USMANU DANFODIYO UNIVERSITY, SOKOTO
(POSTGRADUATE SCHOOL)

ANALYSIS OF THE DETERMINANTS OF PROFITABILITY OF INSURANCE COMPANIES IN NIGERIA

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DEDICATION

This Dissertation is dedicated to my beloved family for their prayers, support and encouragementsthroughout this Programme.

CERTIFICATION

This dissertation titled "Analysis of the Determinants of Profitability of Insurance Companies in Nigeria" by WADA,Ibrahim (15210902028) has met the requirements for the award of the Degree of Masterof Science in Accounting and Finance of the UsmanuDanfodiyo University, Sokoto, Nigeria and is approved for its contribution to knowledge.

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ABSTRACT

This study examine the effects of company's internal determinants (company size, leverage, loss ratio, premium growth and capital adequacy) on companies' profitability as measured by return on assets (ROA), return on equity (ROE) and net profit margin (NPM). Profitability is dependent variable while company size, leverage, loss ratio, premium growth and capital adequacyare independent variables. The sample of22 insurance companies listed onNSE forperiod of (2008-2016) were used, secondary datawasobtained from the financial statements of insurance companies.Descriptive statistics was used.From the regressionresults the study discovered that company size made unique significant contribution in the prediction of ROA. On the other, the only variables that made unique significant contributions in the prediction of ROE werecompany size,leverage and premium growth, lastly company size and loss ratio made significant contribution in the prediction of NPM. Therefore, the study recommends that Insurance companies should limit their debt to finance their assets. Rather, the companies should use their little profits generated to finance their assets. However, in cases where debts remain last alternative, such debt should attract little interest and should be paid within a short period of time.

CHAPTER ONE
INTRODUCTION

1.1 Background to the Study

Insurance companies provide specialized financial services for the growth and development of every economy. Such specialized financial services range from the underwriting of risks inherent in economic activities and the mobilization of large amounts of funds through premiums for long term investments(Mwangi & Murigu, 2015).Any business domain without insurance is unsustainable since risky business may not have the capacity to retain all kinds of risks in this ever changing and uncertain global economy (Ahmed, Ahmed, & Ahmed, 2010). Insurance companies' ability to continue to cover risks in the economy hinges on their capacity to create profit or value for their shareholders. Indeed, a well-developed and evolving insurance industry is a boon for national economic development as it provides long-term funds for infrastructural development of every economy (Olaosebikan, 2013).

Insurance is a service that provides benefit upon the occurrence of a loss. Delivery, usually financial, may be for an individual, association or business in exchange for perceived contributions or premiums. Therefore, insurance is an economic sector which includes the design, production and marketing of this type of service. Insurance is said to be critical to a well-functioning economy (Pritchett, Schmit, Oerpinghaus&Athearn, 1996)hence, the importance and the roles played by insurance business cannot be overlooked, especially in Nigeria. One of the main reasons for this is the nature of the Country. For instance, in Nigeria, there is high death rate, high theft rateand frequent occurrence of accidents of all kinds (Akinbola 2010). By taking up insurance policies, individuals and business entities (small and large corporations) can have reliable cover for their risk and be secured.

Insurance sector is a vital part of the entire financial system. Apart from commercial banks, insurance companies contribute significantly to financial intermediation of the economy, as such, their success means the success of the economy and their failure means failure to the economy (Ansah-Adu, Andoh, & Abor, 2012 andAgiobenebo&Ezirim, 2002). Insurance plays a significant role in any country's economic growth and development and offers financial protection to individuals or companies against monetary losses suffered from unforeseen circumstances, (Kihara, 2012).It promotes financial and social stability; mobilizes and channels savings; supports trade, commerce and entrepreneurial activity and improves the quality of the lives of individuals and the overall wellbeing in a country (Malik 2011). This is because businesses are characterized by risks and uncertainties and insurance has evolved as a way of providing security against these risks and uncertainties. To achieve this role, insurance companies are expected to be financially sound and strong enough through profitability in their operations.

The concept behind insurance is that a group of people exposed to similar risks come together and make contributions towards formation of a pool of funds (Wagstaff&Lindelow, 2008). In case a person actually suffers a loss on account of such risk, he is compensated out of the same pool of funds. Therefore, contribution to the pool is made by a group of people sharing common risks and collected by the insurance companies in the form of premiums. Furthermore, risk has the element of uncertainty.

The nature of insurance business has to do with trust between insurance companies and their clients. Any insurance business that wishes to survive must not throw away ethics in the conduct of its business. Henry (2003) argues that, when a business behaves ethically other business associates are persuaded to behave ethically as well. If

responsibilities to customers, employees and suppliers of a company are met with care, it earns business an award of honesty, loyalty, quality and productivity. Henry (2003) cited an example that employees who are treated ethically by their employers are more likely to behave ethically themselves in their dealings with their customers and business associates.

According to National Insurance Commission(NAICOM), insurance business in Nigeria is not performing well, because it suffers from cash flow problem, and struggles to settle their claims and also lacks investible funds (Daniel, 2015). Because of its poor performance, investors are chased away. No investor is ready to venture into an investment that will not be viable. Understanding the determinants that can have an impact on the profitability of insurers is essential not only to the insurance managers and supervisors but also to policymakers and regulators. Therefore, the purpose of this study is to clearly analyse the determinants of profitability of insurance companies in Nigeria.

During the period of 2006-2015 the annual financial reports of insurance companies in Nigeria showed large fluctuations in profits (Daniel, 2015). This variation of profits among insurance companies suggests that company-specific determinants such as Company size, Leverage, Loss ratio, Premium growth andCapital adequacy among others,play significant role in determining insurance companies` profitability. Identifying these determinants can help in facilitating the design of policies that may improve the profitability of the insurance sector. Hence, the determinants of insurers' profitability have attracted the interest of investors, researchers, financial market analysts and insurance regulators. It is therefore important to identify these determinants

and how they help insurance companies to take measures that will increase their profitability.

TheNAICOM, which is the regulatory body of insurancecompanies in Nigeria, needs tointensify its supervision, field visits, and to equally adopt a risk-based assessment of insurers' activities. All of these regulatory measures are to ensure that the insurance companies are in sound condition. Profitability of insurance companies is influenced by both internal and external factors. Whereas internal factors focus on an insurer's-specific characteristics, the external factors concern both industry features and macroeconomic variables.

The term profit can take either economic meaning or be viewed as an accounting concept which shows the excess of income over expenditure earned during a specified period of time. On one hand, profit is one of the main reasons for the continued existence of every business organization. On the other, profit is expected so as to meet the required return by owners and other outsiders.Hampton (2009) clarified profitability ratio as a class of financial metrics that is used to assess a business's ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. Accordingly, the term 'profitability' is a relative measure where profit is expressed as a ratio; generally as a percentage. Profitability depicts the relationship of the absolute amount of profit with various other factors.

Profitability also shows the association between the absolute amount of income that indicates the capability of the insurance to advance loans to its customers and enhance its profit. In today's competitive environment, profitability is a key factor for the smooth running of the business and has a significant effect on performance of the

insurance and economic development as well (Tariq, Muhammad, Haseeb, Inam andImran 2014). Profitability is also crucial for the insurance industry to maintain its ongoing activities and for shareholders to generate fair returns (Ponce, 2011). It is one of main aspects of financial reporting for many firms (Farah & Nina, 2016). It is also vital to the firm's manager as well as the owners and other stakeholders that are involved or associated to the firm since profitability gives a clear indication of business performance. Profitability ratios are normally used to measure earnings generated by a firm for a certain period of time based on the firm's sales level, capital employed, assets and earnings per share (EPS). Profitability ratios are also used to measure the company's earning capacity and is considered as a company's growth and success indicator (Majed, Said &Firas, 2012).

In Nigeria, the business of insurance plays significant intermediary roles in terms of risk transferring, private investment enhancement and ensuring various development related projects. For insurance companies to be sustainable in the competitive business environment, earning profit is a pre-requisite. In the absence of profit, insurers cannot attract outside capital to meet their objectives. The profitability of insurance companies can be affected by a number of determinants such as, company size,leverage, loss ratio, premium growth and capital adequacy among others. Some of these determinants might have positive impact on the insurers' profitability while others could have a negative effect. Furthermore, all of these determinants that affect insurance company's profitability could be under the control of the insurers' management (internal factors) (Majed, Said &Firas, 2012).

1.2   Statement of the Research Problem

Profitability is one of the paramount objectives offinancial management because one goal of financial management is to maximize the shareholders' wealth, and profitability is a very important determinant of performance(Malik2011). Although several Studies (Hamdan, 2008;Hifza, 2011;Charumathi, 2012;Sumaira and Amjad, 2013; Eric, Samuel and Victor, 2013;Khan, Bilal and Tufail,2013; Berhe and Kaur, 2017), have empirically investigated the determinants of profitability of insurance companies, however, their studies arrived at different conclusions. This suggests that findings on the determinants of profitability of insurance companies revealed inconsistencies and therefore require further investigation so as to have a clear understanding of the real determinants of profitability. For instance, some of the studied determinants of profitability include age, size, volume of capital, loss ratio, leverage, liquidity, ownership structure, interest rate, market share and inflation rate, among others (see Hifza 2011; Malik 2011; Charumathi 2012;;Sumaira and Amjad 2013 andBerhe& Kaur 2017) and are grouped as either internal factors or external factors as argued by Berhe and Kaur, (2017).

Review of empirical studies on the determinants of profitability of insurance companies revealed that while some variables have significant positive relationship with profitability, others have significant negative relationship. Relatedly, other variables revealed no relationship with profitability. For example, the recent study of Berhe and Kaur (2017) revealed that size, liquidity, capital adequacy and growth rate of GDP are the major determinants that significantly affect profitability of insurance companies. On the other hand, determinants like loss ratio, leverage,inflation rateand market share were found to have insignificant effect on profitability. Similarly, the study of Sumairaand Amjad (2013) found out that leverage, earnings volatility, size and Age of companies

were the significant determinants of profitability, whereas, liquidity and growth opportunity were insignificant determinants.

Moreover, reviews of related literature on the determinants of profitability of insurance companies particularly in Nigeria arelimited.Therefore, even the few studies conductedhave several limitations. For instance, theconcentration of such studies was largely on micro-life insurance (See Olajumoke 2012; Olaosebikan 2013).They did not look at the whole insurance services provided by the Nigerian insurance industry. Thus,little effort was made to justify the determinants of profitability of insurance companies in Nigeria.Therefore, to the best of researcher's knowledge, the determinants of profitability of insurance companies in Nigeria have not been adequately investigated.

furthermore,the lack of comprehensive empirical studies on the determinants of profitability of insurance companies in Nigeria on one hand, and the inconsistencies of the findings among difference studiesaround the globe on the other, have encouraged the researcher to make possible contribution in this aspect.Also, the results of the studies conducted in some developed and developing countries may not be suitable to insurance companies in Nigeria because the environment in which the insurance companies operate differs in terms of regulations, culture and supervision. Therefore, outright generalization of these results might be difficult.

1.3   Research Questions

In the light of the above problem, the study seeks to specifically address the following questions:

i.   How do the determinants of profitability(company size, leverage, loss ratio, premium growth and capital adequacy) affect ROA of insurance companies in Nigeria?

ii.   How do the determinants of profitability(company size, leverage, loss ratio, premium growth and capital adequacy) affect ROE of insurance companies in Nigeria?

iii.   How do the determinants of profitability(company size, leverage, loss ratio, premium growth and capital adequacy) affect NPM of insurance companies in Nigeria?

1.4Objectives of the Study

This research work is carried out to achieve the following objectives:

i.   To determine the effect of determinants of profitability(company size, leverage, loss ratio, premium growth and capital adequacy) on ROA of insurance companies in Nigeria.

ii.   To determine the effect of determinants of profitability(company size, leverage, loss ratio, premium growth and capital adequacy) on ROE of insurance companies in Nigeria.

iii.   To determine the effect of determinants of profitability(company size, leverage, loss ratio, premium growth and capital adequacy) on NPM of insurance companies in Nigeria.

1.5   Research Hypotheses

This research work is based on the following hypotheses formulated for testing:

H$_o$1: There is no significant relationship betweendeterminantsofprofitability (company size, leverage, loss ratio, premium growth and capital adequacy) and ROA of insurance companies in Nigeria.

H$_o$2:   There is no significant relationship betweendeterminantsofprofitability (company size, leverage, loss ratio, premium growth and capital adequacy) and ROE of insurance companies in Nigeria.

H$_o$3: There is no significant relationship betweendeterminantsofprofitability (company size, leverage, loss ratio, premium growth and capital adequacy) and NPM of insurance companies in Nigeria.

1.6Scope and Limitationsof the Study

This study focuses on insurance companies listed on the Nigerian Stock Exchange (NSE). The listed insurance companies were chosen because of the fact that their financial reports and accounts over the period of the study (2008-2016) were published under strict supervision ofNAICOM, NSE & SEC. In addition, the financial report which is among the sources of data collection is available in the Nigerian Stock Exchange published fact book. Hence, given the above background in our opinion, the listed insurance companies in Nigeria are representative of other insurance companies that were not listed on the floor of Nigerian Stock Exchange.

Therefore, this study covers the period after the regulation of insurance business in Nigeria spanning from 2008 to 2016. It is believed that the choice of this periodhas far

reaching implications on the studybecause of the fact that the period of the last reform (recapitalization) introduced by the Federal Government of Nigeria in conjunction with NAICOM ended in 2007. Therefore, the choice of the period is justified. Furthermore, the study is based on internal determinants(Company size, Leverage, Loss ratio, Premium growth and Capital adequacy)because they can be easily measured by using data generated from financial statement of insurance companies, and they are controllable determinants that are within the control of management of listed insurance companies in Nigeria.

1.7 Significance of the Study

Insurance companies in Nigeria have undergone several reforms and transformations in order to enhance theiroperations. But available statistics revealed that the performance of the insurance companies is still below average (NAICOM, 2015). Government will be interested in identifying companies that operate successfully or failed to take the necessary measures to avoid crisis of bankruptcy in these companies. Investors interested in such studies in order to protect their investment, and direct it to the best investment. Insured are interested in knowing the ability of insurance companies to transfer risks based on the indicators of success of the companies. It is believed that this study would be informative to stakeholders and prospective investors by clearly revealing the current position of the performance of insurance companies in Nigeria. In addition, stakeholders of the insurance companies in Nigeria would be guided by this information to design a plan that will be used to improve upon the short-comings from reforms and other regulations in insurance business in Nigeria.

The results generated from this study would provide insighton qualitative and quantitative measures to be used in selecting the real determinants of profitability of

insurance companies in Nigeria. This in turn, would allow managers, owners, and outside investors to be better informed about the determinants of profitability of insurance companies and how stakeholders may use these determinants to allocate their resources so that the companies in this sector could become more profitable when alternatives are available to them. This study will benefit students and other researchers that might venture into future researches in this area. The study also provides reference material for educational purpose.

1.8   Scheme of Chapters

This study is structured and presented in five chapters. chapter one covers the background to the study; where an introduction into the study was given, the statement of the research problem was also presented, the research questions were raised along with the objectives that the study intends to achieve, statement of the research hypotheses that the study intends to test scope and limitations of the study as well as significance of the study are also presented. Chapter two reviews some literatures related to the study. This is a review of books, papers, publications of some scholars on the topic or similar to that in relation to the conceptual framework of the study, theoretical framework of the study and most importantly reviews of relevant and related empirical studies on the subject matter. Chapter three covers the methodology employed for this study, it discussed the research design, thepopulation of the study, also presented was the variables used in the study and their proxies as well as model adopted for the analyses as well as justification of using the model.Also discussed was diagnostic test and panel data econometrics which include unit root test as well as panel cointegration test.

Chapter four discusses descriptive statistics; correlation matrix and diagnostic test.Also discussed were regression modelling, hypotheses testing, summary of the results and lastly the chapter contains the discussions of findings.Chapter five presents a summary of the work as well as findings, conclusions, recommendations, implications of the studyand lastly the chapter suggested areas for further research.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter deals with a review of some related literatures available on the subject matter. It also provides necessary foundation for building the blocks of this study. This chapter presents the concepts of insurance and profitability.It also provides a review on thedeterminants of insurance companies' profitability, empirical studies and theoretical framework of the study. The study aims atensuring that this review fosters a better understanding of the determinants of profitabilityof insurance companies in Nigeria.

