structure
iii. Determining factors of Company's Capital Structure
iv. The company's performance measurement
v. Indicators of financial performance
vi. Indicators of Capital structure
vii. Association between Financial Performance and Capital Structure of a company

2.1. Meaning of Capital Structure

The sources of funds for an organization are referred to as its capital structure. The capital structure could be the form of capital share and a reserve, observed as shareholders' capitals, and their long-term debts, which is regarded as gearing or leverage. The Gearing is the amount of financial leverage that proves the degree to which the firm activities are funded by its possessor's capital against their external funding. It designates the amount of financial risk accepted by the long-term debt holders and equity holders and articulated as the association amongst fixed capital interest and ordinary capital share. The fixed capital interest includes capitals with fixed coupon rate, such as, preference shares and all creditors dwindling due to loans, debentures, mortgage and bonds after more than one year. The higher the association means that, the company is highly geared and the results of the firm are controlled by

the outside owners. However, the lower the association means the firm has a better control by an insider, which is healthier for the firm. The difference between equity funding and debt funding is in the ownership. With the case of equity funding, the investors become the possessors of the company and shares the profit of the company. Though, debt funding is not giving to ownership since it is actually referring to borrowing cash. The debt funding likewise hails from a harsh condition that is to pay the interest and principal at a stated date. To categorically state that, this type of capital structure is the best for a company, it is always difficult to outline. The capital structure is to increase the value of share equity or maximizes the equity holder's capital.

2.2. Theories of Capital Structure

The theory of capital structure could be first traced to the irrelevance principle of Modigliani and Miller's (1958). The theory can be upheld if these assumptions are present; perfect capital market condition, frictionless market, absence of arbitrage, absence of taxes, absence of transaction costs and absence of insolvency. Its emphasis on management efforts to make the most of shareholders' wealth (no agency cost) and operating cash flows should not be affected by the vicissitudes in the capital structure. The value of a company is sovereign of its capital structure. However, the choice of funding for a firm is immaterial. You neither generate nor destroy the value by just altering the debt level of the firm. However, this assumption is unrealistic as Modigliani and Miller (1963) revealed, that as the gearing level upsurges by substituting equity, by means of inexpensive debt, the weighted average cost of capital (WACC) level drops and optimum capital structure exists at a stage where debt is hundred percent (100%). The theory of MM then provoked thoughtful research that has invalidated these

irrelevances. As a result, theory of tradeoff, theory of pecking order and agency theory were born.

The theory of Trade-off proposes that companies can hand-picked their capital structure by balancing the expenses and debt financing benefits. The charges of debt financing consist of the likely cost of bankruptcy and agency conflicts, despite the fact the benefits also consist of tax advantage of interest payments. The trade-off points toward the presence of a target leverage that make best use of the value of the firm (Jawad et al., 2013). According to dynamic trade-off theory, companies may veer from their target capital structure and show an adjustment behavior towards that target. In the study of Jawad et al., (2013), they postulated that companies that are far-off from the target shows fast adjustments than the companies closer to the target, and companies that are overleveraged show fast modification than underleveraged companies and that these results are reliable with the dynamic trade-off theory.

Another proposed theory of capital structure is the marketing timing theory. The market timing theory is how companies and businesses in the economy choose whether to finance their investment with equity or debt instruments. It is one of the business finance theories, and is every so often compared with theory of pecking order and theory of trade-off. In corporate finance, equity market timing refers to a situation where a business issues shares at a high cost and then repurchases it at a lower cost. The purpose was to exploits temporary instabilities in the expense of equity relative to the cost of other forms of capital (Baker & Wurgler, 2002). According to Baker and Wurgler (2002), market timing is the primary determining factor of a corporation's capital structure. The market timing is, every now and then, classified as part of the behavioral finance literature since it does not clarify why there would be any asset mis-pricing, and that companies would be able to tell when there was mis-

pricing than financial markets. The study of Setyawan (2011) revealed that the market-to-book ratio has a bad consequence on the market leverage and that when companies attain certain level of their earnings growth, the stock price will be overrated, so it would be the right timing for companies to proceed with equity financing. This suggests that when the market price of a company is high the company equity ought to be raised and firm should issue a debt when the market price is comparatively low.

2.3 Determining Factors of Company's Capital Structure

A capital structure decision is very significant in the life a firm. Owing to this, managers spend more time in trying to achieve optimal capital structure. To achieve appropriate capital structure, corporate managers need to establish what factors determine a company's capital structure position. The capital structure theory (Modigliani and Miller, 1985) did not support that there are factors that is influencing the capital structure of a company. The theory hypothesized the worth of a company is sovereign to the capital structure strategy the organization accepts. The theory is founded on the following assumptions:

i. absence of taxes,
ii. absence of transaction cost,
iii. absence of bankruptcy costs, and
iv. absence of information on irregularity in the market.

Based on the above assumptions, if strictly follow without violation, there is no need for corporate managers to spend more time to obtain optimal debt to equity ratio. However, these assumptions cannot hold for all situations especially in this competitive complex business environment. Cevheroglu-Aca (2018) observed that examining the determining factors of a best capital structure is to diminish the Miller-Modigliani assumptions and

other theories since the theories varies in comparative prominence, the ideal capital structure providing by apiece of them is different. Consequently, there are no mutual agreement or, as Myers (2001) revealed that there is an absent of a general theory for an ideal capital structure. In addition to that, each of them makes available a countless benefit in recognizing the likely determining factors of the capital structure.

Empirical literature identified several determining factors of capital structure but not limited to the following: the profitability of the firm, the progress of the firm, non-debt tax shields, the firm dimensions, palpability, instability (or risk), liquidity, uniqueness, cash flow position, interest cover, cost of debt, tax rate, return on investment, floatation cost, cost of equity, control and regulatory framework of the firm (Cevheroglu-Aca,2018; Sibindi, A. B. ,2016; Manurung ,Suhadak, Nuzula, 2014;.Myers, 2001;). According to MA (2015) the profitability, the growth capability, the debt paying capability, the security value of assets and the enterprise scale will meaningfully impact capital structure.

The list of determining factors of capital structure conclusions constitute the following firm features, the firm age, the firm size, profitability, profit instability, palpability of assets, depreciation and the growth rate.

This section examines in detail some of these determinants:

2.3.1. The Firm Size

The companies with small size may have to rely on the equity because at this point it is riskier for any financial institutions to grant them credit facility but as they grow, they will be able to borrow because larger companies are considered less risky by investors. It is believed that as the firm increase, the more lucrative and more accumulating quality assets that can be used as collateral to secure loan. If there is more cash inflow and more

surplus profit, it is economically wise that the firm resorts to internal generated sources of funds rather than external as suggested by peck order theory. Under normal conditions, the larger companies are anticipated to geared slowly as equated to the smaller companies. Though, the trade- off and marketing timing theories suggests that larger companies should be extremely levered as equated to smaller companies since the interest on debt is tax deductible. This is not the case for dividend when a firm issues equity instrument. Besides, the theory of free-cash flow suggests that, usage of debt will alleviate the agency costs carried approximately by the profusion of free cash flows in the big companies. It was argued that due to the irregularity of an information, the large companies are probable going to have access to debt markets to be able to borrow at a lower price. The experiential evidence suggests that there is an optimistic affiliation between leverage and firm size (Lim ,2012; Bartoloni 2013; and Lemma & Negash, 2014) among others. In the study of Titman and Wessels (1988), however indicated the inverse among leverage and firm size. The above experiential evidence suggests that the firm size influences its capital structure.

2.3.2. Quality Tangible Assets

The theory of finance on capital structure usually hypothesize an optimistic affiliation amongst quality tangible assets and the leverage. In the study of Jensen & Meckling (1976), they argue that when a company shift unsafe investment subsequently issuing debt, at that moment there would be agency conflict amongst debt holders and equity holders since the usage of leverage allow shareholder to substitute low-risk assets with riskier ones. When firms have more valuable tangible non-current assets than intangible, financial institutions and lenders will be willing to grant them credit facilities since such asset serves as collateral in case of any default. Such firms stand the chance financing their operating and investment activities through debt instrument than those with less

intangible non-current assets. In case of any default, they can recover their loans (Frank & Goyal, 2009). In addition, Shareholders would not be interested in sacrificing high-risk assets for low risk assets. There is low associated cost and risk with a firm which has tangible quality assets. This suggests that such firm can use more debt to finance its operations. Therefore, it is argued that there is an optimistic association among tangibility and leverage. The reason was that the quality tangible properties serve as security when taking loan from financial organizations. This can be traced to trade-off theory perspective that seeks to explain that when companies grow, they will be able to borrow additional since they have extra tangible assets to guarantee as a security to enjoy the debt interest tax shield. In buttressing these points, Antoniou, Guney, & Paudyal, (2008) argued that quality tangible assets would have higher market value whereas intangible assets would be unable to find their value in case the business is liquidated. In this situation, the risk involved when firms are borrowing with high palpable properties is lesser. Thus money lenders will require a lesser risk premium. Hence, it is argued that there is an optimistic relationship among leverage and asset tangibility.