2.2Conceptual Framework of the Study

A conceptual framework portrays a relation that exists between study variables. The study seeks to identify determinants of insurance companies' profitability hence independent variables would include company size, leverage, loss ratio, premium growth and capital adequacy. The dependent variables are Return on Assets (ROA), Return on Equity (ROE) as well as Net Profit Margin (NPM) as proxies of profitability.

2.2.1Concept of Insurance

Scholars all over the world have attempted to define insurance based on their opinions.Agbaje (2005) defined insurance as the business of pooling resources together to pay compensation to the insured or assured (i.e. the policy holder) on the happening of a specified event in return for a periodic consideration known as premium. Note that, an insurance contract is usually evidenced by a document called the insurance policy which is usually signed by the insurer or assurer or his agent. Insurance businesses help buyers organize their risk. In exchange for a constant stream of premiums, insurance businesses offer to pay conditioners an addition of cash upon the incident of a

predetermined event, such asaccident, natural disaster and mishaps among others. More aptly put, insurance businesses conceive worth by pooling and redistributing diverse kinds of risk. It does this by collecting liabilities (i.e. premiums) from every person or company that it insures and paying them out to the few that really need them. Insurance businesses theoretically make cash in two ways: Firstly, by ascribing enough premiums to cover the expected pay-outs that they will have to cover over the life of the principal. Secondly, by earning investment comes back (the float) utilizing the collected premiums.

Linus (2001) defined insurance as a mechanism for reducing the uncertainty of an individual or organization through the exchange or transfer of specific risks to the insurer who offers a form of economic restoration, albeit partly, to the insured for losses incurred. Insurance is a financial device for transferring or shifting risk from an individual or entity to a large group with similar risk. This is accomplished through a contract, the insurance policy, with an insurance company. Under this arrangement, the individual, along with other insured, pays premium to the insurance company and the insurance company agrees to pay an amount of money (indemnity) to the individual or company, if the events described in the policy occur. Insurance is used to indemnify, or restore, a policyholder to a pre-loss condition. The individual accepts a known cost, the premium, in exchange for payment of a large, uncertain financial loss. The insurance company combines, or pools, a large number of similar units and thus can predict losses within reasonable limit.

Furthermore, Kunreuther (2010) opined that, insurance is an economic institution that allows the transfer of financial risk from an individual or company to a pooled group of risks by means of a two-party contract. The insured party obtains a specified amount of

coverage against an uncertain event for a smaller but certain payment. Similarly, Igbojekwe (2006) defined insurance as the indemnification of a purchaser of an insurance contract against losses which may arise from the occurrence of specified type of events after the payment of a consideration called premium. Insurance also entails a contract between insurer/assurer and insured/assured whereby one party agrees to undertake the risk of another in exchange for consideration known as premium.

According to the Nigerian Insurance Act 2003, there are two broad categories of insurance business in Nigeria: Life insurance business; and Non-Life (General) insurance business. It is permitted under the Nigerian laws for an insurance company to engage in both. Therefore, general insurance business can be sub-divided into fire, accident, oil and gas, contractors all risks and engineering risks; marine and aviation, credit insurance, bond and suretyship among others. The second category of insurance business in Nigeria is life insurance which comprises individual life business, group life insurance and pension business, health insurance business and annuities (Eze& Victor, 2013). According to Black and Skipper (2000), there are three main types of life insurance policies in actuarial literature including whole life insurance - which provide cover for lifetime; term life insurance - which provides cover for a limited number of years andendowment life insurance - which is a term life insurance with a saving component. In general terms, life insurance is a way of dealing with risk and a saving medium for consumers.

Nwite (2005) defined insurance as contract made by a company or society to provide a guarantee of compensation for loss, damage, illness, death among others in return for regular payment of premiums. Furthermore, the author asserted that insurance is a legal contract between two or more parties who are legally bound to fulfil the promise

contained in the contract deed. Oke (2012) opined that insurance is designed to protect the financial well-being of an individual, company or other entity in the case of unexpected loss. Fatula (2007) explains that the practice of insurance in Nigeria has played a significant role in the development of the economy and managing the risk of household and companies by issuance of insurance policy, mobilizing and transferring funds to the deficit unit for financing real estate investment. Olalekan andTaiwo (2013) posit that insurance is the corner stone of modern day financial services.

2.2.2   Insurance CompaniesReforms in Nigeria

Nigeria's vision 20:2020 as it pertains to the insurance industry posits that, "the vision is to be the insurance industry of choice among emerging markets, noted for high market capacity, transparency, efficiency and safety, to attain the position of one of the 20 largest insurance markets in the world by the year 2020." Though the above statement was made with regards to the vision 20:2020 which Nigeria has, it would not be wrong to state that it is also the target of the Nigerian insurance industry. The industry also aims at introducing bigger, stronger and more capable players into it with enhanced capacity, which would in turn increase healthy and stimulating international competition.

To accomplish these aims and level the challenges facing the insurance industry, certain steps were taken over time. In the words of Fola Daniel, the Commissioner for Insurance, "we have sanitized Nigeria's insurance sector". (See Leadership Newspaper, 18th of February, 2013).This 'sanitation' has taken several forms, the most significant of which are recapitalization and reforms of the legislations. Other areas are however not considered insignificant as they have also played certain roles in making the insurance industry better.Enactments were made which made certain categories of

insurance compulsory. This was a very welcome reform as the categories of insurance which were made compulsory are rather necessary in human endeavours. The Road Traffic Act of 1945 made motor vehicle (third party) insurance compulsory so as to protect innocent victims of road accidents when the defaulters cannot pay for damage suffered.The second compulsory insurance is the insurance of all deposits made in banks by Nigeria Deposit Insurance Corporation (NDIC). This gives depositors a level of safety that they will not lose out totally if the bank becomes insolvent. Presently, NDIC pays all customers a sum of 250,000 Naira in case of insolvency of the bank.

The third compulsory insurance was introduced by the PENCOM (Pension Commission) Act of 2007. It made it compulsory for companies to have pension schemes supported by compulsory life insurance for everyone in employment. These provisions increased the awareness of the people in insurance and its relevance in human activities. Steps were taken to actualize certain provisions of the Insurance Act 2003 to ensure an increased efficacy of the industry. Section 72 of the Insurance Act 2003, for example provides that no one shall transact insurance or reinsurance business with a foreign company in respect of life, asset, interest or other property in Nigerian business which has been classified as domestic insurance unless with a company registered under the Act. The actualization of this section was to bring about the domestication of insurance business in Nigeria.

Section 50 (1) of the Insurance Act 2003 was also fully and rigorously implemented by the 1st of January, 2013 to prevent the non-payment of premium. The implementation of this section was in an attempt to ensure that insurance companies have enough capital to run as required. Thus, the new policy in operation now is "no premium, no cover".The enactment of the Nigerian Content Act of 2010 may also be seen as a reform

of some sort as it positively impacted the insurance industry. It increased the participation of Nigerians in insurance and in getting Nigerian insurance companies to participate fully in insurance. The implementation of the provision of the Act gives Nigerians about 90 per cent of insurable in oil and gas. It ensures that Nigerian companies are given priority in the insurance of things that pertain to the oil and gas sector and it was estimated that it would boost insurance income and yield about $400 million in two years.Agricultural insurance was also introduced to all interested people. The Nigerian Agricultural Insurance Corporation has the right to insure subsidized agricultural risks. However, certain risks in non-subsidized agricultural areas needed insurance, hence this reform. These reforms and provisions had significant effects in the insurance industry and indeed, in the financial sector of the country.

2.2.3 Recapitalization of Insurance Companies in Nigeria

Insurance companies like banks, need capital to function. (Section 9, Banks and Other Financial Institutions Act Cap B3 LFN 2004). Capital is usually what is used to start up an insurance company as it is one of the requirements for registration and is also the life blood of the company. (Section 9 of the Insurance Act provides for the minimum paid up capital for the different types of insurance. See also 2005 NAICOM (National Insurance Commission) Guidelines). The payment of premiums help in the functioning of insurance companies, however, an insurance company without adequate start-up capital will most likely become insolvent in no time.

During the early stages of insurance in Nigeria, there were so many insurance companies. Between 1960 and 1975, for example, there was an increase of insurance companies from 25 to 80. This was basically because governmental regulation in the sector was low and the minimum paid up capital required to start up an insurance

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company was low, making it the business of choice for anyone who could afford the capital. During the above stated period, the minimum capital to register an insurance company was fifty thousand naira (50,000) for general insurance and one hundred thousand naira(100,000) for life insurance.

To sanitize the insurance industry and allow for only capable and reputable insurance companies who were able to carry out insurance as effectively as they ought to, the minimum capital was revised and increased. As at 2003, the minimum capital for insurance companies was one hundred and fifty million naira(150,000,000), two hundred million naira (200,000,000), three hundred and fifty million naira(350,000,000) andthree hundred and fifty million naira(350,000,000) for life insurance, general insurance, composite insurance and reinsurance, respectively. On the 15th of September, 2005, this was increased to strengthen the inefficient and rather weak industry and the companies were given 18 months to implement this reform. The new minimum capital became two billion naira(2,000,000,000) for life insurance, three billion naira(3,000,000,000) for general insurance and ten billion naira(10,000,000,000) for reinsurance. This increase had a very significant effect on the industry. It reduced insurance companies from 103 to about 49 which had to be re-certified in order to operate.

The effect of the recapitalization was to flush out all inefficient and unstable insurance companies and allow for strong players in the industry. Indeed, this goal crystalized, evident from the 49 companies that remained out of the 103 companies. Also, most of the companies including AIICO Insurance, Niger Insurance, Standard Alliance Insurance, etc., had to go to the capital market to raise money while many others

including WAPIC Insurance sold their public offer shares to be among the surviving companies in the insurance industry.

Reform of Legislations As the insurance industry grew, amendments had to be made to the existing laws to accommodate the situation of things at the time. The first legislation in the insurance industry was the Insurance Companies Act of 1961, which required that insurance companies be registered with the Registrar. This Act was however quite ineffective and had a number of lacunas, making it easily breached. In State v Daboh (1977) 5SC 122, there were some irregularities as regards insurance but because the Act did not provide for punishment, the defaulter had to be punished according to criminal law. This Act was amended in 1964 by the Insurance (Miscellaneous Provisions) Act 1964 and by 1976 and by 1991 as amended, the Insurance Decree came into force. The Decree re-enacted the provisions of the Insurance Special Provisions Act of 1988 on insurable interest, assignment and statutory reinstatement on fire insurance. The Insurance Decree of 1991 was replaced by Decree No 2 of 1997.

Presently, the Insurance Act of 2003 is the major legislation that governs the insurance industry in Nigeria, alongside the National Insurance Commission (NAICOM) Act of 1997. Other laws were enacted that aided the insurance industry. The Road Traffic Act of 1945, for example, which came into effect on the 1st of April 1950, made it compulsory for all motor vehicle owners to have Motor Vehicle (third party) insurance. The enactment and amendment of these legislations helped to improve the efficiency of the industry and to enable it fit into societal changes (NAICOM, 2015).

2.2.4   Importance of Insurance Business

Insurance has ever stood and it still stands to be vital in every financial sector either in developed, developing or underdeveloped countries. It serves as a security to both personal and corporate organizations; hence it is important to the society at large. Insurance is meant to hedge out risk completely in our daily lives or shed off a major part of it. Let us imagine a world without insurance. Without the existence of insurance there is no doubt that life will really be tough. Through insurance, all financial sectors in the country are protected. Goovaerts, Vylder and Haezendock (1984) argued that the welfare of a country depends greatly on the solvency of its insurers. According to Pritchett et al.(1996), insurance is very critical to a well-functioning economy. But it is quite unfortunate that the role of insurance is often not recognized in some parts of the world and therefore not given attention.

In one of the papers delivered by Mina in 2007 at a conference in the United Nations on trade development, he said "insurance sector is an infrastructural pillar of the financial services sector and the economy as a whole, thus, it plays a key role in economic development." In most developed and developing countries, the importance of insurance is on the high side, there is no objection to this. However, the performance of insurance business differs from one country to the another due to differences in their cultures, economic systems and national regulations. According to Fukuyama (1995), the economic benefits gotten from insurance are a function of the cultural context of an economy. He went further to explain that insurance will contribute positively to an economy if the activities in the economy are seen as risky and are majorly managed through insurance contracts rather than other risk control means.

A study on quality of life by Moller (2004) cited by Tajudeen, Ayantunji and Dallah (2009) revealed that income and social security are major indicators of quality of life. The research emphasized on the significance of insurance on human life. In the 1990s the assets of insurance companies increased faster than that of banks. It stabilizes the financial strength of firms and households (Breuel, 1996). Since insurance services transfer and pool risk, it therefore gives companies and individuals the boldness to specialize, create wealth and undertake projects with higher returns and very high risk that they would not have considered on a neutral ground (Mina, 2007).

With an insurance cover, the continuity of a business is guaranteed when losses occur since insurance restores the insured to the former position he was before the loss occurred. Insurance provides valuable support to entrepreneurial, commerce and trade activities (Mina, 2007). This is due to the great dependence of economic activities such as accounting, banking, legal, medical, aviation, manufacturing, shipping, consultancy services on risk transfer. Insurance services offer them the boldness and courage to undertake investment appraised to be viable as they have insurance as backups should the investment turns out to be a flop. Thus, insurance helps them remove the uncertainties in their business and carry their risk. In other words, insurance helps to safeguard their capital and gives them the go ahead to use it as may seem best to them.

According to Mina (2007) another benefit that can be derived from insurance business is that it can help an economy reduce its total risk to the barest minimum. He said this can be achieved through portfolio diversification and provision of incentives to enable them manages their risk in a more effective way and also to enhance risk mitigation activities. Through individual health, life insurance, pension fund and workmen compensation, quality of life of an individual is improved and social stability is

increased (Mina, 2007). Insurance allows households to receive more complete compensation for their loss than they could have provided for on their own. It reduces vulnerability "as households replace the uncertain prospect of large losses with the certainty of making small, regular premium payments" (Brown & Churchill, 2000). Since savings is recognized as a means of providing for bad consequences of the future, a suitable way to achieve this is through taking of an insurance policy. Insurance stands as a source of credit by standing as a guarantor for its customers. Insurance makes provision for a policy that can repay the assured's creditor in the event of death or breach of contract by the assured. If not for insurance, financial institutions would not have been very confident to give out loans and credit facilities to their customers.

Chances of loss that occur through accidents, deaths, thefts and diseases can be reduced through insurance by spending a lot of money with a view to investigating the causes of loss and suggesting probable solutions for their prevention. Insurance companies support different medical programs in order to make the public to be more safety conscious. Through the provisions made by life insurance such as health insurance programs and personal retirement planning, the pressure on government budget is reduced(Mina, 2007). This is achieved by designinginsurance policy in such a way that it accumulates the premium paid by the insured on a yearly basis in a fund.This accumulated premium then earns interest. Depending on the structure of the policy the insured can continue to earn income till death. In this way, insurance helps to reduce the demand on government health program and social security.

Insurance helps to mobilize savings from household sectors to public and corporate sectors (Mina, 2007). He explained that the savings accumulated can help in forming huge capital in a country. He also said this is due to the longer maturity of life insurer's

liability compared to bank's liabilities; hence the performance of life insurers can be outstanding in the bond and equity market. Insurance business also helps in creating employment opportunities in a country. It offers direct employment opportunities to carry out business activities and self-employment; insurance agents are typical examples of this. This helps in the improvement and progress of social condition. In developed countries, a single insurance company provides employment for 120,000 people (Daniel cited in The Report: Nigeria 2010).

It cannot be overemphasized that insurance play a vital role in individual lives, business settings and it also helps government to function well. We are in an unstable world;full of uncertainties. But insurance can help to cover these gaps. At this juncture,it can be asserted that insurance is the biggest part of financial sector with the biggest body that carries individual and corporate risks without either been tired or injured.