2.3.3. Profitability

Profitability assesses the ability of a firm to generate more income with less expenditure. This measures the monetary performance of the firm over a period of time. The firm with higher profit is likely to retain part of the profit for future investment. It would not incur more cost to float debt instrument and to also pay more interest which is consistent with the theory of peck order. On issues of association between profitability and leverage, two most important capital structure theories that is the trade-off and the peck order posited different conclusions. Conferring to the theory of classical trade-off, the profitability ought to be associated with the leverage since

companies with high revenue would borrow extra to shelter their income. Profitability is related with the accessibility of inner funds and could related with not as much of leverage under the theory of pecking order (Baker & Wurgler, 2002). The theory of Pecking-order forecasts that the companies first apply internal funding, passage to debt and lastly issue new equity when required. Hence, the theory of pecking order submits that there is a negative association among profitability and debt which is a foundation of the internal capitals. The work of Bartoloni (2013) supported the contrary relationship among firm leverage and profitability. The study concludes that a firm with more profit use more of internal financing as established by the negative association between a firm's debt ratio and profit on sales. When a company makes a high profit, there is high probability that the firm would reduce its external sources and, irrespective of the size as it is measured by employment, the larger firms display a minor compassion of leverage to profit differences (Abbas & Ahmad, 2011). The theory of trade-off forecasts an optimistic association among the leverage of the firm and the profitability. In the argument of the trade-off, the firms with higher profitability are projected to make good usage of extra debt to take an advantage from the debt-interest tax shield and maximize the worth of the firm. In the study of Hovakimian et al., (2004), an optimistic company leverage-profitability relationship could rise for a number of whys and wherefores. For instance, other things being equal, the advanced the profitability, the progressively the tax savings from debt, the lesser the likelihood of bankruptcy, and the increasingly over-investment, altogether suggest a higher target debt ratio. This understanding was supported through Myers (2001), he also revealed that when the firm's profitability is high, it is interpreted that the company has additional taxable income at its disposal and that the company's interest cover rate will be high suggesting that the firm has no solvency problem. Even though there are adequate empirical evidences to backing the

position of both the theory of pecking order and trade-off theory, the differences should not be one theory is valid and the other is not but rather be complementary. Each theory covers the weakness of the other. As Hovakimian et al (2004) puts it, there is a balance among trade-off and pecking order theories in relation to business performance. They were of the view that firm will chose to apply peck order theory if they prefer internal source and it is available otherwise they will be forced to seek for external source. If the performance of the business is poor and the internal source is not available, the business would have no option than to rely on debt instrument. This suggests that the choice amongst debt and equity hinge on the performance of the business and availability of finances.

2.3.4. Liquidity

In the theory of trade-off, high liquidity firms can borrow more since they would be able to honor their obligations on time. According to Jensen (1986) the leverage averts the agency glitches particularly for companies with high liquidity but lower growing rate. However, the theory of pecking order forecasts undesirable association among liquidity and leverage, since companies with high liquidity could use its internally made money somewhat than accumulating debt. Several studies supported the theory of pecking-order and reported that liquidity and leverage are contrariwise associated (Koutmos et al., 2004; Mazur, 2007).

2.3.5. Risk Consideration

Risk is among the determining factors of capital structure. Risk in general is described as any event, transaction or action that would prevent the business from achieving its objectives. In finance term, risk is associated with the chance that the business would not make profit. In relation to business finance, risk measures the fluctuations of cash flows projections of a firm. Financial risk refers to a business experiencing liquidity

problem which makes it difficult to meet its preferential creditors like interest, preference dividend, payment to creditors, taxation etc. Business also experience operating risk apart from financial risk. It depends on the operational cost; the higher operational cost means advanced business risk. The entire danger depends on the finance and as well as the business risk.

High instability earnings could be observed as one of the factors that makes the firm grieves from the financial anguish. As the instability upsurges, the company would probably fail to achieve its votive entitlements as it is due. Then, the financial theories assume an inverse association among instability earnings and leverage ratio. Quite a lot of studies supported this inverse association (Fama & French, 2002; Jong et al., 2008). Firms with high earnings instability would experience drop in earnings level to the extent that it cannot support its debt servicing commitment level (Antoniou et al, 2008). It can, therefore, be deduced that firms with higher instable earnings would have lower debt capital. This is consistent with the assertions of Frank and Goyal (2009), which argued that companies with further instable money flows face higher anticipated costs of financial suffering and could use a reduced amount of debt. Instability of cash flows of a business will make it difficult to utilize tax shields fully.

2.3.6. Control

The shareholders are well thought-out as the possessors of a firm and they have complete control of the business and also manage the vital decisions of the corporation. The holders of debenture have no hand in the management of the company whereas preference stockholders have inadequate right to ballot in the yearly meeting. Therefore, the entire control of the firm falls in the hands of equity stockholders. When the possessors besides current shareholders want to have a whole control of the firm, they must employ additional debt securities in the capital structure since additional equity

shares are issued, then other shareholder(s) may acquire many shares and gain control of the firm. The Board of Directors is selected by Equity Shareholders. They have the duty and authority of managing the firm. Thus, if another shareholder gets extra shares at that moment, the risk of losing control is high.

Debt providers have no nomination rights but if huge sum of a debt is given, the debt-holders, possibly, will impose certain terms and conditions on the firm such as limit on payment of dividends, taking on additional loans, investment in long term funds etc. Therefore, the firm must be aware of the type of debt securities to issue. If present shareholders want total control they ought to desire for debt and small amount of loans. If there is no problem of sharing the power, then they may go for share equity.

2.3.7. Dividend Policy

There is an association among the firm's dividend policy and the leverage position. If there is an indication that dividend payout ratio will increase due to increase in profit, it would favor equity holders and this would attract more equity holders. In such a situation the cost of equity will be low and therefore, using equity to finance business operations would be cheap as compare to debt. However, when there is dividend cut, it would favor debt holders and the firm would see external sources of finance to be cheap. Therefore, it can be concluded that there is an inverse association among leverage and dividend payout ratio. As indicated by Antoniou et al (2008) there is an opposite association among leverage and dividends in the U.S. They state that the higher the dividend paying, the more the company's profit on or after a lesser equity cost of capital. In the study of Lemma and Negash (2014), they revealed a contrary association among company leverage and dividend disbursement ratio based on the study of companies drawn from nine developing economies in Africa being; Ghana, South Africa, Botswana, Egypt, Kenya, Mauritius, Morocco, Nigeria, and Tunisia.

2.3.8. The Uniqueness

According to the study of Titman and Wessels (1988), when a firm product owns a high equal uniqueness, at that point, the insolvency cost of the company would be large since it is difficult to discover alternative for its products. Because, the firm will show heavier liquidation problem in the event of insolvency, the aforementioned would desire to utilize lesser debt to minimize the likelihood of financial distress. Consequently, bad association is projected among leverage and uniqueness.

2.3.9. Age

Among the determining factors of capital structure of a company is the age. A firm's age is also associated with the determining factors of capital structure. New firms will experience low profitability and may even suffer loss at the early stages of their operations because the operating expenses will be high, and sales would be low. However, well-established companies are projected to be lucrative and also, have additional internal generated income at their disposal. Again, well-established companies are projected to have a good standing in the debt market and henceforth remain assessed favorably. Older firms with more internal resources would follow the peck order theory preposition which ranks the use of retained earnings first since there is no cost associated with it. Also, using the retained earnings first will not dilute the shares and change the control. The older firms may decide to seek financing from debt markets even if they have internal resources just to take the advantages of tax relief and their ability to borrow at lower cost. For this reason, it can be argued that company leverage is absolutely associated with age.

According to Harris and Raviv (1991), the elongated company's antiquity of reimbursing its debt, the healthier is its standing and the smaller of its borrowing cost. Well-established firms which are well-known find it optimum to choose safer projects so that they would maintain their reputations, and not to participate in asset replacement to circumvent losing a valued standing but undeveloped companies by means of slight standing might select the dangerous project.