2.2.5   Impact of Insurance on Economic Growth

By providing protection, insurance companies could affect economic growth through the channels of marginal productivity of capital, technological innovations and savings rate. Insurance companies indemnify those who suffer losses and stabilize the financial position of individuals and firms with possibility of transfer of different kinds of risks to themselves. Risk adverse economic units are more induced to buy goods and services, especially those of higher value. In this way, insurance sustains demands or consumptions for goods and services which encourage production and employment which result in multiplier effect on economic growth. Again, firms exposed to various risks of their liability, property, illness and disability of their employees and life of key employees, have the possibility of managing those risks by transferring them to insurance companies. This allows firms to concentrate their attention and resources on

their core businesses which can lead to willingness and ability to take real investment which results in higher rate of economic growth.

Without mechanisms for pooling and transferring risks which insurance companies provide, part of the economic activities would not take place and positive effects on social welfare will fail. In other words, by creating an environment of greater security, insurance fosters investment and innovation for economic growth. Insurance increases marginal productivity of capital also in a way that it makes no need for high liquid contingency funds of firms which results in making more funds available for financing high-return projects. Without insurance coverage, large contingency funds would be needed to protect firms against risks. Increasing availability of funds could result from somekind of insurance products by which insurance companies provide protection from credit riskto other financial intermediation. In that way, financial intermediaries are more willing to lend funds for financing real investments which encourage economic growth.

Furthermore, new demographic situation of prolongation of life expectancy, an increase in the number of elderly people and a falling birth rate and expectation of high level of healthcare and pension exerts pressure on social security system and could have negative effect on economic growth. But private insurers could give their contribution in solving the problem of social security system. They provide protection from the financial consequence of illness and injury, unemployment and retirement. Thus, insurance products such as life, health and payment protection insurance can substitute for government security programs. The function of providing insurance coverage could affect economic growth through saving rate channel in a mixed way. On one side, insurance protection contributes to greater security which makes individuals and firms

less careful. As a consequence, they could lower their precautionary savings. On the other side, by offering various life insurance products that combine risk protection and saving benefits, insurance companies encourage long-term savings.

2.2.6 Insurance Companies' Performance

Rebao, chen and Wong (2004) stated in their investigation that "higher profits provide both the means for greater availability of finance from retained profits or from the capital market and the incentive (a high rate of return) for new investment". Therefore, it can be understood from the above explanation that insurance companies have double responsibility; in one way they are required to be profitable so as to have high rate of return for new investment and the other, insurance companies need to be profitable in order to be solvent enough to make other industries in the economy as they were before even after risk occurred. According to Malik (2011) insurance plays a crucial role in fostering commercial and infrastructural businesses.

From the above perspective, insurance promotes financial and social stability; mobilizes and channels savings; supports trade, commerce and entrepreneurial activities and improves the quality of the lives of individuals and the overall wellbeing in a country. Koller (2011) in his investigation argued that, insurance companies play the role of transferring risk andchannelling funds from one unit to the other (financial intermediation) such as general insurance companies and life insurance companies respectively. This implies that insurance companies help the economy of a country one way by transferring and sharing of risk which can create confidence over the occurrences of uncertain events and in another way they like other financial institutions play the role of financial intermediation so as to channel financial resources from one to the other.

Therefore, insurance companies can be divided into two broad categories based on their roles to the economy; the general insurance companies and life insurance companies. For instance, Rebao et al., (2004) summarized firm specific factors affecting property/liability which is general insurers and life/health insurance profitability separately that again provide valuable guidelines for insurers financial health. This is because life/health insurance companies are different from property/liability insurers in terms of operation, investment activities, vulnerability and duration of liabilities. Lifeinsurers are said to function as financial intermediaries while general insurers function as risk takers (Rebao et al., 2004).

2.2.7 Classification of Insurance

(i) Life Insurance

According to (Tyagi&Tyagi,(2007), a contract of life insurance is a contract whereby the insurer undertakes to pay a certain sum either on the death of the insured or on the expiry of a certain number of years. In return, the insured agrees to pay an amount as premium either in a lump sum or in periodical instalments, annually or half-yearly. The risk insured against in this case is certain to happen. Hence, life insurance is also referred to as life assurance. The written form of contract is known as life insurance policy. It provides for the payment of a fixed sum to the insured either on a fixed date or on the happening of an event which is certain. Businessmen can provide for life insurance of all their employees by way of group insurance.

It also developsloyalty among employees and can be used as a security for raising loans. There are two basic types of life assurance policies (a) Whole-life policy, and (b) EndowmentPolicy. A whole life policy runs for the whole life of the insured and premium is payable all along.The sum assured becomes due for payment to the heirs of

the insured only after his death. An endowment policy on the other hand, runs for a limited period or up to a certain age of theinsured. The sum assured becomes due for payment at the end of the specified period or on the death of the insured, if it occurs earlier.

(ii) Fire Insurance

A contract of fire insurance is a contract whereby the insurer, on payment of premium by the insured, undertakes to compensate the insured for the loss or damage suffered by reason of certain defined subject matter being damaged or destroyed by fire (Tyagi, &Tyagi,(2007). It is a contract of indemnity, that is, the insured cannot claim anything more than the value of property lost or damaged by fireor the amount of policy, whichever is lower. The claim for loss by fire is payable subject to two conditions, viz; (a) there must have been actual fire; and (b) fire must have been accidental, not intentional; the cause of fire being immaterial. The basic principle applied with regard to claim isthe principle of indemnity. The insured is entitled to be compensated for the amount of actual loss suffered subject to a maximum amount for which he had taken the policy. He cannot make a profit through insurance. For example, if a person takes a fire insurance policy of ₦200,000on certain goods, out of these, goods worth ₦150,000 are destroyed by fire, the insured can only claim an amount to the extent of loss i.e., ₦150,000 (and not ₦200, 000) for thedamage from the insurance company.

(iii) Marine Insurance

Marine insurance is an agreement (contract) by which the insurance company (also known as underwriter) agrees to indemnify the owner of a ship or cargo against risks, which are incidental to marine adventures. It also includes insurance of the risk of loss of freight due on the cargo. Marine insurance covers the risk of loss of cargo by storm

known as cargo insurance. The owner of the ship may insure it against loss on account of perils of the sea (Tyagi, &Tyagi,(2007). When the ship is the subject matter of insurance, it is known as hull insurance. Further, where freight is payable by the owner of cargo on safe delivery at the port of destination, the shipping company may insure the risk of loss of freight if the cargo is damaged or lost. Such a marine insurance is known as freight insurance. All marine insurance contracts are contracts of indemnity.

(iv) OtherTypes of Insurance

Apart from life, fire and marine insurance, general insurance companies can insure a variety ofother risks through different policies. Some of these risks and the different policies are outlinedbelow:

(a)Motor vehicles Insurance: Insurance of all types of motor vehicles- passenger cars,vans, commercial vehicles, motor cycles, scooters, etc., covers the risks of damage of thevehicle by accident or loss by theft, as also risks of liability arising out of injury or death ofthird party involved in an accident. Third party risk insurance is compulsory under theMotor Vehicles Act (Tyagi, &Tyagi,(2007),.

(b)Burglary Insurance: According to (Tyagi, &Tyagi,(2007), under this insurance the insurance company undertakes to indemnifythe insured against losses from burglary i.e., loss of moveable goods by robbery and theftby breaking the house.

(c)Fidelity Insurance: As a protection against the risks of loss on account of embezzlementor defalcation of cash or misappropriation of goods by employees, businessmen may getpolicies issued covering the risks of loss on account of fraud and dishonesty on the part ofemployees handling cash or in charge of stores. This is called

fidelity insurance policy (Tyagi, &Tyagi,(2007). Theemployees may also be required to sign a fidelity guarantee Bond.

2.2.8 Basic Principles of Insurance

Insurance is said to be based on common law of England which are regarded as fundamental principles and elements of insurance (Tyagi, &Tyagi,(2007), according to him, these principles are common tall classes of insurance and they are classified into three; economic, actuarial and legal. Economic principle is based on the principle of sharing risk and loss, actuarial principle says that premium should be calculated on scientific basis and the legal principles are the general principles that everyone in the business of insurance must understand and follow (Tyagi, &Tyagi, 2007).The following principles are referred to as the legal principles of insurance:

(i) Utmost Good Faith

All the contracts of insurance depend on utmost good faith, that is, "uberrimaefidei". The two parties involved in the contract, the insurer and the insured are required to disclose all material facts for the betterment of each other. Since insurance business is all about transfer of risk from one party to the other, it therefore becomes mandatory for the parties involved to tell nothing but the whole truth about the subject matter of the insurance. This is very important for the underwriter to know the size of the risk and how much he should charge for carrying the risk. Hence any wrong information or omission of any important fact nullifies the contract irrespective of whether it was intentional or not (Tyagi, &Tyagi,2007), However,Tyagi, &Tyagi,(2007), alsoopined that some facts are not necessary for disclosure in an insurance contract such as: (i) Any fact that reduces the risk or that comes to the knowledge of the insured after taking up the contract or (ii) Any fact that is known or assumed to be known by the insurer or(iii)

Any fact related to the law of a country or to the nature of the public knowledge or (iii) Any fact as to which information is waived by the insurer.

(ii)   Subrogation Right

This is only applicable in contract of indemnity such as fire and marine. The doctrine of subrogation is a principle that builds on equity. The principle says, when an insurer pays for an insured's total loss in the event of it, then the insurer takes up all the legal right and remedies that the insured has on the third party in respect of the loss he has been compensated for.

This principle helps to prevent the insured from being indemnified from two sources in respect of the same loss. Cairns cited by Tyagi, &Tyagi,(2007), defines subrogation as "a right founded on a well-known principle of law which says that when one person has agreed to indemnify the other, he will, on making good the indemnity, be entitled to succeed in all the ways and means by which the person indemnified might have protected himself against or reimburse himself for the loss" (Tyagi, &Tyagi,2007).He went further to explain that subrogation principle is subject to the following instances: (i) The insurer's subrogation right is only valid when he has paid the loss for which he is liable under the policy. (ii) The insurer is not entitled to the benefit of what is recovered until he has fully set the insured back in his former position before the loss occurred. (iii) The insurer is only subrogated to the rights and remedies available to the assured in respect of the contract from which the loss arises.

(iii)   Proximate Cause

This principle is very important when loss occurs due to strings of events. The principle simply explains that in deciding whether a loss can be tied to any of the risk insured against, the proximate or the nearest cause should be considered. An illustration of this

was cited by Tyagi, &Tyagi,(2007), that a ship was insured against collision, the ship collided and the cargo of oranges was mishandled which resulted in a delay. Consequently, the oranges deteriorated. From this case the damage to the cargo was not proximately caused by collision but was remotely caused by delay and mishandling which were not covered by the policy taken. Hence the insured could not recover the loss.Proximate principle is somehow technical and can cause dispute between the insured and the insurer if itis not well ironed out before embarking on the insurance contract.

(iv)   Indemnity

The concept of this principle is to make good the actual loss caused to the insured. Aside from personal accident, life assurance and sickness insurance contract, all other insurance contracts such as fire, burglary, marine or any other are contracts of indemnity Tyagi, &Tyagi,(2007).The principle of indemnity is based on the fact that the assured in the event of loss is only compensated with the actual total loss. But should in case no event arise the insured has nothing to receive from the insurer, his net premium therefore forms part of the underwriter's net profit. According to the explanation given for this principle, the insurer undertakes to indemnify the insured against a loss of the subject matter of insurance due to insured cause. In life assurance the question of loss is invalid and therefore its indemnification does not arise since loss of life cannot be quantified in monetary terms (Tyagi, &Tyagi, 2007).

(v)   Insurable Interest

This principle states that itis a must for the insured to possess insurable interest in the object insured by him. Insurable interest is a legal requirement that must be fulfilled for an insurance contract to take place; there is no shortcut to it. This can simply be defined

as the insured's financial interest in the subject matter of the contract. The major objective behind this legal requirement is to prevent the insurance contract from becoming a gambling contract. Any insurance contract where insurable interest is omitted is invalid and cannot be claimed in a court (Tyagi, &Tyagi,2007),

(vi) Attachment of Risk

Without the attachment of any risk to a policy, a contract does not exist and therefore in this case consideration of contract fails and insurance company must return the premium collected. Every insurance policy must be based on uncertainty about a financial loss, as it has been established that the main idea behind insurance is risk.

(vii)   Cancellation

Before the expiry of an insurance policy, the two parties involved in the contract have the right to terminate the policy. From the date of the cancellation, the insurer ceases to carry the risk of the insured; therefore, the insurer is obliged to return the premium collected from the insured.

(viii)   Mitigation of Loss

This principle explains that in the event of the loss insured against the policy holder is responsible to minimize loss and save whatever is left. This principle helps the insured to be more careful in respect of the property under cover. He is expected to act as if the property is not insured. For example, a person that insures his house against fire and his house accidentally caught fire should act as if he does not have fire insurance for the house. At the time of the accident, he should put himself in the shoes of an ordinary prudence man. Therefore, he is not expected to wait for the fire to be extinguished but should quickly alert his neighbours and fire brigade to help him get rid of the fire without delay (Tyagi, &Tyagi,2007). The legal principles of insurance explained above

are essentials in the insurance business and they are technical. It is of great importance that all insurance practitioners and policy holders be well grounded in these principles so as to avoid dispute and ensure the smooth running of this business.

2.2.9 Functions of Insurance Companies

(i) Serve as a Means of Savings

Insurance policy serves as a means of savings particularly to those who find it difficult to save. This can be seen in an endowment assurance (under life assurance) where a sum of money is paid as premium for a given period of time after which the insured can recover his money irrespective of a loss or not on the part of the insurer.

(ii) Loss Prevention

Insurance encourages loss prevention. Thus if a loss occurs, it affects the economy because the funds used for the replacement could have been used for another purpose. Insurance encourages the reduction of loss for the benefit of the economy. The insurance companies in Nigeria persuade their insured to take proper precaution by increasing premiums (that is premium loading) and granting discounts for loss reduction facilities and no claims periods in many cases, insurer normally refuses to grant cover until their recommended precautions have been taken.

(iii) Efficient Industry and Commercial Market

In Nigeria, insurance fosters an efficient market place, by eliminating uncertainty and financial losses resulting from a given set of causes. It thus removes one of the obstacles to competition that is, monopoly. It helps to place small firms on a better competitive footing with the rival ones which causes business stability through indemnification. Insurance permits a more efficient utilization and allocation of resources which further enhances the reduction of the price of consumer goods and essential services.

(iv) Credit Facilities Transaction:

Most of the world transactions today are carried out on credit basis, and Nigeria is not an exception. Insurance provides compensation to individuals and organizations for losses resulting from their debtors (that is under credit insurance as provided by the decree of 1982). Lenders can confidently lend out after taking a credit insurance policy and bearing in mind that they will be compensated by the insurance companies when their debtors fail to pay them as a result of debtors' insolvency.The fund to be tied down is released to economy.

(v) Employment Opportunity:

Insurance contributes its share in assisting government to tackle the problem of unemployment in Nigeria. The industry provides job opportunities for those in the industry. The fact is that other big industries which provide employment for thousands Nigerians are able to do so as a result of various forms of insurance covers since no National Industrialist would like to establish multi-million-naira worth of industry without insurance protection in one way or the other. The insurance industry in Nigeria now attracts a large number of graduates of many disciplines to work in the various areas of operations such as risk management, investment, research and development.

2.2.10 Concept of Profitability

Profitability refers to money that a firm can produce with the resources it has. It involves the capacity to make benefits from all the business operations of an organization, firm or company (Muya&Gathogo, 2016). It usually acts as the entrepreneur's reward for his/her investment. As a matter of fact, profit is the main motivator of an entrepreneur for doing business. Profit is also used as an index for performance measuring of a business (Ogbadu, 2009). Profit is the difference between

revenue received from sales and total costs which includes material costs, labour and so on (Stierwald, 2010).Profitability has been given considerable importance in the finance and accounting literature.It can be expressed as either accounting profits or economic profits and it is the main goal of a business venture (Anene, 2014).

Profitability portrays the efficiency of the management in converting the firm's resources to profits (Muya&Gathogo, 2016). Thus, firms are likely to gain a lot of benefits related to increased profitability (Niresh&Velnampy, 2014). One important precondition for any long-term survival and success of a firm is profitability. It is profitability that attracts investors and the business is likely to survive for a long period of time (Farah & Nina, 2016). Many firms strive to improve their profitability and they do spend countless hours on meetings trying to come up with a way of reducing operating costs as well as on how to increase their sales (Schreibfeder, 2006).

In accounting theory, profitability shows the surplus of profit over expense for a specified duration that represents earning of insurance from the various activities they perform in a growing economy(Tariq et al.,2014).The profitability of insurance industry can thus be defined as net profit of insurance companies (San &Heng, 2013). Insurance is profitable if it has accrued more gains in financial perspective from invested capital,thus, the insurance's success is determined by the profits it has made in a given financial year (Adeusi, Kolapo&Aluko, 2014).

According to Malik (2011), profitability is one of the most important objectives of financial management since one goal of financial management is to maximize the owners' wealth and profitability is a very important determinant of performance. A business that is not profitable cannot survive. Conversely, a business that is highly

profitable has the ability to reward its owners with a large return on their investment. Hence, the ultimate goal of a business entity is to earn profit in order to ensure the sustainability of the business in prevailing market conditions. Whereas it interprets the term profit in relation to other elements, it is necessary to examine the determinants of profitability to understand how companies finance their operations. A financial benefit is realized when the amount of revenue gained from a business activity exceeds the expenses, costs and taxes needed to sustain the activity.

Profitability analysis classifies measures and assesses the performance of the company in terms of the profits it earns either in relation to the shareholders' investment or capital employed in the business or in relation to sales, profit (or loss). Given that most companies invest in order to make a return, the profit earned by a business can be used to measure the success of that investment. (Stierwald, 2010) defines that profitability is the organizations' ability to generate income and its inability to generate income is a loss. He further asserts that if the income generated is greater than the input cost, that is simply profitability but if the incomes are less than the input cost, it reflects poor performance.

According to Al-Shami (2008), there are different ways to measure profitability such asreturn on assets (ROA), return on equity (ROE) and return on investment (ROI). ROA is an indicator of how profitable a company is relative to its total assets. It gives us an idea as to how efficient management is in using its assets to generate earnings whereas ROE measures a company's profitability which reveals how much profit a company generates with the money shareholders have invested. ROIC is a measure used to asses a company's efficiency in allocating the capital under its control in profitable investments.

This measure gives a sense of how well a company is using its money to generate returns. Comparing a company's ROI with its weighted average cost of capital (WACC) reveals whether invested capital is used efficiently or not. In contrast, William (2004) argued that the performance of insurance companies in financial terms is normally expressed in net premium earned, profitability from underwriting activities, annual turnover, return on investment and return on equity. These measures could be classified as profit performance measures and investment performance measures. However, most researchers in the field of insurance and their profitability argued that the key indicator of a firm's profitability is ROA defined as the before tax profits divided by total assets. Hardwick and Adams (1999) and Malik (2011) among others have suggested that although there are different ways to measure profitability, it is better to use ROA.

Therefore, being profitable means that insurance companies are earning more revenues than what is being disbursed as expenses. As explained above, just to analyze the drivers of profitability, it is useful to decompose either the return on asset, ROA or ROE into their main components. According to Swiss (2008),profits are determined first by underwriting performance (losses and expenses, which are affected by product pricing, risk selection, claims management and marketing and administrative expenses); and second, by investment performancewhich is a function of asset allocation and asset management as well as asset leverage. The firstdivision of the decomposition shows that an insurer's ROE is determined by earnings after taxes realized for each unit of net premiums (or profit margin) and by the amount of capital funds used to finance and secure the risk exposure of each premium unit (solvency). That is why most researchers use ROA as a measure of profitability in financial institutions.

The term profit can take either economic meaning or be viewed as an accounting concept which shows the excess of income over expenditure during a specified period of time. On one hand, profit is one of the main reasons for the continued existence of every business organization. On the other hand, profit is expected so as to meet the required return by owners and other outsiders.Hampton (2009) clarified profitability ratio as a class of financial metrics that are used to assess a business's ability to generate earnings as compared to its expenses and other relevant costs incurred during a specific period of time. Accordingly, the term 'profitability' is a relative measure where profit is expressed as a ratio, generally as a percentage. Profitability depicts the relationship of the absolute amount of profit with various other factors.

Similarly, Koller (2011) argued that profitability is the most important and reliable indicator as it gives a broad indicator of the ability of an insurance company to raise its income level. In practice, executives define profits as the difference between total earnings from all earning assets and total expenditure on managing entire asset-liabilities portfolio. The variation of profit among insurance companies over the years in a given country would suggest that internal factors or firm specific factors play a crucial role in influencing their profitability. It is therefore imperative to identify what these factors are as it can help insurance companies to take action on what will increase their profitability and investors to forecast the profitability of insurance companies in the country. To do so, it is better to see what factors were considered in previous times by different individuals. Profitability involves the capacity to make benefits from all the business operations of an organization, firm or company (Muya&Gathogo, 2016). Profit usually acts as the entrepreneur's reward for his/her investment. As a matter of fact, profit is the main motivator of an entrepreneur for doing business. Profit is also used as

an index for performance measuring of a business (Ogbadu, 2009). Profit is the difference between revenue received from sales and total costs which includes material costs, labor and so on (Stierwald, 2010).

Profitability also shows the association between the absolute amount of income that indicates the capability of the insurance to advance loans to its customers and enhance its profit. In today's competitive environment, profitability is a key factor for the smooth running of the business and has a significant effect on performance of the insurance and economic development as well (Tariq, et al 2014).Profitability is also crucial for insurance industry to maintain its ongoing activities and for shareholders to generate fair returns (Ponce, 2011). Profitability is one of main aspects of financial reporting for many firms (Farah & Nina, 2016). Profitability is vital to the firm's manager as well as the owners and other stakeholders that are involved or associated to the firm since profitability gives a clear indication of business performance. Profitability ratios are normally used to measure earnings generated by a firm for a certain period of time based on the firm's sales level, capital employed, assets and earnings per share (EPS). Profitability ratios are also used to measure the firm's earning capacity and considered as a firm's growth and success indicator (Majed, Said &Firas, 2012).

Profitability is generally measured using accounting ratios with the commonly used profitability ratio being ROA. ROA determines the amount of the profit earned per value of assets. This reflects the efficiency with which the insurance's managers use insurance's investment resources or assets in generation of income (Sehrish, Irshad& Khalid, 2011). ROA simply connotes the management efficiency and depicts how effectively and efficiently the insurance management operates as they employ the

organization's assets into the earnings. A high ROA ratio is a clear indicator of a good performance or profitability of an insurance entity (Bentum, 2012).

2.2.11   Dependent Variables

Profitability is the company's ability to generate profits with the resources of the company. In this study, profitability is proxied by Return on Assets (ROA), Return on Equity (ROE) and Net Profit Margin (NPM). Return on Assets (ROA) is a ratio that measures the company's ability to generate net income under a certain level of assets (Hanafi, 2013). Return on Equity (ROE) measures the ability of the company to generate a net profit based on certain capital (Hanafi, 2013). Net Profit Margin (NPM) is a ratio that measures the profit generated by each of the sales (Prastowo, 2005). Optimizing the value of the company which is the company's goals can be achieved through the implementation of financial functions, where by each financial decision taken will affect other financial decisions and have an impact on stock prices.

2.2.12 Independent Variables

In this study, ROA, ROE and NPM are used as measures of insurance company's profitability against which various internal variables will be regressed. Internal variables are those that managers of insurance companies have control over. In other words, these are factors that are often influenced by policies and decisions of the insurers' management. The operational definitions of these variables are provided below:

(a)   Company Size: The size of an insurance company is one of the most important variables to be considered by this study. Because it is too difficult to precisely measure the size of insurance companies (Shiu, 2014), then the logarithm of total assets is used as a proxy for insurers' size. The main reason for considering insurers' size as a major determinant of profitability is that first, large insurers usually have greater capacity for

dealing with adverse market fluctuations than smaller ones and second, large insurance companies have economies of scale in terms of the labour cost, which is the most significant production factor for delivering insurance services (Shiu, 2014).Third, large insurance companies usually can relatively easily recruit able employees with professional knowledge compared with small insurance companies.Regardless of the above facts, however, there is no consensus among the different scholars as far as the relationship between size of insurers and profitability is concerned in the literature (Shiu, 2014). As a result, the sign of insurer's size and profitability is subject to further empirical study.

(b) Leverage: The leverage ratio of an insurance company is defined as the ratio of debt to equity. It indicates the amount of debt used to finance the assets of a given firm. An insurance company with significantly more debt than equity is considered to be highly leveraged. The risk of an insurer may increase when it increases its leverage. Empirical literature in capital structure confirms that a firm's value will increase up to optimum point as leverage increases and then declines if it is further increased beyond that optimum level. For instance, Rebao, Chen and Wong (2004),argued that leverage beyond the optimum level could result in higher risk and low value of the firm. Harrington (2005) also stated that the relationship between leverage and profitability has been studied extensively to support the theories of capital structure and argued that insurance companies with lower leverage will generally report higher return on assets (ROA). Therefore, the leverage ratio is expected to have a negative relationship with profitability.

(c) Loss Ratio: Is the ratio of total loss incurred (paid and reserved) in claims plus adjustment expenses divided by the total premiums earned. This ratio is one of the most

important profitability indicators for insurance companies. Loss ratio, which is also expressed as the underwriting risk in the relevant literature, shows the effectiveness of the underwriting activities of insurance companies. In this study, loss ratio is calculated by dividing the incurred claims with the earned premiums. Insurance companies that consistently experience high loss ratios may be in bad financial health. It is an indication that they are not collecting enough premiums to pay claims and expenses and still make a reasonable profit. Accordingly, it is expected that loss ratio will have a negative impact on the profitability of insurance companies.Organizations that engage in risky activities are likely to have more volatile cash flows than entities whose management is more averse to risk-taking (Fama and Jensen, 1983).

As a consequence, insurers that underwrite risky business (e.g., catastrophe coverage) will need to ensure that good standards of management are applied to mitigate their exposure to underwriting losses ex-ante and maximize returns on invested assets ex-post. This could improve annual operational performance by encouraging managers to increase cash flows through risk taking. On the other hand, excessive risk-taking could adversely affect the profitability of insurers and reinsurance companies. Furthermore, higher annual insurance losses will tend to increase the level of corporate management expenses ex-post (e.g., claims investigation and loss adjustment costs) that could further exacerbate a decline in reported operational performance.

In contrast, insurers companies with lower than expected annual losses are likely to have better operational performance because, for example, they do not incur such high monitoring and claims handling costs. Thus a negative connection between the underwriting risk and the insurer's profitability is expected, since taking an excessive underwriting risk can affect the company's stability through higher expenses.

(d)Premium growth: Premium revenue is the primary source of revenue for most insurers and it is generally more persistent than other revenue sources. Therefore, premium growth should help predict future revenue and earnings growth. For insurance companies, especially those writing long-tail policies, income in periods of premium growth is understated due to the overstatement of losses and loss expenses which are measured undiscounted. If premium revenue is relatively stable over time, this bias is offset by the omission of interest expense on the loss reserve.

However, when premium revenue increases (declines) overtime, the omitted interest expense is smaller (larger) than the overstatement of the losses and loss expenses, and so income is understated (overstated) (Charumathi, 2012). Premium growth measures the rate of market penetration. Empirical results showed that the rapid growth of premium volume is one of the causal factors of insurers' insolvency (Kim, Lin, & Suen,2010).Premium growth is driven by exposure growth (an increase in the number of policyholders) and rate-level growth (an increase in the average price per exposure).These two sources of growth have different persistence and risk implications. Exposure growth is valuable if the products are properly priced, but in a competitive market significant exposure growth may be an indication of underpricing. This is the primary motivation for using premium growth as a potential early warning signal of financial impairment.

In contrast, premium growth attributable to rate increases may reduce risk if the same customers are paying more for the same risk exposure. However, if the rating increases later or reflects a change in the mix of customers, the new book of business can generate unexpected losses if it is mispriced. Kozak (2011) argue that an excessive growthof underwritings generates a higher underwriting risk and the necessity to increase the

volume of technical reserves and excessively increases the volume of the gross written premiums whichmay lead to self-destruction, as other important objectives, such as selecting profitable investment portfolios could be neglected. Thus, the expected sign of the premium growth is unpredictable based on prior research.

(e)Capital adequacy: This refers to the excess of the value of assets over that of liabilities of insurance companies. In the context of finance literature, equity to asset ratio is used as a proxy for capital adequacy. It is an important indicator of the financial strength of an insurer and also shows its ability to survive in the long-run. Insurance companies with higher solvency margin outperform those with lower solvency margin (Shiu, 2014). Insurance companies with greater equity to asset ratio are considered to be financially sound and thereby capable of attracting various policyholders. In other words, insurance companies with higher capital adequacy ratio are relatively assumed to be safe in times of loss and bankruptcy. On the other hand, the higher the ratio of equity to asset of insurers, the lower is the risk and this could pave way to increase their credit worthiness. Consequently, insurers will have lower cost of funding. Furthermore, insurance companies with higher equity to asset ratio will have less demand to raise funds from external sources. However, it is very difficult to confirm what relationship exists between equity to asset ratio and profitability and as a result, it is subject to empirical study.

2.3Empirical Studies on Determinants of Profitability of Insurance Companies

The empirical review focuses on related studies on determinants of profitability of insurance companies both in developed and developing countries. Emphasis is placed on some of the determinantsused in this study as they relate to profitability of insurance

companies.Ojo (2012) examined the effect of financial leverage on selected indicators of corporate performance in Nigeria. Leverage therefore, significantly affects corporate performance in Nigeria. The study also examined the impact of leverage on the earnings per share and net assets per share of corporate firms in Nigeria. The econometric findings presented in this study evidenced that leverage shocks (debt/equity ratio) have significant effect on corporate performance especially when the net assets per share was used as an indicator of corporate performance in Nigeria over the period covered by the study.

Akinmulegun (2012) examined the effect of financial leverage on selected indicators of corporate performance in Nigeria. Other detailed objectives were to: Examine the impact of leverage on the earnings per share and net assets per share of corporate firms in Nigeria. Leverage therefore, significantly affects corporate performance in Nigeria.

Garba and Abdulsalam (2011) investigated the Factors affecting the patronage of insurance services in Borno state, Nigeria. They administered 400 questionnaires to the respondents and used percentage and mean as basis for their analysis. Based on the findings of the study it was discovered that there were numerous factors affecting the patronage of insurance services in Borno State. These factors range from social to economic factors.

Ogenyi (2007) assesses the Consumers'Attitudes on the retailing of Life Insurance in Nigeria. The result from the analysis of questionnaire shows that lack of trust and confidence in the insurance companies was the foremost reasons for not buying a life insurance policy in Nigeria. Relatively, less influential reasons for not buying a life insurance was lack of knowledge about insurance products. Almost 40 percent of the

respondents do not have any protection against the financial loss that can result from death, disability or critical illness.

Ibrahim &Abubakar (2011) on the relationship between shareholders fund and profitability of listed insurance companies in Nigeria. The findings of the study found insignificant relationship between shareholders fund and profitability of selected insurance companies in Nigeria during the period of 2006 to 2007.

Hamdan (2008) examined the determinants of insurance company's profitability in UAE. The study used secondary data for the period of 2004-2007. The study revealed that there is no relationship between profitability and age of the company and there is significantly positive relationship between profitability and size & volume of capital.The result also shows that leverage ratio and loss ratio significantly related to profitability.

According to Swiss (2008), profits are determined first by underwriting performance (losses and expenses, which are affected by product pricing, risk selection, claims management, and marketing and administrative expenses); and second, by investment performance, which is a function of asset allocation and asset management as well as asset leverage. The first division of the decomposition shows that an insurer's ROE is determined by earnings after taxes realized for each unit of net premiums (or profit margin) and by the amount of capital funds used to finance and secure the risk exposure of each premium unit (solvency).Cummins andNini (2002) studied the determinants of ROE of insurers operating in the US market over the period 1993 to 1998 which showed that company size has a significant impact on this indicator and this is consistent with the argument that larger companies generate higher profits.

Adams and Buckle (2003) examined the determinants of corporate financial performance in Bermuda insurance market. They applied a model of panel datato 47 insurance companies for 1993-1997 and found positive relationship between type of risk and insurers' operational performance.Shiu (2014) analyzed the determinants of general insurance companies in the UK for 1986-1999 using company-year data. The author revealed that liquidity, unexpected inflation and interest rate level were statistically significant determinants of insurer's performance.