2.3.10. The Return on Investment

The return on investment is also part of the determining factors of capital structure. When the profits on investment remain more than the interest rate, the firm should desire for debt in its capital structure and when the returns on investment is not as much as the interest rate to be paid on the debt, then the firm ought to evade debt and rely on equity capital.

2.3.11. The Tax Rate

A high tax rate makes debt inexpensive as interest paid to debt security holders is tax deductible although the firm has to pay tax on the dividend paid to stockholders. Therefore, huge tax rate of debt is preferred while small tax rate of the equity in capital structure is preferred.

2.3.12. The Floatation Costs

Floatation cost is the cost incurred in issuing shares or debentures. The costs consist of the cost of advertisement, underwriting fees and many more, which are a huge concern for smaller businesses and even for big companies. They cannot ignore this cost since there are several legal formalities to be complied with before entering into the capital market. Issues with regards to shares and debentures needs additional formalities as well as more floatation cost.

It is obvious from the above empirical literature that, there are so many factors that have implications on the capital structure of a firm. However, there is a mixed relationship depending on how you examine each of the determinants. It is, therefore, significant for corporate managers to critically assess the determinants that are peculiar to their business environment and make capital structure decisions that will produce positive results.

2.4. Performance Measurement of a Firm

It is a normal practice to examine the progress of a business over a period and to determine if the objectives are being met. Performance measurement allows the business to identify its strength and weakness and the opportunity and threats presented by its external environment to formulate strategies to achieve the organizational objectives. Financial strategy is one of the key strategies of a business. Performance measurement is the process of assessing the profitability, liquidity and solvency position of the business. It looks at financial stability, viability and profitability of a business. Among the main aims of financial analysis is to identify variations in financial trends to help assess the progress made by an enterprise, and find patterns to draw a reasonable conclusion on the performance of the company. Performance measurement would afford the business opportunity to compare its own performance over a period and to also compare its performance with its contestants (Laitinen, 2002). The profitability and financial performance may perhaps be defined as a measurement of the results of a firm's polices and processes in financial terms. In the study of Rajitha & Sarngadharan (2011), they have differentiated return from profitability based on how it measures the earning capacity. The return is an absolute assessor of earning capacity where profitability is also a comparative assessor of earning capacity. In further arguments,

profit indicates the earning of a firm during a specified period, while profitability signifies whether these returns are constant or enhanced or worsened, in what way and to what extent they can be enhanced. According to Bititci, Firat, & Garengo (2013) profitability is an important factor for managers. They observed that the companies with the highest profitability are expected to perform better. Putting profitability measurement schemes in place could be a significant way of custody of track on the performance of the company by giving vital information about what is happening now, and also allows the company to attain its growth.

2.4.1. Indicators of Profitability

The main objective of a business is the Profitability and it is determined by the following indicators: return on asset (ROA), return on investment (ROI), return on equity (ROE), return on capital employed (ROCE), gross profit ratio (GPR) and net profit ratio (NPR), (Nishanthini & Nimalathasan, 2013).

This section looks at the meaning and implications of the indicators.

2.4.1.1. The Ratio of Gross Profit

The proportion of gross profit can be gotten from the net sales, that is, the association among sales and gross profit. It shows the procuring competence of an enterprise. The bigger the gross profit proportion, the healthier the procuring competence of the enterprise and also a high ratio of gross profits to sales is a sign of good management as it suggests that the cost of production of the firm is comparatively low. The association of low gross margin is absolutely a danger indication.

The formula is $\frac{Gross\ profit}{Sales}$x100

2.4.1.2. Operating profit ratio

The ratio of the profit functioning is a significant ratio that elucidate the variations among net profit margin ratio. The operating profit represents returns of an organization. This is gotten after subtracting all the operating expenditure from gross profit. The operating expenditures consist of administration, selling and distribution but expenditures on borrowing capitals and taxes paid to the government are not included. Hence, it signifies the overall income of an enterprise and there is awareness about the efficiency of an enterprise from its operating profit ratio. The better profit ratio functioning, the better is the overall efficiency of the enterprise.

The formula is $\frac{Net\ profit}{Sales}$X 100

2.4.1.3. Return on investment/ Return on Assets

In order to measure profitability of a firm, one needs to associate the return output with the capital input and estimate the rate of profit on capital investment. This rate is the end profit of a series of quantitative variables representing different interconnected and interdependent factors of business operations. The return on assets (ROA) refers to how profitable a firm is comparative to its total assets. The ROA create the awareness of managers, investors, or analysts how efficient a company's management is using its assets to generate incomes. Return on assets is displayed as a percentage. The method is as follows:

$\frac{Net\ Profit}{Total\ assets}$ x 100%

2.4.1.4. Return on capital employed

The profit on capital is a significant ratio. It demonstrates how much profit is made for every unit of money invested in the business. The returns on capital is assessed by the

ratio of net profit after interest and taxes by capital invested. The money employed signifies the totality of net tangible fixed assets and net current assets. It is also a measure of making power of the net assets of the business. It is calculated by formula as follows:

$$\frac{PBIT}{Total\ capital\ employed}$$

2.5. Indicators of Capital Structure

Solvency and gearing ratio represent the indicators of capital structure. Solvency denotes the capability to match the overall financial obligations of an organization with accessible assets. Therefore, a corporation is said to be solvent when it has adequate capital to cater for its liabilities now and in the long run when its liabilities are due for repayment. The solvency of an enterprise is influenced by the level of debt capital raised by the organization. When a bigger proportion of organization's assets are financed by debt, there would be a high risk and a superior possibility of a lower solvency position. According to Manurung, Suhadak and Nuzula (2014), the valid indicators that is used to measure capital structure were established to be the debt ratio, debt equity ratio and long-term debt to total equity. This study will consider the following variables.

2.5.1. The Ratio of Debt to Equity

This measures the amount of equity that signifies long term debt. The formula is

$$\frac{Long\ term\ debt}{Equity} \text{ x } 100$$

2.5.2. Debt to Total Capital

This is the amount of the entire assets that signifies long term debt. The formula is

$$\frac{Long\ term\ debt}{Total\ Capital} \text{ x } 100$$

2.6. Relationship among Capital Structure and Financial Performance of the Firm

Every financing decision of a firm focuses on minimizing risk while maximizing shareholders value. Shareholders' value is made up of increase in share prices of a firm and dividend received (Hall & Lowies, 2010). This can only happen when there is good financial performance. Financial performance of a business measures its ability to generate profit and improve assets value. Therefore, any capital structure decision of a firm will affect its performance. As MA (2015) puts it, there is an interactive association among capital structure and firm's performance. The capital structure, the ability of growth, equity concentration, board and firm scale has significant influence on a firm's performance. In the study of Olivier (2014), it was discovered that the capital structure is a significant indicator for the financial performance of a firm. He further posited that leverage is inversely associated with returns, and positively associated with systematic risk.

Berger (1995) was the first to found the effects of capital structure decisions on financial performance of businesses in the financial industry. The study posited that there was an optimistic relationship among capital asset ratio and profits of the banks. In a study conducted on Iranian firms to examine the relationship among capital structure and financial performance, the ROA and ROE are used as substitutes of financial performance while debt ratio and other measures are included to account for capital structure. Pouraghajan (2012) revealed that the companies can improve upon their performance by minimizing the debt ratio. This position was upheld by MA (2014) who conducted a research in China and revealed that capital structure is an important indicator for the financial performances of a firm and that leverage is negatively

associated with revenues on assets. This implies that if a firm wants to increase its performance, they need to avoid debt and operate based on equity (Vatavu, 2015). This was also buttressed by Jeannine, Gregory and Silas (2016), they posited a negative association among capital structure and both ROA and ROE. Odhiambo and Sam (2015) contradict the views of Pouraghaja (2012) and Vatavu (2015).

They argued that the firms with a high profit incurred more liabilities than firms that are less profitable, since firms with higher profit are exposed to low financial risk. In their study, it was also revealed that, firms that utilize extra debt outperformed those which utilize less debt. In the case of Robert (2017), the evidence also suggested a weak optimistic association amongst capital structure and financial performance of the listed companies. The study also concluded that too much liabilities in the firm's capital structure has an influence on firm performances as measured by earnings per share, return on assets and return on equity.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1. Research Design

A research design is a vehicle which guides the researcher in amassing, analyzing, interpreting and reporting the results (Creswell & Plano, 2007). It is a strategy for linking the theoretical research challenges with the relevant empirical research. It is a procedure use to collect data, analyze for the purpose of achieving the research objectives (Grey, 2014). This means that the objectives and nature of the research would determine the appropriate research design to use. There is a connection between the objectives of the study and the research design. When wrong research design is used for a study, the results may not reflect the real situation. Research design can be put in three forms, namely exploratory, descriptive and explanatory (Robson, 2002). He argued that each research design serves different purpose. With the descriptive research, the researcher would not manipulate any variable, but the phenomenon already existed at the time of the research. The purpose of it is to provide the picture of the phenomenon (Blumberg, Cooper & Schindler, 2005). It cannot provide an explanation why a phenomenon occurred (Punch, 2005).