Akotey, Osei&Gemegah(2011) identified the determinants of profitability in the life insurance industry of Ghana. The study used investment income, underwriting profit and overall net profit as proxies for profitability. The financial statements of ten (10) life insurance companies covering a period of eleven years (2000 to 2010) were sampled and analyzed through panel regression. The findings proved that whereas gross written premiums have a positive relationship with insurerssales profitability, its relationship with investment income is a negative one. Also, the results showed that life insurers have been incurring large underwriting losses due to overtrading and price undercutting. The results further revealed a setting-off rather than a complementary relationship between underwriting profit and investment income towards the enhancement of the overall profitability of life insurers. The major drawback of this study is the combination of both the macro and micro determinant variables on life insurance neglecting the non-life insurance. Focusing on both micro and macro determinants variables may not give adequate information regarding their effectiveness in influencing the performance of insurance firms due to the combined effect of both the micro and macro determinants.

Sumaira and Amjad (2013) studied the determinants of profitability in insurance sector of Pakistan with a panel data set of 31 insurance firms (life insurance sector and non-life insurance) from 2006-2011. To investigate the determinants of profitability, panel data techniques (fixed effects and random effects models) were employed and then Hausman's specification test was applied to select the more effective model. The test proved that fixed effects model was the more appropriated model for the study. The outcomes show that leverage, size, earnings volatility and age of the firm were significant determinants of profitability while growth opportunities and liquidity were not significant.

Greene (2004) argued that the profitability of insurance is normally expressed in net premium earned, profitability from underwriting activities, annual turnover, return on investment and return on equity. These measures could be classified as profit performance measures and investment performance measures.

Hoyt and Powell (2006), in their research paper, analysed the financial performance of medical liability insurers by using two appropriate measures, namely, the economic combined ratio and the return on equity. The period for the study was from 1996 to 2004. Based on ECR, medical liability insurers, as a group reported modest profitability in only three years (1996, 1997 and 2004). In contrast, these insurers sustained losses in six consecutive years from 1998 to 2003. The average profit ratio (return on net premiums earned) during the period 1996 to 2004 was negative by thirteen per cent. The study found that there was no evidence that medical liability insurers have been earning excessive returns or that they were over-capitalized. The research concluded that there was no evidence that medical malpractice insurance was overpriced.

Holzheu (2006), in his research paper, measured the underwriting profitability of insurance markets. The study used economic combined ratio as alternative key performance indicator instead of conventionally published combined ratio. It reflects underwriting profitability more accurately. The study focused on the underwriting profitability of six major non-life markets, the US, the UK, Germany, Japan, France and Canada from 1994 to 2004. The results indicated the picture for the business year results for Japan, Canada, France, Germany and the UK were broadly consistent with the US results. The results for the years 1994 to 1997 and 2002 to 2004 were profitable, though often only moderately.

The period from 1998 to 2001 exhibited dismal underwriting results. Substantial improvements in underwriting results from 2001 to 2003 restored profitability to the level of the 1994 to 1997 period. The study further pointed out that the ten year average underwriting margins before taxes were positive in all countries implying a positive contribution to profits from the insurance activities. However, the contribution was only about one- two per cent in the US and Japan, two-three per cent in France, five per cent in Canada and the UK, and six per cent in Germany. The study found that these positive results were necessary but not a sufficient condition for creating shareholder value. Profits must also cover tax and the insurers' capital cost. During the period 1994 to 2004, it was difficult for the industry to earn its underwriting cost of capital.

Eze and Victor (2013) examined the impact of insurance practice on the growth of Nigerian economy. They used insurance premium income, total insurance investment and income of insurance development as determinants of insurance practice. The study observed that the insurance premium has significantly impacted on economic growth in

Nigeria and that there is causal relationship between insurance sector development and economic growth in Nigeria.

Sidra and Attiya (2013) investigated the Determinants of financial performance of a firm: Case of Pakistani stock market. They examined the possible association between financial performance of the firm and economic indicators, corporate governance, ownership structure, capital structure, and risk management. The study examined the performance of firms in terms of profitability and its association with multiple determinants for 60 Pakistani corporate firms listed in Karachi Stock Exchange for the period of 2007 to 2011 and attempted to explain the observed behavior with the help of fixed effect model. The results consistently supported the potential association between firm's financial performance and economic indicators, corporate governance, ownership structure, and capital structure although the intensity of relationship differs across different measures of performance. The test of heterogeneity and multi-colliniarity was conducted in this study which improved the quality of the work. It is also one of the very few examples, which attempts to test various determinants of firm performance in the context of a developing market (Pakistan).

Eric, Samuel and Victor (2013) conducted research on the determinants of profitability of insurance firms in Ghana. Secondary data from financial reports were collected from sixteen insurance firms for the period 2005 to 2010.The study was quantitative in nature and adopted the longitudinal time dimension, specifically, the panel method and ordinary least square regression. It discovered that, apart from tangibility which has a negative relationship, there was a positive relationship between leverage, liquidity and profitability of insurance firms in Ghana. It was also concluded that, the profitability model adopted has been explained in respect to all the independent variables and that

the degree of error is less than 20%. The model used for this study was statistically fit as the result of the study presents variations in r square at 81%. The result of the study was also sound as the Multicollinearity of the data was checked.

Charumathi (2012), empirically assessed the determinants of profitability of Indian life insurers. The study identified the factors determining the profitability of life insurers operating in India taking return on asset (ROA) as dependent variable. The sample for the study included all the 23 Indian life insurers (including 1 public and 22 private) and it used the data pertaining to 3 financial years, viz., 2008-09, 2009-10 and 2010-11. For this purpose, firm specific characteristics such as leverage, size, premium growth, liquidity, underwriting risk and equity capital were regressed against Return on Assets. This study led to the conclusion that profitability of life insurers was positively and significantly influenced by the size (as explained by logarithm of net premium) and liquidity. The leverage, premium growth and logarithm of equity capital have negatively and significantly influenced the profitability of Indian life insurers. This study did not find any evidence for the relationship between underwriting risk and profitability.

Curak, Pervan, &Poposki, (2012), examined the determinants of profitability of the Croatian composite insurers between 2004 and 2009. The determinants of profitability selected as explanatory variables include both internal factors specific to insurance companies and external factors specific to the economic environment. By applying panel data technique, the authors showed that company size, underwriting risk, inflation and return on equity have a significant influence on insurers' profitability. The final results indicate that the Croatian insurance market has a low level of development, but it is very dynamic.

Malik (2011) examined the results of 34 insurance companies in Pakistan from 2005-2009 and confirmed the positive relationship between ROA and the size volume of capital and negative impact of the leverage variable and the loss ratio variable on ROA. Kozak (2011) analyzed the determinants of three indicators of profitability (profitability of technical, profitability of investment activity and sales profitability)of 25 non-life insurance companies from 2002-2009 in Poland. The researcher showed in particular that the volume of gross written premiums significantly and positively influences the profitability of technical companies. Reducing the level of operating costs had a positive impact on the increase of the technical profitability of the insurance companies. Also, the share of motor insurance in the company's insurance portfolio negatively affected their profitability.

Pervan, ČurakandMarijanović (2011) found that size, underwriting risk, inflation and equity returns had significant impact on the insurers' ROA. Moro andAnderloni (2014) examined the results of 198 insurers in nine EU countries (ie. the old EU) for the years 2004 through 2012 and determined that ROA is impacted by variables related to operation of companies, it is negatively affected by asset size, combined ratio and variable referred to as internationalization(when shareholders are foreign companies or groups) and diversification(mixed companies operating both in non-life and in life insurance), while a positive impact was found for variables defined as reserves' dimension and asset turnover. Similar variables significantly influenced the size of ROE.Ikonic et al. (2011) analyzed the profitability of the Serbian insurance companies by applying the IMF CARMEL methodology. Thus, by determining four indicators related to the capital adequacy of insurers, the authors highlight that capital adequacy is vital for a company, as it may generate a good level of profitability. The analysis

indicated that the Serbian insurance market falls into the category of developed markets and that there are good prospects of evolution.

Rudolf (2001), in his paper, examined the key factors and latest trends determining profitability in the major non-life insurance markets. The study focused on the non-life insurance markets of the group of seven countries (G7) mainly for the period 1996 to2000. To analyse the profitability, investment results and underwriting results were compared between countries and across lines of business and to analyse the drivers of profitability, return on equity was decomposed into its main components namely underwriting results and investment income. The results indicated that only Germany and Japan did not have negative underwriting results and return on equity was high in UK, moderate in Canada and US, and low in France and Germany. The study found that underwriting result and investment yield are negatively correlated. The research suggested that due to uncertain prospects for investment results, the insurers must focus on underwriting results to achieve greater profitability.

Burca and Batrînca (2014) investigated the factors that influence the financial performance of 21 insurance companies operating in the Romanian insurance market during the interval 2008–2012. For this purpose, 13 explanatory variables were empirically tested: financial leverage in insurance, company size, number of years of operations in the Romanian market, growth of gross written premiums, equity, total market share, diversification, underwriting risk, investment ratio, reinsurance dependence, retained risk ratio, solvency margin, and growth of GDP/capita. As an indicator of the financial performance, the return on total assets ratio was used. By applying specific panel data techniques, the authors have shown that the determinants of the financial performance in the Romanian insurance market are financial leverage in

insurance, company size, growth of gross written premiums, underwriting risk, risk retention ratio, and solvency margin.

Doğan(2013)examined the influence of firm-specific factors (loss ratio, leverage ratio, liquidity, size of the company, and age of the company) on the profitability of insurance companies listed on the Istanbul Stock Exchange for the period 2005–2011. According to the results of multiple regression and correlation methods used in the study, there is a positive and significant relationship between the size and profitability of insurance companies. However, profitability is influenced significantly and negatively by loss ratio, leverage ratio, current ratio, and age of the company.Hrechaniuk, Lutz, Talavera (2007)investigated the performance of Spanish, Lithuanian, and Ukrainian insurance companies at different periods. These three countries were chosen as representatives of the countries of the "old" EU, the "new" EU, and non-EU members, respectively. The research results indicate that there are systematic differences across these three countries' insurance industries.

Almajali, Sameer and Al-Soub(2012), investigated the factors that affect the financial performance of Jordanian insurance companies. In this study, the financial performance of insurance companies is measured by return on assets (ROA). The results of regression analysis reveal that liquidity, leverage, size of the company and management competence index have a significant and positive effect on the financial performance of Jordanian insurance companies. Results also suggest that there is no significant relationship between the age of the company and ROA.

Hifza (2011), in her research article, analysed the various factors affecting profitability of insurance companies in Pakistan for the period 2004-05 to 2008-09. The researcher included a sample of 35 listed life and non-life insurance companies and specifically

examined the effects of firm specific factors such as age of company, size of company, volume of capital, leverage ratio and loss ratio on profitability. The findings of the study showed that there was no relationship between profitability and age of the company but there was positive association between size of the company and profitability. The study also showed that the volume of capital was positively related with profitability whereas loss ratio and leverage ratio indicated negative relationship with profitability. The researcher suggested that there should be a reverse and significant relationship between leverage ratio and loss ratio as independent variables so that profitability can be improved.

Daniel and Tilahun (2013), in their paper evaluated determinants of insurance companies' performance in Ethiopia over the period of 2005 to 2010. The results revealed that firm size, leverage, loss ratio and tangibility of assets were statistically significant in explaining the performance of insurance companies. The result of the study also showed that insurers' size, leverage and tangibility of assets were positively related to insurance performance, while loss ratio was negatively related to performance (ROA). Firm age, liquidity and growth in written premium have no a statistically significant relationship with performance of insurers.

Ana, and Ghiorghe(2014), evaluated the determinants of financial performance in the Romanian insurance market, between 2008 and 2012. The authors analysed the financial performance of insurance companies at micro and macroeconomic levels, being determined by both internal factors represented by specific characteristics of the company, and external factors regarding connected institutions and macroeconomic environment by applying specific panel data techniques. The results showed that the determinants of financial performance in the Romanian insurance market are the

financial leverage, company size, growth of gross written premiums, underwriting risk, risk retention ratio and solvency margin. Olajumoke (2012), in her paper, examined the determinants of profitability of micro life insurers in Nigeria over the period of 2003-04 to 2007-08. The results of the study indicated that profitability of micro-life insurers is not influenced by factors such as ownership structure, leverage and size of firms. However, profitability is found to be negatively related to the level of reinsurance, suggesting that reinsurance in the micro-life insurance sector of the Nigerian market may be highly priced to reflect the increased risk associated with insuring the lives of low income groups. Furthermore, the profitability of micro-life insurers operating in Nigeria is found to be positively influenced by the level of interest rates in the economy.

Amal (2012) investigated various factors that affect financial performance of twenty-five insurance companies in Jordan during the period 2002-03 to 2007-08. The results showed that variables such as leverage ratio, liquidity, Size of company, and management competence have a positive statistical effect on the financial performance of the insurance companies. However, age of the company was found to have no influence on their performance, which encourages new entrants into the insurance industry. The researcher suggested that insurance companies should have high consideration of increasing assets and well qualified employees in the top managerial positions that leads to a better financial performance.

Lee (2014) investigated in his study, the relationship between firm specific factors and macroeconomics on profitability in Taiwanese property-liability insurance industry using panel data over the1999 through 2009-time period. Using operating ratio and return on assets (ROA) for the two kinds of profitability indicators to measure insurers' profitability, the results show that underwriting risk, reinsurance usage, input cost,

return on investment and financial holding group have significant influence on profitability in both operating ratio and ROA models. The insurance subsidiaries of financial holding group compared with other insurance companies, show lower profitability. In addition, economic growth rate has significant influence on profitability in operating ratio model but insignificant influence on profitability in ROA.

Wabita (2013) sought to establish the determinants of financial performance of insurance companies in Kenya. He established that growth of the insurance industry positively affects financial performance, leverage of the insurance industry negatively affects financial performance, and the amount of tangible assets held by the industry positively affects financial performance.

Abate andYuvaraj (2013) examined the effects of firm specific factorssuch as age of company, size of company, volume of capital, leverage ratio, liquidity ratio, growth and tangibility of assets on the performance of nine insurance companies in Ethiopia for the period of nine years i.e. from 2002-03 to 2010-11. The researcher revealed that variables such as growth, leverage, volume of capital, size, and liquidity were identified as most important determinant factors of profitability. However, age of the companies and tangibility of assets were not significantly related with profitability. Lastly, the study suggested that insurance companies should focus on not only firm specific variables but also macroeconomic factors so that profitability should improve.

John, Richard and Lee (2014)investigated how profitability of insurance firms is influenced by working capital management and leverage in Ghana using eighteen firms for the period 2001-02 to 2010-11. The current ratio was taken as representative of the result of working capital management policy and financial leverage and operating

leverage as the benchmark for capital structure. Panel data was employed to determine whether profitability of insurance companies was related to selected indicators in accordance with the accepted finance theory or not. The research results showed that the degree of financial leverage and liquidity were inversely related to profitability while operating leverage was positively related to profitability.

Mwangi and Murigu (2015) studied the determinants of financial performance in general insurance companies in Kenya for the period 2009-10 to 2012-13. The study aimed to establish the factors that affect the profitability of general insurers in the country by employing multiple linear regression analysis, with return on assets as the dependent variable. Their study found that the contribution of the general insurance industry to the gross domestic product was at 2.08%. Profitability was positively related to leverage, equity capital, management competence index and negatively related to size and ownership structure. The study did not find a relationship between performance and retention ratio, liquidity, underwriting risk and age. Finally, they recommend that for general insurers in Kenya to perform better, they should increase leverage, equity capital and quality of staff.

2.4 Summary of Gaps in the Literature

Based on the review of the empirical studies, it was observed that, although several studies were conducted on the determinants of profitability of insurance companies in developed and developing countries (Hamdan, 2008; Cummins &Nini, 2002; Adams & Buckle 2003; Shiu 2014;Sumaira&Amjad, 2013;Malik, 2011; Kozak, 2011; Daniel &Tilahun, 2013 and Hifza 2011), however, majority of these studies measured profitability using only one proxy, which is return on assets (ROA) or return on equity (ROE). Though, ROA and ROE are proxies of profitability, but using a single proxy to

determine profitability of insurance companies is not enough. Therefore, this studytried to extend the previous studies by incorporating three proxies (ROA, ROE and NPM) comprehensively in measuring profitability.

Moreover, in terms of methodological gap, tothe best of researcher's knowledge none of the studies conducted in Nigeria ever used these three models in analysing the determinants of profitability of insurance companies. On geographical location, few studies on determinants of profitability of insurance companies were conducted but in different geo-political zone of the country.Also, a time frame of nine years (2008-2016) was used for this study to allow for logical and coherent conclusions, but to the best of researcher's knowledge none of the studies in Nigeria ever used as reasonable time as this.Some of the studies used a time frame of less than nine years (Olajumoke, 2012; Olaosebikan, 2013). Therefore, this study filledthese gaps by extendingthe period to nine years, so as to have more robust results and contribute immensely to the existing body of knowledge.

2.5   Theoretical Framework of the Study

There is no general theory that provides a unifying framework for the study determinants of profitability of insurance companies. Therefore, this study tries to view some theories which are closer to the concept of profitability of insurance and its determinants.These theories include Modern Portfolio Theory, Arbitrage Pricing Theory and Efficiency Theory.

2.5.1Modern Portfolio Theory (MPT)

Modern portfolio theory (MPT) was developed by Harry Markowitz in 1952. The theory suggests that investors can improve the performance of their portfolios by allocating investments into different classes of financial securities and industrial sectors

that are not expected to react similarly if new information emerges. It assists in selecting the most efficient investments by analysing various possible portfolios of the given securities. By choosing securities that do not move exactly together, MPT model shows investors how to reduce their risk. It is based on expected returns (mean) and the standard deviation (variance) of the various portfolios. MPT attempts to maximize expected portfolio returns for a given amount of portfolio risk, or equivalently minimize risk for a given level of return by carefully choosing the proportions of various assets. It models a portfolio as a weighted combination of assets, so that the return of a portfolio is the weighted combination of the assets return.

Since insurance companies are investments by themselves, the standard practice is for them to invest in diversified portfolios to minimize risk and harness the returns of the various investment options on offer. When choosing a portfolio, investors should maximize the discounted (or capitalized) value of future returns. Since the future is not known with certainty, it must be expected or anticipated returns which are discounted. Through combining different assets whose returns are not perfectly positively correlated, MPT seeks to reduce the total variance of the portfolio return. MPT also assumes that investors are rational and the markets are efficient.

MPT emphasizes maximizing returns while minimizing risks, as well as giving recognition to the existence of systematic and non-systematic risks. These concepts are usually referred to when discussing financial investments. Insurance, being influenced by risks and returns as well also finds meaning through MPT. Diversification is the solution against being a victim of concentration of risk. Over reliance on similar assets' profitability and hopes that contingent liabilities do not become actual obligations are risks that can wipe out risk portfolios in an instant. Non-systematic risks and alphas are

the main items that give underwriting skills meaning. Non-systematic risks can be eliminated by widening the coverage of insurance over more assureds. In doing so, diversification is achieved.

Alphas, on the other hand, represent the surprise return or inherent profitability of an asset and in converting this concept into the insurance industry, this is perhaps the inherent characteristics of an insured property and how the hazards and other circumstances are minimized, where in it is more probable that the premiums paid by the assured will eventually be kept at the end of the insurance policy coverage period. While financial assets are capable of delivering abnormal returns, insurable risks are also able to remain abnormally intact and avoid transforming into real obligations for the insurance company. The fewer obligations an insurance company has, the more the profit they make.

2.5.2 Arbitrage Pricing Theory (APT)

Arbitrage Pricing Theory (APT) was proposed by Stephen Ross in 1976. APT agrees that though many different specific forces can influence the return of any individual company, these particular effects tend to cancel out in large and well diversified portfolio. This is the principle of diversification and it has an influence in the field of insurance. An insurance company has no way of knowing whether any particular individual will become sick or will be involved in an accident but the company is able to accurately predict its losses on a large pool of such risk. However, an insurance company is not entirely free of risk simply because it insures a large number of individuals. Natural disaster or changes in health care can have major influences on insurance losses by simultaneously affecting many claimants.

Cummins (1994) states that insurance companies are corporations and insurance policies can be interpreted as a specific types of financial instrument or contingent claim thus it is natural to apply financial.

2.5.3 Efficiency Theory (ET)

The efficiency theory (ET) has models to insurance pricing. The models are designed to estimate the insurance prices that would pertain in a competitive market. Charging a price at least as high as the competitive price (reservation price), increases the market value of the company. Charging a lower price would reduce the company's market value. Thus, financial models and financial prices are among the key items of information that insurers should have at their disposal when making financial decisions about tariff schedules and reinsurance contract terms, among others.

Formulated by Demsetz (1973) as an alternative to the market power theory, the efficiency theory presupposes that better management and scale efficiency results to higher concentration, hence greater and higher profits. Accordingly, the theory posits that management efficiency not only increases profits, but also results to larger market share gains and improved market concentration (Athanasoglou, Brissimis& Delis, 2005). The efficiency theory also states that a positive concentration-profitability relation may be a sign of a positive connection relating to efficiency and size. The theory postulates that positive association between the concentration and profit arises from a lower cost which is mainly achieved through production efficient practices and increased managerial process (Birhanu, 2012).

The efficiency theory supports that the most favourable production can be attained through economies of scale. Thus, maximum operational efficiency in the short run is

achieved at a level of output where all economies of scale available are employed in an efficient manner (Odunga et al., 2013). Additionally, the efficiency theory explains that attaining higher profit margins arises from efficiency which allows banks to obtain both good financial performance and market shares (Mirzaei, 2012). According to Fisseha (2015), the efficiency theory presupposes that profitability and high concentration results from efficient cost reduction practices and better management strategies across the organization. Thus, efficient firms in the market lead to an increase in their market share and the size of their firm because of aggressive production and management techniques (Birhanu, 2012).

Basically, the theory is based on the premise that insurance companies attain profits if they operate more efficiently than their competitors which lowers operating costs leading to good profits (Onuonga, 2014). The efficiency theory also assumes that internal efficiencies influence profitability of insurance companies (Obamuyi, 2013). Further, the theory explains that insurance companies which operate efficiently in comparison to their competitors increase their profits due to low operating costs. The efficiency hypothesis prevails when a positively significant correlation between profitability and the market share is signaled (Mensi&Zouari, 2010).

Therefore, this study is strongly based on the position of Arbitrage Pricing Theory because it is all encompassing in the sense that other theories such as modern portfolio theory seem to focus on particular views as the basis for their theoretical framework,emphasizing that investors can improve the performance of their portfolios by allocating their investment into different classes of financial securities and industrial sectors that are not expected to react similarly if new information emerges. Another theory is efficiency theory which says thatprofitability and high concentration results

from efficient cost reduction practices and better management strategies across the organization. Thus, efficient companies in the market lead to an increase in their market share and the size of their companybecause of aggressive production and management techniques (Birhanu, 2012). But Arbitrage Pricing Theory insists that an insurance company has no way of knowing whether any particular individual will become sick or will be involved in an accident, but the company is able to accurately predict its losses on a large pool of such risks. However, an insurance company is not entirely free of risk simply because it insures a large number of individuals. Natural disaster or changes in health care can have major influences on insurance losses by simultaneously affecting many claimants.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1   Introduction

This chapter deals with the methodology of the study.It provides detail on research design, population of the study, data source and method of dataanalysis. The chapter also provides discussions on the methods through which the data for this study is acquired, variables of the studyas well as the models specification.Diagnostic testsand panel data econometrics employed in carrying out this study are also presented.

3.2   Research Design

This study adopts anex-post facto research, using panel data to examine the relationship between the dependent and independent variables.This is because of the nature of the data that were used and considering the length oftime the study covered, nineyears period (2008-2016). This study collected data from insurance companies listed on the NSE and specifically examine therelationship between dependent andindependent variables. Descriptive statistics as well as inferential statistics which are all about trying to generalize about population of the study were used. Data collected was analysed using correlation with a view to ascertaining the type of relationship that exists between the variables under study and regression analysis which shows the extent of the relationship between these variables.

The variables of this study are dependent and independent variables; the dependent variable is the respective profitability of the insurance companies. The computation of these companies' profitability relied upon in this study are return on assets (ROA), return on equity (ROE) and net profit margin (NPM); while independent variables

are;company size (CS) leverage (LV) loss ratio (LR) premiums growth (PG)and capital adequacy (CA).

3.3 Populationof the Study

The population of this study comprises of all the twenty two (22) insurance companies listed on the NSE that were in operation as at 31st December, 2016 (see Appendix A). Therefore,the choice of these companies is based on theavailability of data required for the study. In order to reach meaningful conclusion and obtain an unbiased result, there is no need to sample from the twenty two insurance companies, as they are few in number.

3.4   Data Source and Description

The data set for this study was obtained from a panel of 22 insurance companies listed on the NSEover the period of 9 years (2008-2016). It is mainly obtained from audited financial statements of individual insurance companies which include income statements, statements of financial position, cash flow statements and notes to accounts. Furthermore, supplementary information was obtained from insurance companies' websites, National Insurance Commission (NAICOM) and Nigerian Insurance Association (NIA).

The period of 2008 -2016 was chosen in order to examine the determinants of profitability of insurance companies after recapitalization reform which ended in 2007. The reform was aimed at strengthening the operating efficiency of insurance companies in Nigeria.Therefore, the choice of the period is justified.

3.5 Variables Measurement Techniques

Table 3.1 Independent variables

Variables	Descriptions
Company Size (CS)	Computed as logarithm of total assets of the insurance company.
Leverage (LV)	This is Measured by the ratio of debt to equity. It indicates the amount of debt used to finance the assets of a given company. $$\frac{\text{Total Debt}}{\text{Total Equity}}$$
Loss Ratio (LR)	This is defined as the ratio of total losses incurred in claims divided by the annual premiums earned and it can be expressed as; $$\frac{\text{Incurred claims}}{\text{Annual premiums earned}}$$
Premium Growth (PG)	This is the percentage increase in gross written premiums. It is also measured as $$\frac{\text{Current premium-previous premiums}}{\text{Previous premiums}}$$
Capital Adequacy (CA)	This refers to the excess of the value of assets over that of liabilities of insurance companies. It can be determined as; $$\frac{\text{Total Equity}}{\text{Total Assets}}$$

Source: Developed by researcher by reviewing previous works of(Burca&Batrinca, 2014; Lee, 2014; Daniel &Tilahun, 2013; Charumathi, 2012).

Table 3.2 Dependent variables

Variables	Description
Return on Assets (ROA)	This is an indicator of how profitable a company is relative to its total assets. It can be measured as the net income divided by total assets of the insurance company $$\frac{\text{Net income}}{\text{Total Assets}}$$
Return on Equity (ROE)	Return on equity measures a company's' profitability by revealing how much profit a company generates with the money shareholders have invested. $$\frac{\text{Net income}}{\text{Shareholders fund}}$$
Net Profit Margin (NPM)	Net profit margin is the ratio of net profits to total income for the company, typically expressed as a percentage.It is calculated as net profit divided by total income. $$\frac{\text{Net profit}}{\text{Total income}}$$

Source: Developed by researcher by reviewing previous works of(Burca&Batrinca, 2014; Lee, 2014; Daniel &Tilahun, 2013; Charumathi, 2012).

3.6 Methods of Data Analysis

This study applied quantitative form of data analysis in the form of regression analysis with a view to ascertaining the relationship between dependent and independent variables.Regression modelling is mostly used because it is the procedures optimal results in predicting output when properly structured(William, Zikmund, Barry, Babin, & Mitch, 2010).The Regression also allowsexamining the effect of many different determinants of some outcome at the same time. This research work is generally a study on the analysis of the determinants of profitability of insurance companies in Nigeria through the application of quantitative form of data analysis.

In order to achieve the objectives of this study, the panel data regression model is used to examine the relationship between the dependent variables; return on assets; return on equity and net profit margin and independent variables; company size; leverage; loss ratio; premium growth and capital adequacy.This is because prior studies (Malik, 2011; Shiu, 2014; Charumathi,2012) mostly developed this model to analyze the determinants of insurance companies' profitability. Thus, the collected panel data is analyzed using descriptive statistics, correlations and inferential statistics. Mean values and standard deviations are used to analyze the general trends of the data from2008 to 2016 based on the 22 listed insurance companies and a correlation matrix is also used to examine the relationship between the dependent variables and independent variables. In addition, ordinary least square (OLS) is conducted using statistical package "EVIEWS" to determine the most significant and influential independent variables affecting the profitability of insurance companies in Nigeria.

3.7 Models Specification

Model building involves specifying relationships between two or more variables; perhaps extending to the development of descriptive or predictive equations(William, et al2010). Based on the extant literature, the empirical models are set to analyse the determinants of profitability of insurance companies in Nigeria. In the equations, the dependent variables are return on assets (ROA), return on equity (ROE) and net profit margin (NPM) which are used as proxies of profitability while independent variables are company size (CS); leverage (LV); loss ratio (LR); premium growth (PG) and capital adequacy (CA).

To achieve the general objective, the study specified the following empirical models:

Model specification for objective one

$$ROA_{it} = \beta_{0i} + \beta_{1i}CS_{it} + \beta_{2i}LV_{it} + \beta_{3i}LR_{it} + \beta_{4i}PG_{it} + \beta_{5i}CA_{it} + U_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\text{i}$$

Model specification for objective two

$$ROE_{it} = \beta_{0i} + \beta_{1i}CS_{it} + \beta_{2i}LV_{it} + \beta_{3i}LR_{it} + \beta_{4i}PG_{it} + \beta_{5i}CA_{it} + U_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\text{ii}$$

Model specification for objective three

$$NPM_{it} = \beta_{0i} + \beta_{1i}CS_{it} + \beta_{2i}LV_{it} + \beta_{3i}LR_{it} + \beta_{4i}PG_{it} + \beta_{5i}CA_{it} + U_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\text{iii}$$

Source: developed by researcher by reviewing previous research works of Shiu (2014), Malik (2011) andCharumathi (2012).

Where:

ROA_{it}= Return on Assets

ROE_{it}= Return on Equity

NPM_i= Net Profit Margin

CS_{it}= Company size

LV_{it} = Leverage

LR$_{it}$ = Loss ratio

PG$_{it}$= Premium growth

CA$_{it}$ = Capital adequacy

B$_{0i}$= constant parameter

β_{1i}= coefficient of Company size

β_{2i}= coefficient of Leverage ratio

β_{3i}= coefficient of Loss ratio

β_{4i} = coefficient of Premium growth

β_{5i}= coefficient of Capital adequacy

U$_{it}$ = error term

3.8 Unit Root Test

Rafindadi and Yusof (2015) argued that, although almost all dynamic panel data estimators (for example MG and PMG) are appropriate for estimating either I(0) or I(1) integrated data series (or a mix of both), however, if the order of integration happens to be I(2), the PMG estimator tends to produce spurious estimates (see also Asteriou & Monastiriotis, 2004). Therefore, before carrying out a panel cointegration test, it is significant to determine the order of integration of the variables. Moreover, this study employed four different unit root tests; Levin, Lin and Chu, Im, Pesaran and Shin (IPS), Breitung, and Fisher augmented Dickey-Fuller tests. The ADF test is based on the following regression:

$$\Delta x_t = \beta_0 + \emptyset T + \gamma x_{t-1} + \sum_{i=1}^{q-1} \delta_1 \Delta x_{t-1} + \epsilon_t \qquad (iv)$$

Where Δ represents the first difference operator, x_t denotes the tested variable for unit root; β is the constant; the time trend variable is T; and we include q as the number of

lags in order to avoid problems of autocorrelation in the residuals. We employed the Schwarze Bayesian Criteria to select the lag length in the ADF regression. The null hypothesis series is nonstationary for this test, in other words, contains a unit root. To avoid a spurious regression, we further employed the IPS, which is also based on the ADF procedure to test the stationarity of our variables. This test (IPS) combines the information from the cross-sectional survey, together with the time series dimensions in a way that the time series observation is required for the test to have power are fewer. Some econometric and economic researchers have found the IPS to possess superior power when examining long-run relationships in panel data (see Rafindadi, (2015)&Kjosevski, 2012).For further depth in our test results, we will also employ this method. The IPS starts by defining a separate ADF regression for each panel member with individual effects and no time trend. The regression can be specified in the following way:

$$\Delta y_{it} = \beta_i + \varphi_i y_{i,t\,1} + \sum_{j=1}^{qi} \gamma_{ij} \Delta y_{i,t\,j} + \varepsilon_{it} \qquad (v)$$

Where $i = 1, \ldots, N$ and $t = 1, \ldots, T$

sThe IPS uses different unit root tests for the N panel members. As stated earlier, the test is based on the ADF and averaged across groups. After testing the different ADF regressions, the average of the t-statistics for φ_i from the individual ADF regressions$t_{iT_i}(\varphi_i)$:

$$\bar{t}_{NT} = \frac{1}{N} \sum_{i=1}^{N} t_{iT}(\varphi_i \gamma_i) \qquad \qquad . \qquad (vi)$$

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The $\bar{t}$ is then standardized and it is demonstrated that the standardized $\bar{t}$ statistic converges to the standard normal distribution as N and T→∞. The (IPS) showed that $\bar{t}$ test has a superior performance where N and T are not large. In the case where the errors in different regressions contain a common time-specific component, they suggested a cross-sectionally demeaned version of both tests to be used (see Rafindadi & Yusof, 2015 and Muye & Muye, 2017).