An exploratory study seeks to discover new phenomenon and to understand why it happens and to what extents it can influences others. It would have been valuable if the research was just about a descriptive and understanding of somewhat glitches and that there is also a readiness to change direction (Robson, 2002). Based on the ambition of this research, the researcher uses explanatory study. This is because it seeks to establish the association among a capital structure and company's performance. The purpose of

explanatory research is to clarify procedures and studies causal associations among variables.

The impartial of these explanatory learning is to upsurge the understanding of a researcher on a positive subject matter. It does not give conclusive results since it is lacking of statistical strength, but rather makes the researcher to determine how and why things happen. Also, because the study uses secondary data, explanatory type of research is appropriate. However, this type of research design may generate certain types of information and interpretations which could occasionally lead to foreseeable information. Despite this limitation of the design, it is appropriate for this study.

3.2. Target Population and Sample Size

The target populace for this study is all insurance companies registered under National Insurance Commission (NIC). It covers 22 Life Insurance Companies, 29 Non-life Insurance Companies and 3 Reinsurers making a total of 54 insurance companies. The researcher adopted a purpose sampling method to select the insurance companies with full financial data covering 2014 to 2018. Lack of complete financial data for some companies necessitated the use of this sampling method. To this end, the insurance companies were selected based upon their existence before 2014 and operated continuously for the period 2014 to 2018 with full published audited accounts for this period.

3.3. Types and Sources of Data

Secondary data would be used for this study which will be sourced through the annual audited financial statements of the nominated companies, publications and reports of Ghana Statistical Service on the insurance industry from 2014 to 2018. The nature of

the data will be allowed for the use of panel regression methodology. The data which is panel refers to a dataset that consist of several annotations to apiece sampling unit. That may perhaps produce by merging time-series annotations across an assortment of cross-sectional units that includes countries, states, regions, companies, or arbitrarily sampled individuals or households (Baltagi, 2001). According to Kennedy (2008), the panel data have more variability and it allows seeing the sights of additional issues while cross-sectional or time-series data alone cannot. Baltagi (2001) revealed that panel data provides further informative data, further variability, reduced an amount of collinearity amongst variables, further degrees of freedom and further efficiency. Rendering the study of Baltagi (2001), panel data provides the researcher more evidences about a data by fitting together cross section and time factors. A panel data encompasses a number of objects or themes, each of which comprises time observations assessed through a time period.

3.4. Variables under Study

The variables that would be used for this study include profitability of a firm (Performance) and firms leverage (Capital structure) ratios. The profitability of a firm is the response variable and firms leverage are the explanatory variable.

3.4.1. The Performances of a Firm

The firm performance may well be measured by the financial or market perspective. For the finance perspective, there are a lot of methods used in evaluating the financial performance of a company which includes economic value added (EVA). The EVA is assessor of financial performance of a firm founded on the outstanding wealth calculated by taking its cost of capital from its operating return, adjusted for taxes on a

cash basis. EVA can also be stated as economic return, as it tries to capture the true economic return of a firm.

Granting that the financial performance may perhaps be better reflected by this technique, it may well use some variables that are associated with capital structure. Therefore, profitability of a firm will be measured using the ROA and ROE. The ROA is used generally to refer to the profit that was generated with the assets of an entity. ROE is also used to show the company's profits attributed to the equity.

These ratios will be determined using the following formulas:

Return on Assets (ROA) = $\frac{PBIT}{Total\ Assets}$x100

Return on Equity (ROE) = $\frac{Profit\ after\ tax}{Net\ assets}$x100

3.4.2. The Capital Structure

There are several kinds of opinions on capital structure. Some maintain that capital structure is the structure of a firm long-term capital resource. They habitually select the proportion of long-term debt to equity capital as substitution variable whilst others reason that the capital structure of a firm should not narrow to long term capital only but should also contain short term capital source. They classically select the percentage of debt to assets. This study would measure capital structure by using leverage or gearing ratio. Even though there are many interpretations of what represent capital structure, the leverage ratio to be used is long term debt to total capital.

The Formula is $\frac{Long\ term\ debt}{Total\ Capital}$ x 100

This measures the amount of total capital that represents long term debt. This is the explanatory variable in this study.

3.5. The Model Specification

The association amongst the capital structure and financial performance of the selected insurance companies will be established using panel linear regression. The following regression models will therefore be used:

$ROE_{i,t} = \beta_0 + \beta_1 LTDC_{i,t} + \varepsilon$ 1

$ROA_{i,t} = \beta_0 + \beta_1 LTDC_{i,t} + \varepsilon$ 2

where:

$\boldsymbol{ROE_{i,t}}$ is PBIT divided by equity for firm *i* in time *t.*

$\boldsymbol{ROA_{i,t}}$ is PBIT divided by total assets for firm *i* in time *t.*

$\boldsymbol{LTDC_{i,t}}$ is long-term debt divided by total capital for firm *i* in time *t.*

ε is the error term.

β is the gradient of the equation

The model of the determining factors of capital structure is as follows:

Y=β0+β1X1+β2X2+β3X3+ β4X4+β5X6+ α

Where, Y = the proportion of debt

β0 = slope of the equation

α = error

X1= Return on Equity $\frac{Profit\ after\ tax}{Net\ assets}$x100

X2= Assets Quality $\frac{Total\ investment}{Total\ Assets}$

X3= Growth change in policyholder inflows

X4 = Age of the firm

X5= Inflation

X6= Interest rate

β=coefficient of the dependent variables

3.6. Research Instruments

The study would use a panel data sourced from the financial statements of the insurance corporations registered under National Insurance Commission. The study used an audited financial statement sourced from Ghana Stock Exchange website, National Insurance Commission website and the individual companies' websites.

3.7. The Dependability and Legitimacy of the Data

The study used secondary data that was sourced through the audited financial statements of the stated insurance companies. Therefore, the data is dependable for the purpose of this study. The needed inspection and cross inspection were done while scanning information and data from the secondary sources. All these factors were done in order to generate a valid data for the present study.

3.8. Data Collection Procedure

The financial statements for insurance businesses were taken from the Ghana Stock Exchange for those listed on it and National Insurance Commission. The computation for the applicable ratios for instance debt ratio, return on assets and return on equity was done accordingly and recorded in the data computation sheet.

3.9. Data Analysis Procedure

The various relevant ratios were computed for the selected insurance companies covering a period of 2014-2018 and entered Eviews. Regression analysis and correlations were then used to generate the results for discussion.

3.10. The Transformation on Policyholder Influxes

This proportion measures the shrinkage of an underwriter's total premium (both risk and savings components) of the influxes from the policyholders.

3.11. Amount of Investment to Assets

The amount of investment to assets is an asset quality ratio computed as a proportion of the overall investments (together with cash and cash equivalents) to entire assets. It pursues to establish the quantity of the company's assets that are in the reserves as opposite to operational assets. The investment assets are normally kept for meeting recognized liabilities and therefore a huge investment assets ratio displays a positive position than low investment ratio.

3.12. Return on Equity (ROE)

The proportion computes the revenue on stockholders' fund over a period of time (usually one year). A bad proportion suggests that the business have experienced a loss or has an undesirable equity base or both throughout the period.

3.13. Return on Asset (ROA)

The ROA represent the proportion of a return after tax to overall assets. It computes the efficacy that the management utilizes the assets of the business to generate revenues for its various investors.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.1. Introduction

The study considered company's capital structure decision and its effect on the profitability. A panel-data covering 2014 to 2018 audited financial statements of Insurances Companies under National Insurance Commission was used in this study. A total sample of 24 insurance companies was purposely selected due non-availability of some companies' financial data. To test for the association amongst Profitability and Capital Structure of a firm, Random-effects GLS regression was applied. For the determining factors of capital structure, pair-wise ordinary correlation was used. For the purpose of this study, capital structure was computed as debt-equity ratio even though profitability was measured as revenue on assets (ROA). The following section discusses the purposes of this study.