3.9   Panel Cointegration Test

In order to explore the possibility of a long run convergence among our data series, we carry out a panel cointegration test. The main aim of the panel cointegration test is to combine information on similar long run relationships as well as simultaneously allow for short run changes and fixed effects to be heterogeneous across the various panel members and according toRafindadi and Yusof, (2015),Law, Azman-Saini, and Tan, (2014), accounting for such heterogeneity provides some benefits since it is illogical to assume that the vectors of cointegration are similar across all panel members. As a result of these and followingcointegration model that takes into consideration a significant amount of heterogeneity, a number of statistical tests was proposed by (Pedroni, 2004;1999). For the purpose of our analysis, we construct the test statistics using the residuals from the following presumed cointegrating regression on the basis of Equations (1 & 2) above, with test for the null of absence of cointegration being shown on the residuals of $\hat{\varepsilon}_{it}$ using:

$$\hat{\varepsilon}_{it} = \omega_i \hat{\varepsilon}_{it-1} + \mu_{it} \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \text{(vii)}$$

This technique permits for significant short and long run heterogeneity since all the β_i in Equations (1 & 2) vary across the panel members. In reality, the fixed and dynamic

effects can vary across panel members; under the alternative hypothesis, the vector of cointegration can also vary across panel members (Muye & Muye, 2017).

A number of panel cointegration tests (specifically, 7) were developed by (Pedroni, 2004;1999) based on the cointegrating residuals of ε_{it}. Three of the tests are regarded as group mean panel cointegration tests and are based on the between-dimension and are formulated by dividing the numerator by the denominator before adding over the N dimension. While four, referred to as panel cointegration tests, are based on the within-dimension formulated by separately adding both the numerator and the denominator figures over the N dimension. With regards to strength, Pedroni (2004;1999) indicates that the panel variance and group statistics are the weakest, with the panel-ADF (Augmented Dickey-Fuller) performing better while the group-ADF happens to be the strongest (Muye & Muye, 2017).

CHAPTER FOUR
DATA PRESENTATION AND ANALYSIS

4.1   Introduction

This chapter presentsand analyses data for 22 insurance companies listed on NSEfor the period of nine years(2008-2016). The investigation is with regard to the relationship between profitability as proxies by ROA, ROE and NPM as dependent variables and company size, leverage, loss ratio, premium growth and capital adequacy as independent variables. Therefore, this chapter provides the results from the analysis of data and its interpretation. The chapter is divided into four sections. Section one presents descriptive statistics of the data and variables for the study; section two discusses the correlation analysis between dependent and independent variables, panel unit root test, cointegration test, collinearity test as well as heteroscedasticity test, section three lays down the results of regression analysis that constitute the main findings of this study while section four provides testing of the hypotheses, summary of the results as well as discussion of findings

4.2   Descriptive Statistics

Table 4.1 presents a summary of the descriptive statistics of dependent and independent variables for 22 insurance companies for a period of nine years from 2008-2016 with a total of 197 observations. The figures include mean, median, maximum, minimum, standard deviation of estimate, skewness and kurtosis.

Table 4.1: Descriptive Statistics

	ROE	ROA	NPM	LV	CS	LR	CA	PG
Mean	0.019	-0.011	-20.83	1.026	9.977	0.739	0.491	0.231
Median	0.041	0.021	5.371	0.655	9.950	0.280	0.583	-0.030
Maximum	1.421	0.207	69.04	24.38	10.89	20.60	1.000	12.36
Minimum	-2.026	-0.804	-1254.1	-6.737	9.267	0.035	-2.295	-0.982
Std. Dev.	0.302	0.120	140.37	2.682	0.271	2.492	0.475	1.361
Skewness	-0.867	-3.094	-7.442	4.604	0.398	6.718	-3.487	6.952
Kurtosis	18.14	17.00	62.89	36.22	3.785	49.88	18.08	58.94
Jarque-Bera	1907.6	1925.0	31261.2	9757.0	10.26	19524.8	2266.7	27280.4
Probability	0.0000	0.000	0.000	0.000	0.005	0.000	0.000	0.000
Observations	197	197	197	197	197	197	197	197

Source: Eviews 9 output, 2018

Table 4.1 shows the descriptive statistics of the study variables. The results shows that the companies were able to achieved the average earnings from return on equity (ROE) of 0.019k from each unit of equity. The value of return on equity ranges from -2.026 to 1.421 with standard deviation of 0.30%. The results reveal that the mean of return on assets (ROA) of the insurance companies in Nigeria is -0.011k, meaning that, -0.011k of the companies' earnings were generated from each unit of total assets. The income derived from assets ranges from -0.804 to 0.207 between companies in the sample with a standard deviation of 0.120% from the sample mean. The results of descriptive statistics in respect of net profit margin (NPM) indicated that the mean stood at -20.83k with standard deviation of 140.37%. The average value of net profit margin of the

insurance companies in Nigeria ranges from -1254 to 69.04. The result shows that the major contributor to the average earnings of insurance companies in Nigeria is NPM which contributes an average of 20.83k while ROE followed with an average value of 0.019k. From the result also, ROA of the insurance companies in Nigeria contributes the least average earnings of 0.011k during the period of investigation.

The Table also reveals a mean Leverage Ratio of 1.02. This shows that only 1.02% of debt is used to finance assets by the insurance companies. Furthermore, the result indicates that the mean size of insurance companies is 9.97, implying that insurance companies listed under NSE have considerable number of customers with significant transactions. Average Loss Ratio of insurance companies was reported to be 0.74, implying that the companies' ratio of losses to gains is 0.74%. The result also indicates the percentage increase in growth premium is 0.23%. An average of 0.49 Capital Adequacy was reported, implying that the companies' risk weighted credit exposure is measured by 0.49%. In total, the study involves 197 observations

4.3 Correlation Analysis

Correlation is a statistical technique that can show whether and how strongly pairs of variables are related. It assesses how well the relationship between two variables can be described using a monotonic function. Table 4.2 presents the result of correlation analysis.

Table 4.2: Correlation Matrix

	ROE	ROA	NPM	LV	CS	LR	CA	PG
ROE	1.000							
ROA	0.236 0.361	1.000						
NPM	0.335 0.217	0.335 0.081***	1.000					
LV	-0.430 0.000*	0.132 0.063***	-0.066 0.354	1.000				
CS	0.085 0.233	0.269 0.000*	0.187 0.008*	0.258 0.612	1.000			
LR	-0.048 0.500	-0.011 0.869	-0.180 0.011*	-0.022 0.749	0.024 0.736	1.000		
CA	-0.147 0.039*	0.352 0.000*	0.075 0.292	0.008 0.907	0.258 0.621	0.072 0.312	1.000	
PG	0.088 0.218	-0.015 0.832	-0.012 0.864	0.120 0.09	0.166 0.091***	-0.018 0.793	-0.062 0.341	1.000

Source: Eviews 9 output, 2018
*, **, *** implies significance at 1%, 5% and 10% level respectively

Table 4.2 shows the correlation matrix among the variables. From the Tableit could be observed that all the predictors were correlated with the dependent variables. This shows that there was a linear correlation between the predictors and the dependent variables. It could also be observed that none of the predictors were perfectly and significantly correlated with each other. This indicates that the presence of any collinearity (and indeed multicollinearity) was controlled.

4.4   Panel Unit Root Test

Table 4.3: Panel Unit Root Test

Variables	Level				First difference			
	LLC	IPS	ADF	PP	LLC	IPS	ADF	PP
ROE	-12.34 0.1105	-4.517 0.1853	107.50 0.0900	95.86 0.1040	-16.10 0.000*	-7.22 0.000*	147.53 0.000*	223.04 0.000*
ROA	-10.14 0.1802	-3.21 0.1006	85.34 0.2012	123.74 0.1097	-21.15 0.000*	-9.33 0.000*	173.27 0.000*	234.87 0.000*
NPM	-8.42 0.000	-2.32 0.01	74.42 0.002	117.7 0.000	-18.38 0.000*	-4.41 0.000*	96.0 0.00*	234.64 0.000*
LV	-4.42 0.100	0.70 0.7581	49.26 0.2707	48.07 0.3112	-11.35 0.000*	-5.62 0.000*	125.22 0.000*	162.83 0.000*
CS	-4.71 0.110	0.24 0.5961	48.55 0.2944	46.79 0.3583	-9.86 0.000*	-4.03 0.000*	98.36 0.000*	136.37 0.000*
LR	-5.01 0.210	-2.53 0.1056	86.17 0.1001	114.23 0.1903	-30.26 0.000*	-11.10 0.000*	187.85 0.000*	263.84 0.000*
CA	-18.31 0.1071	-2.83 0.1023	67.25 0.1136	44.11 0.4667	-8.88 0.000*	-4.23 0.000*	103.59 0.000*	152.50 0.000*
PG	-4.87 0.210	-1.33 0.1901	76.13 0.1019	95.18 0.1043	-14.98 0.000*	-5.27 0.000*	111.60 0.000*	181.63 0.000*

Source: Eviews 9 output, 2018

Table 4.3 shows stationarity of the individual variables for levels and first differences. Interestingly all the variables, except Net Profit Margin, are non-stationary in their levels and become stationary when they were first differenced. This is evidenced by the fact that none of the variables, except Net Profit Margin, was less than 0.05 at levels while the variables showed, at least, one integration vector at 5% significance level on first difference. This eliminates the possibility of spurious or mis-specified regression results. It also means that since the variables are stationary at 0.05, the panel least square can be estimated.

4.5 Panel Cointegration Test

Table 4.4: Kao Panel Cointegration Test

			t-Statistic	Prob.
ADF			-8.194076	0.0000
Residual variance		0.015597		
HAC variance		0.009199		

Source: Eviews 9 output, 2018

Table 4.4 shows panel cointegration test using Kao (1999) test. From the result, there is strong evidence of panel cointegration. As such, the null hypothesis of no cointegration is therefore rejected.

4.6 Panel Collinearity Test

Table 4.5: Collinearity Test

Variables	VIF	Tolerance
LV	1.12	0.89
CS	1.45	0.69
LR	1.01	0.98
PG	1.01	0.99
CA	1.39	0.72

Source: STATA SE 12 output, 2018

Table 4.5 shows collinearity test conducted on the panel least square. Variance Inflation factor (VIF) and Tolerance were estimated. It can be observed that none of the variables had values greater than 10 on VIF, and none of the values was lower than 0.1 on Tolerance. As a rule of thumb, there is no violation of assumption of collinearity.

4.7 Panel Heteroskedasticity Test

Table 4.6: Breusch-Pagan Heteroskedasticity Test

Test	Chi2	p-value
Breusch Pagan Test	127.33	0.813
White's Test	129.32	0.724

Source: STATA SE 12 output, 2018

Table 4.6 presents Breusch-Pagan and white's heteroskedasticity tests. The result indicates no heteroskedasticity (BP = 127.33; p-value = 0.083; White = 129.32, p-value = 0.724). Based on this, the assumption of heteroskedasticity was not violated.

4.8   Regression modeling

Panel data can be analyzed using fixed effect, random effect, and pooled OLS regression models. In order to determine which of the models is appropriate for the study, two main tests were conducted. These are the Hausman test andBreush-pagan test. The Hausman test determines the appropriateness of either fixed or random, while Breush-pagan test determines the most appropriate model between fixed effect and pooled OLS regression

Table 4.7: Regression Modeling

	ROE (model 1)			ROA (model 2)			NPM (model 3)		
	FE	RE	OLS	FE	RE	OLS	FE	RE	OLS
LV	-8.99 0.00*	-9.07 0.00*	-7.93 0.00*	1.05 0.29	1.28 0.20	1.30 0.19	-0.98 0.32	-1.38 0.16	-1.72 0.08
CS	3.38 0.00*	3.55 0.00*	3.78 0.00*	0.89 0.37	1.78 0.07	2.36 0.01**	2.47 0.01**	2.58 0.01**	2.94 0.003*
LR	0.56 0.56	-0.21 0.82	-0.81 0.41	-0.53 0.59	-0.45 0.65	-0.55 0.57	-3.79 0.000*	-3.66 0.000*	-2.76 0.006*
PG	2.59 0.01**	2.08 0.03**	1.49 0.13	-0.79 0.42	-0.56 0.57	-0.52 0.59	-0.39 0.69	-0.28 0.77	-0.50 0.61
CA	1.71 0.08	-1.30 0.19	-3.09 0.00*	-1.46 0.14	1.44 0.14	4.47 0.01**	1.35 0.17	0.89 0.36	0.42 0.67
R^2	0.49	0.31	0.28	0.43	0.04	0.16	0.46	0.1	0.08
Prob	0.000	0.000	0.000	0.000	0.119	0.000	0.000	0.001	0.003
Hausman Test	17.60 0.503			10.83 0.551			15.92 0.607		
Breush-Pagan Test		15.35 0.000*			23.74 0.000*			80.19 0.000*	

Source: Eviews 9 output, 2018
*, ** implies significance at 1% & 5% level respectively
FE = Fixed Effect; RE = Random Effect; OLS = Ordinary Least Squared

Table 4.7 shows regression modeling using three model specifications. From the result presented in the table, Leverage made significant effect on ROE when Fixed Effect, Random Effect and OLS regression models were estimated. However, no significant effect of the variable was observed on ROA and NPM. There was also significant effect of Company Size on ROE and NPM when Fixed Effect, Random Effect and OLS regression models were estimated. However, only OLS regression model indicates that Company Size has significant effect on ROA. Loss Ratio was found to have significant effect on NPM only when Fixed Effect, Random Effect and OLS regression model were estimated. Furthermore, Premium Growth made significant effect on ROE when Fixed Effected and Random Effect regression models were estimated. Lastly, Capital Adequacy was found to have significant effect on ROE and ROA when OLS regression model was estimated. Additionally, model one explains 49% variability in ROE using Fixed Effect, 31% variability in ROE using Random Effect and 28% variability using OLS.

Model 2 explains 43% variability in ROA using Fixed Effect, 4% variability in ROA using Random Effect and 16% variability in ROA using OLS. Lastly, model 3 explains 46% variability in NPM when Fixed Effect model was estimated, 10% when Random Effect model was estimatedand 8% when OLS model was estimated. All the estimations show a model fit. Hausman specification test was estimated to determine a robust model to be used between Fixed Effect and Random Effect. The test indicates that Random Effect model was a robust model to be estimated. More so, Breush-Pagan test was estimated to determine a robust model to be used between Random Effect and OLS. The test indicates that Random Effect is still a robust model to be estimated.

4.9 Hypotheses Testing

Test of objective one Model one
H₀1: There is no significant relationship between determinants of profitability (company size, leverage, loss ratio, premium growth and capital adequacy) and ROA of listed insurance companies in Nigeria.

Table 4.8: Model Summary on ROA (Random Effect)

Variables	Coefficients P-value
LV	0.003849 0.2009
CS	0.077484 0.0761***
LR	-0.001662 0.6511
PG	-0.003242 0.5726
CA	0.035730 0.1494
C	-0.803942 0.0633
R-squared	0.044389
Adjusted R-squared	0.019373
F-statistic	1.774411
Prob.	0.119903

Source: Eviews 9 output, 2018
*, **, *** Implies significance at 1, 5 & 10 percent level respectively.