4.2. The Outcome of Capital Structure on Profitability

The objective of every corporate business organization is to generate profit to be able to maximize shareholder's value both in the short run and in the long run. However, the business investment activities to generate this profit would have to be financed. This results to capital structure verdict of a firm. This decision was very important in achieving the organizational goals. Based on this, the first objective seeks to determine the effect of capital structure on the profitability of insurance companies. The focus was to determine if there is any relationship and how this relationship is statistically significant to cause change in profitability. To determine the appropriate General Least Square regression method to use, Hausman Test was performed and Randon-effect GLS

regression method was then used (P (0.4048) > 0.05). The result of Random-effects GLS regression is showed in Table 4.1 below

Table 4.1: Impact of Capital Structure on Profitability

Dependent Variable: Return on assets (ROA)

Method: Panel Least Squares

Sample: 2014- 2018

Periods included: 5

Cross-sections included: 24

Total panel (balanced) observations: 120

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DEBT_EQUITY	-0.099150	0.020058	-4.943130	0.0000
C	12.31294	1.358105	9.066270	0.0000

Root MSE	4.708468	R-squared	0.171549
Mean dependent var	5.950750	Adjusted R-squared	0.164528
S.D. dependent var	5.194735	S.E. of regression	4.748202
Akaike info criterion	5.969935	Sum squared resid	2660.360
Schwarz criterion	6.016394	Log likelihood	-356.1961
Hannan-Quinn criter.	5.988802	F-statistic	24.43453
Durbin-Watson stat	0.811410	Prob(F-statistic)	0.000003

It was observed from Table 4.1 above that, there was a negative statistical significant connection amongst capital structure and firms' profitability (R^2 =-0.14, F(1,120)=24.43, P(0.000) < 0.05). This evidence means that any increase in the debt-

equity ratio would cause the profitability which was examined in this study as Return on assets (ROA) to also decrease (Coefficient=-0.099150). This evidence is line with Bartoloni (2013) who posited that there was an inverse association amongst gearing position of a firm and its profitability. He was of the view that businesses with high profitability would have more inner resources and they would choose to finance its operations from the retain earnings since it would not cause its operating expenses to increase. It is obvious that firms with low profitability level would not have much internal resources, consequently, would rely on external source to finance its activities. With this empirical evidence, this study, therefore, conclude that there is negative association amongst a company's debt ratio and profit on sales. A lowly-geared company pays less cost of debt as compared to highly geared ones and hence, operating expenses will reduce thereby increasing the profit of the firm. However, this result contradicts the work of Roden & Lewellen, 1995; Abor, 2005; Kyereboah-Coleman, 2007; Margaritis & Psillaki, 2010; Fosu, 2013; Yakubu *et al.*, 2017; Vicar & Program, 2018 and Yinusa *et al.*, 2019). They were of the view that capital structure and profitability are positively correlated. Again, this study was contrary to the theory of trade-off which points out that, the companies with a high profit are anticipated to make use of additional debt to benefit from the debt-interest tax shield and maximize value of the company. The position of the theory is that, cost of debt is tax deductible while cost of equity is not tax deductible in determining the profit of a business. This theory fails to recognize that, cost of debt must be settled whether profit is made or not while dividend payment to equity holders can be postponed. It can, therefore, be deduced that interest payment puts more financial pressure on management than dividend payment. Based on this, firms may prefer equity financing to debt financing. It is, however, important for the firm to study its circumstances and examine market forces before

taking any capital structure decision. This is the point of view of market timing theory. The corporate leaders should always monitor the business environment. This would help them to understand the dynamics of debt and equity instruments, thereby choosing the right capital structure. This study likewise supports the assertion that, when the right capital structure decision is made, it would go a long way to improve business performance.

With respect to the gearing (Debt-Equity) position of insurance companies in Ghana, the study found out an increasing trend. Figure 4.1 depicts the results

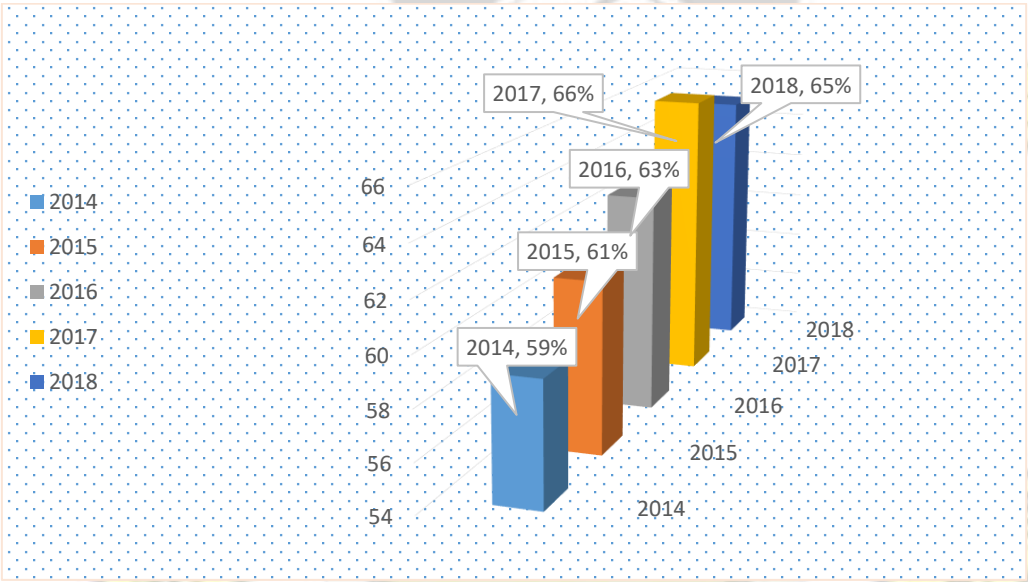

Figure 4.1: Trend in Insurance Companies Capital Structure

As seen in the figure above, the insurance companies experienced an increasing trend in debt-equity ratio over the past five years. For instance, the average gearing ratio was 59% in 2014 and this figure marginally increased to 61% and 63% in 2015 and 2016 respectively. The trend continued to 2017 with an average gearing ratio of 66% before

marginally declining to 65% in 2018. This trend indicates that insurance companies are highly geared. It is worth noting that this is not a worrying trend as financial institutions are generally highly geared due to their nature of operations.

The study further carried out Pedroni Residual Cointegration Test to find if the relationship established between debt-equity and profitability can stay for a long period. The evidence is depicted in Table 4.2 below.

Table 4.2: Debt-Equity and Profitability Cointegration

Pedroni Residual Cointegration Test

Series: DEBT_EQUITY ROA

Sample: 2014 2018

Included observations: 120

Cross-sections included: 24

Null Hypothesis: No cointegration

Trend assumption: No deterministic trend

Automatic lag length selection based on SIC with a max lag of 0

Newey-West automatic bandwidth selection and Bartlett kernel

Alternative hypothesis: common AR coefs. (within-dimension)

			Weighted	
	Statistic	Prob.	Statistic	Prob.
Panel v-Statistic	0.222758	0.4119	-0.426794	0.6652
Panel rho-Statistic	0.316796	0.6243	-0.037704	0.4850
Panel PP-Statistic	-3.526021	0.0002	-5.820178	0.0000

Panel ADF-Statistic	-3.520949	0.0002	-5.634528	0.0000

Alternative hypothesis: individual AR coefs. (between-dimension)

	Statistic	Prob.
Group rho-Statistic	2.613903	0.9955
Group PP-Statistic	-6.123856	0.0000
Group ADF-Statistic	-4.726569	0.0000

Cross section specific results

Phillips-Peron results (non-parametric)

Cross ID	AR(1)	Variance	HAC	Bandwidth	Obs
1	-0.595	7.373063	3.495244	2.00	4
2	0.385	3.401112	5.222311	1.00	4
3	-0.348	8.555186	8.555186	0.00	4
4	-0.267	15.07831	11.83403	1.00	4
5	0.040	36.90156	36.90156	0.00	4
6	0.117	9.753168	9.753168	0.00	4
7	-0.154	7.977784	6.606536	1.00	4
8	0.299	4.950432	4.950432	0.00	4
9	0.555	4.982957	4.982957	0.00	4

10	-0.367	20.17529	20.17529	0.00	4
11	-0.180	36.06228	36.06228	0.00	4
12	-0.710	3.135976	0.899094	3.00	4
13	0.358	9.084156	9.084156	0.00	4
14	-0.284	15.44852	15.44852	0.00	4
15	-0.658	0.053882	0.017887	2.00	4
16	-0.357	16.58179	16.58179	0.00	4
17	-0.532	0.079361	0.079361	0.00	4
18	-0.523	0.002022	0.001716	1.00	4
19	0.017	1.758265	1.758265	0.00	4
20	0.050	69.85000	69.85000	0.00	4
21	0.042	51.81071	51.81071	0.00	4
22	-0.168	1.988095	1.988095	0.00	4
23	-0.868	6.816462	6.816462	0.00	4
24	-0.892	1.469524	1.469524	0.00	4

Augmented Dickey-Fuller results (parametric)

Cross ID	AR(1)	Variance	Lag	Max lag	Obs
1	-0.595	7.373063	0	0	4
2	0.385	3.401112	0	0	4
3	-0.348	8.555186	0	0	4
4	-0.267	15.07831	0	0	4

5	0.040	36.90156	0	0	4
6	0.117	9.753168	0	0	4
7	-0.154	7.977784	0	0	4
8	0.299	4.950432	0	0	4
9	0.555	4.982957	0	0	4
10	-0.367	20.17529	0	0	4
11	-0.180	36.06228	0	0	4
12	-0.710	3.135976	0	0	4
13	0.358	9.084156	0	0	4
14	-0.284	15.44852	0	0	4
15	-0.658	0.053882	0	0	4
16	-0.357	16.58179	0	0	4
17	-0.532	0.079361	0	0	4
18	-0.523	0.002022	0	0	4
19	0.017	1.758265	0	0	4
20	0.050	69.85000	0	0	4
21	0.042	51.81071	0	0	4
22	-0.168	1.988095	0	0	4
23	-0.868	6.816462	0	0	4
24	-0.892	1.469524	0	0	4

Statistical evidence from Table 4.2 suggests that there is a long run relationship amongst capital structure and profitability as six (6) out of eleven (11) outcomes showed significant p-value, $p < 0.05$. It was also observed that, majority (15) representing 62.5% of the observed insurance companies would experience negative association between their capital structure and profitability. Since these two variables

are cointegrated for a long period, it is important for corporate decision makers to establish the right capital structure that would maximize shareholder's value. If a firm fails to determine the right capital structure, its profitability would suffer. The decision of capital structure is not a matter of choice but rather key in firm's survival.

4.3. Determining Factors of Capital Structure

This section looks at the determining factors of capital structure. Since capital structure decision influences the financial performance of a business, it is appropriate to examine its determinants. Both external and internal factors were studied in this study. The objective was to establish the level of significant influence they have on capital structure. To determine the relation and significance influence, pairwise correlation was performed. The result is portrayed in Table 4.3 below.

Table 4.3: Determinants of Capital Structure

	Debt-Equity	ROE	Growth	Assets Quality	Age	Inflation rate	Monetary policy
Debt-Equity	1.000						
ROE	-0.2685	1.000					
	0.003						
Growth	0.2346	-0.0905	1.0000				
	0.0099	0.3255					
Assets-Quality	0.3835	-0.0104	0.0300	1.0000			
	0.0000	0.9104	0.7446				
Age	0.0380	0.1996	-0.1179	0.237	1.0000		
	0.6806	0.0289	0.1999	0.0092			
Inflation Rate	-0.0315	0.0494	0.2322	-0.0349	0.0756	1.0000	
	0.7328	0.5923	0.0107	0.7055	0.4118		
Interest rate Policy	-0.0330	0.0326	0.2087	-0.123	-0.0919	0.7946	1.0000
	0.7202	0.7234	0.0221	0.1807	0.3181	0.0000	

It was observed from Table 4.3 that, there was a weak negative statistical significant association amongst capital structure and profit on equity ($r(120) = -0.2685$, $P(.003) < .05$) This relationship suggests that, when a firm expects a higher return on equity, the debt-equity ratio must be reduced to achieve this. Any increase in debt-equity ratio would reduce return on equity. The researcher posited that when a firm plans to increase its return on equity, it should reduce its debt financing level. When we consider only the return on equity in this study, the peck order theory is upheld. The theory of pecking order proposes that there is a bad association among debt and profitability which is a foundation for inner capitals. Bartoloni (2013) also upheld the peck order theory with profitability as a factor.

The growth which refers to the size of a company is positively correlated with debt-equity with a significant *P*-value of 0.0099. This evidence suggests that when a firm is experiencing growth and it wants to maintain it, the best source of finance is debt instrument. It can also be deduced from this angle that lenders will be more willing to grant credit facilities to companies experiencing growth at a reduce cost debt due to the confidence level in terms of the default rate they have in such companies as compare to companies experiencing contraction. The result of this study confirms the position of early researchers (Bartoloni 2013; and Lemma & Negash, 2014). They argued that there is a positive association among leverage and firm size. A company should take the advantage of its growth or size to finance its activities through debt instrument at a competitive interest rate to enable it to sustain its growth. However, this outcome is in contradiction with the results of Titman and Wessels (1988), who indicated inverse between leverage and firm size. What is clear here is that the firm size determines its

capital structure. Small firms might not see more debt financing attractive and rational while large firms would consider more debt financing appropriate.

On the issue of asset quality, the relationship is positive and significant (r (120) = 0.3835, P (0.0000) < 0.05). The study uses the amount of investment assets ratio to measure assets quality. This percentage was computed as overall savings divided by overall asset. It is a valuable measure of the quality of assets on the insurer's balance sheet. This positive correlation gives an indication that, a company with additional quality assets can borrow more than a company with less quality assets. Assets with quality value can be used as collateral for credit facilities. The findings confirm the work of Frank & Goyal (2009) who argued that when firms have more valuable tangible non-current assets than intangible, financial institutions and lenders will be willing to grant them credit facilities since such asset can serve as collateral in case of any default. With relationship with ROE and growth, assets quality has a weak negative correlation with ROE, but it is not significant (r = -0.0104; P = 0.9104) while positively correlated with growth even though the P-value is not significant (r=0.0300; P=0.7446).

The study also went further to test if age of a company can influence capital structure decision. The empirical evidence from the test suggest that age have no influence on capital structure decision of a firm even though it appears to have a positive relationship with capital structure (r (120) = 0.0380, P (0.6806)> 0.05). This result does not support the belief that order firms would first seek for external sources first due to their long run good reputation. Even though such firms would have an advantage over new firms when it comes to securing debt, it does not necessary mean that they would go for external first if the internal source is available. However, if a firm has a long history of debt repayment without default, there is a high probability that, it can borrow more, and debt financing will become cheaper source of finance. Harris and Raviv (1991) agreed

with this assertion. To them, the lengthier the company's history of recompensing its debt, the better of its standing, and the lesser of its borrowing cost. It was also observed that age has a significant influence on ROE and Assets quality as it positively correlated with them (r (120) = 0.1996, P (0.0289) < 0.05) and (r (120) = -0.0237, P (0.0092) < 0.05). It was, however, negatively correlated with growth (r (120) = -0.1179, P (0.1999) > 0.05).

Inflation is an external variable which affect business operations. To this, the study is required to find out if inflation could determine the firm capital structure. It was established that inflation has no influence on capital structure even though it has negative correlation with capital structure (r (120) = -0.0315, P (0.7328) > 0.05).

Interest rate policy was also examined to determine if it has influence on capital structure. It is believed that when the interest rate is high, the cost of debt becomes high making debt financing very expensive. The result from Table 4.3 depicts that monetary policy has weak inverse relationship with capital structure but the P-value was not significant to be included as a determinant (r (120) = -0.0330, P (0.7202) > 0.05). Comparing it with the other external variable, which is the inflation, there was statistically significant strong positive correlation between them. This attest the fact that anytime interest rates go up, it triggers inflation to also move up.

Other variables identified in the literature which have influence on capital structure but not statistically tested in this study include corporate tax rate, control and dividend policy. With the corporate tax rate, it is believed that when tax rate is high, debt becomes cheaper since the interest component would be deducted before tax is calculated. But if the tax rate is low, debt becomes expensive and therefore, equity becomes the preferred financing instrument. As regards control, if the shareholders want

to maintain the control structure, debt would not be the right option since it will take the control away from equity holders. Dividend policy can also determine the capital structure. If there is an indication that dividend payout ratio will increase due to increase in profit, it would favor equity holders and this would attract more equity holders. In such a situation the cost of equity will be low and therefore, using equity to finance business operations would be cheap as compare to debt. However, when there is dividend cut, it would favor deb tholders and the firm would see external sources of finance to be cheap.

To conclude, the ROE, assets quality and growth are the significant determining factors of a firm capital structure. The rest also show relationships, but this was not significant to influence the capital structure especially the external factors.

4.4. Optimal Capital Structure for Insurance Companies in Ghana

In corporate world, when businesses makes proper investment in assets and strategically manage its operations, there is high tendency that the shareholders' value would be maximized. However, it is very critical to achieve the objectives of determining the best capital structure that could be affected by the sources of long-term finance used. Inappropriate capital structure could affect a business adversely. To this end, this study sought to explore an optimal capital structure among insurance companies in Ghana. Even though, there is no standard to measure optimal capital structure, the base line is that, any optimal capital structure a firm chooses should maximize profit and creates value for shareholders. That is, the optimal capital structure is an amalgamation of the equity and debt that will make best use of the value of the business, all other things being equal. To determine an optimal capital structure of the insurance companies in

Ghana, a threshold regression analysis was performed using Revenue on Equity as a response variable and Debt-Equity as an independent variable. Table 4.4

Table 4.4: Optimal capital structure for insurance companies in Ghana

Multiple threshold tests
Bai-Perron tests of L+1 vs. L sequentially determined thresholds
Sample: 1 24
Included observations: 24
Threshold variable: RESID
Threshold varying variables: DEBT_EQUITY C
Threshold test options: Trimming 0.15, Max. thresholds 5, Sig. level 0.05

Sequential F-statistic determined thresholds:			1
Threshold Test	F-statistic	Scaled F-statistic	Critical Value**
0 vs. 1 *	34.82968	69.65937	11.47
1 vs. 2	5.935217	11.87043	12.95

* Significant at the 0.05 level.
** Bai-Perron (Econometric Journal, 2003) critical values.

The empirical evidence from this observation suggests that, the optimal capital structure ranges from 34.8% to 69.7% at *P*- value 0.05 for insurance companies in Ghana. This range implies that the optimal capital structure varies across the insurance companies. Even though the companies are in the same industry, each company has unique way of responding to the various factors that influence the capital and hence, different optimum capital structure. It can be deduced that there is no general optimum capital structure for firms even in the same industry. This confirms the theory of trade-off of capital structure which assumes that managers blend debt and equity that attains a balance amid the tax returns of debt and the various costs of using financial leverage.

For a firm to achieve an optimum capital structure, the marginal benefits must be equal to the marginal cost of debt. The following steps should be taken when determining a firm's optimum capital structure.

i. an estimation of the interest rate that the company will pay;
ii. an approximation of the cost of equity;
iii. an estimation of the weighted average cost of capital;
iv. an estimation of the free cash flows and their present value, which is the value of the company; and
v. deducing the value of the debt to find the shareholders' wealth, which is to capitalize on.

It is also worth to note that optimal capital of a firm changes from one period to another and differs from one company to another. The residual graph of the capital structure threshold showing this trend is portrayed in Figure 4.2 below.

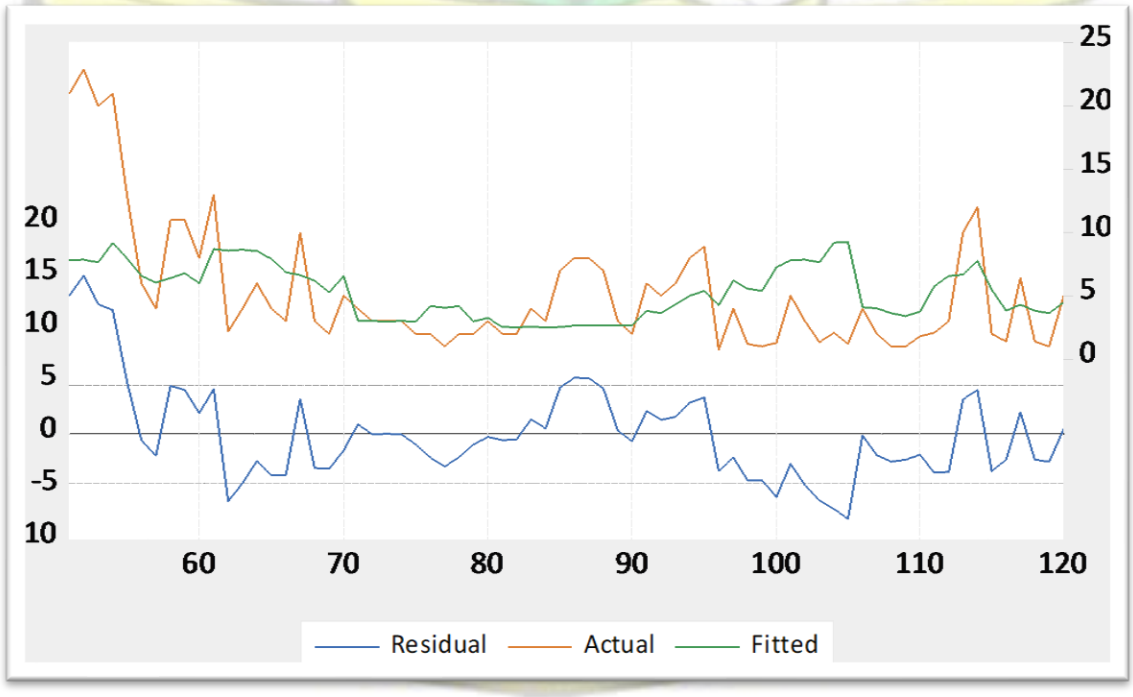

Figure 4.2: Trend of Optimal Capital Structure

From the Figure 4.2 above, it can be realized that the optimal capital structure of the insurance companies varies as its impact on profitability also varies accordingly. This

means that there is no fixed optimum capital structure for a company. For this reason, firms should also analyze its business operations and objectives before deciding on the appropriate capital structure.

The evidence suggests that it is a challenging task for corporate managers to determine the best capital structure for a corporation in the process of making best use of shareholder. This is attributed to the dynamic nature of the factors that influence the company's capital structure. Shares and new loans are regularly raised in "lumpy" amounts, making it nearly impossible for a corporation to remain at its best capital structure.

CHAPTER FIVE

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

5.0. Introduction

This section presents a summary of findings of the study, conclusions on main objectives of this study and recommendations are made. It also proposes areas for further studies.

5.1. Summary of the Study

The study examined the firm's capital structure decision and its influence on the profitability. A panel-data covering 2014 to 2018 audited financial statements of Insurances Companies under National Insurance Commission was used in the study. The study was guided by four research questions and the questions include:

1. Does capital structure have any influence on the profitability of insurance companies in Ghana?
2. Is there any association among capital structure and the profitability of insurance companies in Ghana?
3. What are the determinants of capital structure of insurance companies in Ghana?
4. Is there an optimum capital structure for insurance companies in Ghana?

This study used secondary data covering 2014 to 2018. Regression Analysis was used to answer questions 1 and 2. With the determinants of capital structure, pairwise correlation was used. To establish the optimal capital structure, Threshold regression was used.

From the analysis, results and discussion, the following key findings were made:

i. There was statistically significant negative relationship among capital structure and firms' profitability.

ii. There is a long run relationship among capital structure and profitability

iii. It was also established that there was an increasing movement in the leverage position of the insurance companies.

iv. Return on equity, growth and assets quality are the key determining factors of capital structure.

v. The monetary policy has weak inverse relationship with capital structure but was not significant.

vi. The optimal capital structure ranges from 34.8% to 69.7. This range implies that the optimal capital structure varies across the insurance companies

5.2. Conclusions

From the results, the following conclusions were drawn:

i. An increase in the debt-equity ratio would cause the profitability to also decrease

ii. When the right capital structure decision is made, it would go a long way to improve business performance.

iii. The companies in the insurance industry are highly geared.

iv. lenders will be more willing to grant credit facilities to companies experiencing growth at a reduce cost debt due to the confidence level in terms of the default rate they have in such companies as compare to companies experiencing contraction

v. A firm with additional quality assets can borrow more than a firm with less quality assets

vi. When a firm is experiencing growth, the best source of finance is debt instrument

vii. For a firm to achieve an optimum capital structure, the marginal benefits must be equal to the marginal cost of debt

viii. Absent of fixed optimum capital structure for a firm

5.3. Recommendations

From the deductions reached, the study makes the following recommendation.

i. The corporate leaders ought to always monitor the business environment. This would help them to understand the dynamics of debt and equity instruments, thereby choosing the right capital structure.

ii. When a firm plans to increase its return on equity, it should reduce its debt financing level

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APPENDIX A

KEY RATIOS FOR INSURANCE COMPANIES- 2014-2018

sn	Year	Debt-Equity	ROE	ROA	Growth	Assets Quality	No of BOD	Age	Inflation rate	Monetary policy
1	2014	54.1	23	12	15	87	9	16	15.49	29.98
1	2015	56.4	20	7	43	88	9	17	17.15	27.5
1	2016	60.8	33	3	34	90	9	18	17.46	28.08
1	2017	70.2	18	2	19	91	9	19	12.37	26.22
1	2018	57.3	23	6	14	71	9	13	9.84	23.96
2	2014	40.2	-13	14	17	67	5	10	15.49	29.98
2	2015	36.5	-8	16	43	34	5	18	17.15	27.5
2	2016	34.8	12	17.8	1	20	5	12	17.46	28.08
2	2017	32	14	19.7	18	62	5	12	12.37	26.22
2	2018	32	9	5	-6	65	5	14	9.84	23.96
3	2014	64	10	3	17	80	9	19	15.49	29.98
3	2015	66.3	15	2	22	81	9	20	17.15	27.5
3	2016	80	22	1	9	82	9	21	17.46	28.08
3	2017	84.8	19	0.6	7	83.2	9	22	12.37	26.22
3	2018	91.4	-10	-1	8	90	9	23	9.84	23.96
4	2014	32.7	-53	5	33	64	9	6	15.49	29.98
4	2015	33.6	8	3	46	66	9	7	17.15	27.5
4	2016	26.6	5	7	38	70	9	6	17.46	28.08
4	2017	31.3	10	6	21	34	9	9	12.37	26.22
4	2018	39.8	-4	12	-12	78	9	10	9.84	23.96
5	2014	63.7	7	5	9	88	9	13	15.49	29.98
5	2015	67.7	-2	3	23	82	9	6	17.15	27.5
5	2016	75.5	11	6	58	87	9	7	17.46	28.08
5	2017	85.6	16	5	15	87	9	8	12.37	26.22
5	2018	90	20	13	3	90	9	9	9.84	23.96
6	2014	25.9	17	15	4	73	15	30	15.49	29.98

6	2015	23.4	7	3	38	68	15	31	17.15	27.5
6	2016	28.1	20	2	33	79	15	32	17.46	28.08
6	2017	27.7	21	8	2	76	15	33	12.37	26.22
6	2018	32.4	-2	2	4	72	15	34	9.84	23.96
7	2014	56	22	13	7	78	7	34	15.49	29.98
7	2015	61	15	11	43	80	7	35	17.15	27.5
7	2016	69	14	9	36	82	7	36	17.46	28.08
7	2017	76.4	11	7	5	88	7	37	12.37	26.22
7	2018	81	4	2	3	90	7	38	9.84	23.96
8	2014	70	23	4	46	60	7	9	15.49	29.98
8	2015	73	-6	3	45	66	7	10	17.15	27.5
8	2016	74.6	5	2	32	78	7	11	17.46	28.08
8	2017	79.2	6	1	1	81	7	12	12.37	26.22
8	2018	74.1	-74	13	-13	80	7	13	9.84	23.96
9	2014	47.6	39	17	49	68	8	1	15.49	29.98
9	2015	50.3	9	3	43	71	8	2	17.15	27.5
9	2016	49	22	10	61	62	8	3	17.46	28.08
9	2017	46.4	8	4	-10	58	8	4	12.37	26.22
9	2018	44	5	6	2	43	8	5	9.84	23.96
10	2014	55.9	4	2	1	61	12	54	15.49	29.98
10	2015	60.9	12	5	20	71	12	55	17.15	27.5
10	2016	55.1	5	7	15	62	12	56	17.46	28.08
10	2017	69.1	10	5	1	65	12	57	12.37	26.22
10	2018	50.2	29	17	10	58	12	58	9.84	23.96
11	2014	44.6	2	21	25	34	9	31	15.49	29.98
11	2015	44.2	21	22.9	29	77	9	32	17.15	27.5
11	2016	46.3	15	20	31	79	9	33	17.46	28.08
11	2017	30.6	13	21	8	87	9	34	12.37	26.22
11	2018	43	7	13	-5	89	9	35	9.84	23.96
12	2014	57	6	6	24	91	7	8	15.49	29.98
12	2015	62.4	17	4	36	92	7	9	17.15	27.5
12	2016	58.8	19	11	48	62	7	10	17.46	28.08
12	2017	55	21	11	15	61	7	11	12.37	26.22
12	2018	63	20	8	12	71.2	7	12	9.84	23.96
13	2014	35.6	25	13	15	56	6	8	15.49	29.98
13	2015	36.8	12	2.2	19	83	6	9	17.15	27.5
13	2016	36	12	4	36	68	6	10	17.46	28.08
13	2017	37.2	18	6	10	71.2	6	11	12.37	26.22
13	2018	43.6	5	4	31	76.3	6	12	9.84	23.96
14	2014	54.1	51	3	26	87	9	16	15.49	29.98
14	2015	56.4	39	10	25	93	9	17	17.15	27.5
14	2016	60.8	32	3	16	93	9	18	17.46	28.08
14	2017	70.2	43	2	25	96	9	19	12.37	26.22
14	2018	57.3	39	5	24	95	9	20	9.84	23.96

15	2014	92.9	22	4	22	93	12	57	15.49	29.98
15	2015	93	18	3	10	98	12	58	17.15	27.5
15	2016	93.8	4	3	5	98	12	59	17.46	28.08
15	2017	93.1	23	3	24	98	12	60	12.37	26.22
15	2018	93.7	9	2	11	95	12	61	9.84	23.96
16	2014	81.3	-60	2	7	80	7	3	15.49	29.98
16	2015	82.4	-75	1	38	92	7	4	17.15	27.5
16	2016	81.3	6	2	48	90	7	5	17.46	28.08
16	2017	93.4	-18	2	65	95	7	6	12.37	26.22
16	2018	90.7	-31	3	21	92	7	7	9.84	23.96
17	2014	97.7	-34	2	7	93	7	21	15.49	29.98
17	2015	98.3	-4	2	3	97	7	22	17.15	27.5
17	2016	97.6	3	4	28	84	7	23	17.46	28.08
17	2017	98.6	5	3	30	78	7	24	12.37	26.22
17	2018	97.9	6	7	15	80	7	25	9.84	23.96
18	2014	96.8	-15	8	113	35	7	2	15.49	29.98
18	2015	96.7	-23	8	73	89	7	3	17.15	27.5
18	2016	96.8	-8	7	64	90	7	4	17.46	28.08
18	2017	96.7	-5	3	53	92	7	5	12.37	26.22
18	2018	96.6	-1	2	69	94	7	6	9.84	23.96
19	2014	85	0	6	186	65	6	36	15.49	29.98
19	2015	87	1	5	78	94	6	37	17.15	27.5
19	2016	79.7	2	6	29	92	6	38	17.46	28.08
19	2017	73	5	8	33	90	6	39	12.37	26.22
19	2018	69	1	8.9	34	89	6	40	9.84	23.96
20	2014	80.4	25	0.75	24	90	9	54	15.49	29.98
20	2015	60.9	26	4	15	86	9	55	17.15	27.5
20	2016	67.2	6	1.2	18	92	9	56	17.46	28.08
20	2017	69.1	9	1	43	93	9	57	12.37	26.22
20	2018	50.2	2	1.3	37	90	9	58	9.84	23.96
21	2014	44.6	18	5	28	85	9	36	15.49	29.98
21	2015	44.2	12	3	21	96	9	37	17.15	27.5
21	2016	46.3	16	1.34	28	94	9	38	17.46	28.08
21	2017	30.6	16	2.1	43	92	9	39	12.37	26.22
21	2018	30	21	1.2	37	91	9	40	9.84	23.96
22	2014	82	2	4	36	53	6	10	15.49	29.98
22	2015	83	2	2	10	46	6	11	17.15	27.5
22	2016	87	2.4	1	23	73	6	12	17.46	28.08
22	2017	89	24	1	34	64	6	13	12.37	26.22
22	2018	85.7	4	1.8	7	75	6	14	9.84	23.96
23	2014	65.4	23	2.1	3	72	9	15	15.49	29.98
23	2015	57	32	3	23	80	9	16	17.15	27.5
23	2016	56	32	10	21	83.2	9	17	17.46	28.08
23	2017	45	30	12	4	6	9	18	12.37	26.22

23	2018	68	8	2	42	84	9	19	9.84	23.96
24	2014	85	3	1.4	53	92	7	5	15.49	29.98
24	2015	80	2	6.4	69	94	7	6	17.15	27.5
24	2016	85	1	1.4	32	65	6	36	17.46	28.08
24	2017	87	1	1	78	82	6	37	12.37	26.22
24	2018	78	2	5	76	83	5	41	9.84	23.96