Table 4.8 shows the model summary of determinants of profitability (ROA) of insurance companies listed on NSE. From the model, there was significant effect as the determinants in the prediction of ROA (p-value = 0.11 > 0.05).An inspection of individual predictors indicates thatCompany Size (p-value = 0.00) made unique significant contribution in the prediction of ROAHowever, Leverage, Loss Ratio, premium growth and Capital Adequacy did not make significant contribution.. In view of this, the null hypothesis that said there is no significant relationship between determinants of profitability (company size, leverage, loss ratio, premium growth and capital adequacy) and ROA of insurance companies in Nigeria is therefore rejected.

Thedecision rule is to reject null hypothesis if p-value reported is significant at 1%, 5% and 10% levels and accepts null hypothesis if otherwise.

Test of objective two Model two

H₀2: There is no significant relationship between determinants of profitability (company size, leverage, loss ratio, premium growth and capital adequacy) and ROE of insurance companies in Nigeria.

Table 4.9: Model Summary on ROE (Random Effect)

Variables	Coefficients P-value
LV	-0.063108 0.0000*
CS	0.333928 0.0005*
LR	-0.001808 0.8266
PG	0.027629 0.0385**
CA	-0.069099 0.1930
C	-3.218565 0.0007
R-squared	0.306584
Adjusted R-squared	0.288432
F-statistic	16.88961
Prob.	0.000000

Source: Eviews 9 output, 2018
*, **, *** *Implies significance at 1, 5 & 10 percent level respectively.*

Table 4.9 shows the model summary of determinants of profitability (ROE) of insurance companies listed on NSE. From the model, there was a significant effect of the determinants in the prediction of ROE (p-value = 0.00 < 0.05). Despite reaching statistical significance, the predictors show 30.6% of variability in ROE, implying that other variables could account for 69.4% of the variability. An inspection of individual predictors indicates that Leverage (p-value = 0.00), Company Size (p-value = 0.00) and Premium Growth (p-value = 0.00) make unique significant contribution in the

prediction of ROE of insurance companies. However, Loss Ratio and Capital Adequacy did not make significant contribution. Considering the magnitude of coefficient of Leverage, Company Size and Premium Growth, it can be deduced that Leverage has a negative effect while Company size and Premium Growth has positive effect on ROE. In view of this, the null hypothesis that said there is no significant relationship between determinants of profitability (company size, leverage, loss ratio, premium growth and capital adequacy) and ROE of insurance companies in Nigeria was therefore rejected. The decision rule is to reject null hypothesis if p-value reported is significant at 1%, 5% and 10% levels and accepts null hypothesis if otherwise.

Test of objective three Model three

H$_o$3: There is no significant relationship between determinants of profitability (company size, leverage, loss ratio, premium growth and capital adequacy) and NPM of insurance companies in Nigeria.

Table 4.10: Model Summary on NPM (Random Effect)

Variables	Coefficients P-value
LV	-4.679174 0.1688
CS	127.5747 0.0104*
LR	-15.21247 0.0003*
PG	-1.818325 0.7794
CA	25.22201 0.3695
C	-1289.706 0.0090
R-squared	0.100786
Adjusted R-squared	0.077247
F-statistic	4.281559
Prob.	0.001029

Source: Eviews 9 output, 2018
*, **, *** *Implies significance at 1, 5 & 10 percent level respectively.*

Table 4.10 shows the model summary of determinants of profitability (NPM) of insurance companies listed on NSE. From the model, there was a significant effect of the determinants in the prediction of NPM (p-value = 0.00 < 0.05). Despite reaching statistical significance, the predictors explain only 10% of variability in NPM, implying that other variables could account for 90% of the variability. An inspection of individual predictors indicates that Company Size (p-value = 0.01) and Lost Ratio (p-value = 0.00) made significant contribution in the prediction NPM. However, Leverage, Premium Growth and Capital Adequacy did not make significant contribution. Considering the magnitude of coefficient of Company Size and Loss Ration, it can be deduced that Loss Ratio has a negative effect while Company size has positive effect on NPM. In view of this, the null hypothesis that said there is no significant relationship between determinants of profitability (company size, leverage, loss ratio, premium growth and capital adequacy) and NPM of insurance companies in Nigeria was therefore rejected. The decision rule is to reject null hypothesis if p-value reported is significant at 1%, 5% and 10% levels and accepts null hypothesis if otherwise.

4.10   Summary of the results
Table 4.11: Summary ofResults

	ROA	ROE	NPM
LV	0.003849	-0.063108	-4.679174
	0.2009	0.0000*	0.1688
CS	0.077484	0.333928	127.5747
	0.0761***	0.0005*	0.0104*
LR	-0.001662	-0.001808	-15.21247
	0.6511	0.8266	0.0003*
PG	-0.003242	0.027629	-1.818325
	0.5726	0.0385**	0.7794
CA	0.035730	-0.069099	25.22201
	0.1494	0.1930	0.3695
R^2	0.044389	0.306584	0.100786
F-statistics	1.774411	16.88961	4.281559
Prob	0.119903	0.000000	0.001029

Source: Eviews 9 output, 2018

Table 4.11 shows the summary of results presented above. From the table, there was a significant effect of LV, CS, LR, PG and CA on ROE and NPM. However, no significant effect of these predictors was noticed on ROA. When the individual predictors were inspected, LV (negative effect), Company Size (positive effect) and Premium Growth (positive effect) made significant contribution in the prediction of ROE. Furthermore, Company Size (positive effect) and Loss Ratio (negative effect) made significant contribution in the prediction of NPM. Nevertheless, none of the predictors made significant contribution in the prediction of ROA. On the other hand, ROE was explained by 30.6% of variability while NPM was explained by only 10% of variability. This indicates that other variables could still account for 69.4% of variability in ROE and 90% of variability in NPM.

4.11 Discussions of the findings

This study investigates the determinants of profitability of insurance companies listed on Nigerian Stock Exchange. Results were analyzed using Random Effect regression model. ROE, ROA and NPM were used as proxies for profitability while Company Size,Leverage, Loss Ratio, Premium Growth and Capital Adequacy were used as determinants for profitability.

 Findings were discussed in accordance with the research hypotheses, Findings from research hypothesis one revealed that there is significant effect of LV, CS, LR, PG and CA in the prediction of ROA.When the individual predictors were inspected separately. The only variables that made unique significant contribution in the prediction of ROE is Company Size. However, Leverage, Loss Ratio, Premium Growth and Capital Adequacy did not make any significant contribution However, this finding is in

consistent with the findings of Hifza (2011) and Sumaira and Amjad (2013), who found that ROA is determined by company size, leverage and loss ratio.

Findings from the research hypothesis two revealed the existence of significant effect of LV, CS, LR, PG and CA in the prediction of ROE of insurance companies. When the individual predictors were inspected separately.The only variables that made unique significant contribution in the prediction of ROE are Leverage, Company Size and Premium Growth. However, Loss Ratio and Capital Adequacy did not make any significant contribution. Considering the negative coefficient of leverage, it implies that an increase in debt to finance company's assets could lead to decrease in ROE. For example, incurred debts could generate more interest. Therefore, as more debts are used to finance assets, companies stand a chance of loss. Although higher profits could be made when much debt is used to run a business, however, the interest attached to such debt could counterbalance and diminish the profit. This could even be worse when it takes the company more time to pay their debts. An insurance company with significantly more debt than equity is considered to be highly leveraged. In more specific terms, the risk of an insurer may increase when it increases its leverage. This finding is consistent with the opinion of Renbao and Wong (2004) who stated that leverage beyond the optimum level could result in higher risk and low value of the firm.The finding also supports the findings of Harrington (2005) who argued that insurance companies with lower leverage will generally report higher profitability. He therefore concluded that leverage ratio is expected to have a negative relationship with profitability. On the basis of their findings, leverage was found to be one of the determinants of ROE of insurance companies.

The positive coefficient of Company Size indicates that size of an insurance company positively determines its ROE. For example, a company with high staff strength, many branches, and numerous customers are likely to make more profits. In other terms, large insurers usually have greater capacity for dealing with adverse market fluctuations than smaller ones. Furthermore, large insurance companies have economies of scale in terms of the labor cost, which is the most significant production factor for deliveringinsurance services. This finding is consistent with the findings of Sumaira and Amjad (2013) who also found that Company Size impacts profitability of firms. Findings of Hifza (2011) also concurred with the findings of the study by pointing that size of a company is positively related to profitability. The positive coefficient of Premium Growth indicates that increase in gross written premiums could lead to increase in income from the money invested by shareholder. This finding also supports the findings of Hizfa (2011) who found significant relationship between Premium Growth and ROE.

Findings from research hypothesis three revealed that there was significant of LV, CS, LR, PG and CA in the prediction of NPM of insurance companies. However, only 10% of NPM is explained by these variables. Furthermore, only Company Size and Loss Ratio made significant contribution in the prediction of NPM. Considering the positive coefficient of Company Size, it can be inferred that size of an insurance company, as measured by staff strength and number of branches, could determine the percentage of profit generated from total transactions made. For example, an insurance company with numerous staff and different braches is bound to make numerous transactions, thereby generating more profit. This finding is consistent with that of Mwangi and Murigu (2015) who also found that company size is associated with NPM and therefore contributes in its prediction.

The negative coefficient of Loss Ratio connotes that increase in ratio of total losses incurred in claims could lead to decrease in the percentage of profit generated from total transaction made. This further indicates that insurance companies with high loss ratio are bound to have fewer profit margins. Insurance companies that consistently experience high loss ratios may be in bad financial health. It is an indication that they are not collecting enough premiums to pay claims, expenses, and still make a reasonable profit. Accordingly, it is expected that loss ratio will have a negative impact on Net Profit Margin of insurance companies. This finding is consistent with the findings of Sumaira and Amjad (2013) who found Loss Ratio as one of the determinants of Net Profit Margins. The finding further supports the findings of Daniel and Tilahun (2013) who also found that loss ratio is negatively associated with Net Profit Margin as a measure of profitability.In general, it can be inferred that determinants of profitability are Leverage, Company Size, Premium Growth and Loss Ratio. However, other variables could also account for profitability of insurance companies.

CHAPTER FIVE
SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1   Introduction

This chapter is concerned with the presentation of concluding remarks and consists of five sections including this introduction. Section two summarizes the study, section three presents the findings and conclusions, section four dwells on recommendations while the last section identifies frontiers for further research.

5.2   Summary

This study investigates the determinants of profitability of insurance companies listed on Nigerian Stock Exchange (NSE). The study was conducted in five chapters. Chapter one focused on introduction; problem statement, objectives of the study, research questions and research hypotheses. One of the major problems that call for the study was based on underperformance of insurance companies in Nigeria. This underperformance was a measure of cash flow problem; struggle to settle claims and lack of investible funds. Another problem was generalization of research findings by other related studies in Nigeria. Such studies were only conducted on regional basis. The present study is therefore conducted to provide holistic findings that would be generalized to insurance companies in Nigeria. Variables used as determinants were company size, leverage, loss ratio, premium growth and capital adequacy while profitability was measured using Return on Assets, Return on Equity, and Net Profit Margin.

In chapter two, related literatures and indeed empirical studies were reviewed. Based on the reviewed of the empirical studies, it is observed that, although several studies were conducted on the determinants of profitability of insurance companies in developed and

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developing countries (Hamdan, 2008, Cummins and Nini, 2002, Adams and Buckles 2003, Shiu 2014, Sumaira and Amjad, 2013, Malik, 2011, Kozak, 2011, Daniel and Tilahun, 2013, Hifza 2011), however, majority of these studies measured profitability using only one or two proxies which are return on assets (ROA), return on equity (ROE) or net profit margin (NPM). Though, ROA, ROE and NPM are proxies of profitability but using a single proxy to determine profitability is not enough because profitability entails ROA, ROE and NPM. Therefore, in order to accurately measure profitability, this study unlike previous ones, used three proxies of profitability (ROA, ROE and NPM) comprehensively in measuring profitability. Thus, this study intends to fill this gap by incorporating three proxies of profitability in measuring profitability of insurance companies.

Chapter three focused on the methodology employed for the study. Ex-post facto research, involving cross section and times series (panel data) was adopted. The population of the study comprised of all 22 insurance companies listed on the Nigerian Stock Exchange as at 31st December, 2016. Data was obtained from financial statements of individual insurance companies. This includes income statements, statement of financial position, cash flow statement and notes to accounts. Furthermore, supplementary information was obtained from insurance companies' website, National Insurance Commission (NAICOM) and Nigerian Insurance Association (NIA). The data collected spanned a period of 9 years (2008 - 2016) and was subsequently analyzed, usingpanel data analysis in Stata version 12 and Eviews version 9.Software.

In order to achieve the objective of this research work, panel data model and estimation techniques were used to interpret the relationship among the variables. Previous studies; (Shiu, 2014, Malik 2011, &Charumathi, 2012) mostly developed this model to identify

the determinants of insurance companies' profitability. In addition to the foregoing analysis, inferential statistics, mean values and standard deviations were used in analysing the general trends of the data from 2008 to 2016 (9 years). This is in order to evaluate the sector profitability of the companies and in addition to that, the result from the inferential statistics was used as a guiding principle to the final result.

Chapter four presented findings of the study. Results were analyzed using Random Effect regression model, having found that the model is more robust than Fixed Effect model and pooled OLS. Diagnostic tests show that there was no presence of collinearity and heteroskedasticity. The tests further show that the data obtained is stationary at first difference. In summary, findings of the study revealed a significant effect of the determinants in the prediction of ROE and NPM. However, Leverage, Company Size and Premium Growth made unique significant contribution in the prediction of ROE. While leverage portrays negative effect, company size and premium growth were found to have positive effect on ROE. Furthermore, Company Size and Loss Ratio were found to be the determinants of NPM, with Company Size having a positive effect and Loss Ratio having a negative effect. No significant effect of these predictors was observed on ROA.

5.3 Conclusion

This study examined the determinants of profitability of insurance companies in Nigeria. It covered 22 insurancecompanies for a period of 9 years (2008-2016) and employed panel data approach for both descriptive and inferential data analyses. As a result, a number of findings have been made and major among them are stated below:

Findings from research hypothesis one revealed that there was no significant effect of LV, CS, LR, PG and CA in the prediction of ROA. This implies that none of these

predictors could predict or determine ROA of insurance companies. However, this finding contradicts the findings of Hifza (2011) and Sumaira and Amjad (2013) who found that ROA is determined by size of firm, leverage and loss ratio.

The findings from hypothesis two revealed the existence of significant effect of CS, LV, LR, PG and CA in the prediction of ROE of insurance companies. When the individual predictors were inspected separately, the only variables that made unique significant contribution in the prediction of ROE are Leverage, Company Size and Premium Growth. However, Loss Ratio and Capital Adequacy did not make any significant contribution.

Considering the negative coefficient of leverage, it implies that an increase in debt to finance company's assets could lead to decrease in ROE. For example, incurred debts could generate more interest. Therefore, as more debts are used to finance assets, companies stand a chance of loss. Although higher profits could be made when much debt is used to run a business, however, the interest attached to such debt could counterbalance and diminish the profit. This could even be worse when it takes the company more time to pay its debts. An insurance company with significantly more debt than equity is considered to be highly leveraged. In more specific term, the risk of an insurer may increase when it increases its leverage.

The positive coefficient of Company Size indicates that size of an insurance company positively determines its ROE. For example, a company with high staff strength, many branches, and numerous customers is likely to make more profits. In other words, large insurers usually have greater capacity for dealing with adverse market fluctuations than smaller ones. Furthermore, large insurance companies have economies of scale in terms

of labour cost, which is the most significant production factor for deliveringinsurance services.

Research hypothesis three revealed that there was significance of LV, CS, LR, PG and CA in the prediction of NPM of insurance companies. However, only 10% of NPM is explained by these variables. Furthermore, only Company Size and Loss Ratio made significant contribution in the prediction of NPM. Considering the positive coefficient of Company Size, it can be inferred that size of an insurance company, as measured by staff strength and number of branches, could determine the percentage of profit generated from total transactions made. For example, an insurance company with numerous staff and many braches is bound to make numerous transactions, thereby generating more profit.

The negative coefficient of Loss Ratio connotes that increase in ratio of total losses incurred in claims could lead to decrease in the percentage of profit generated from total transaction made. This further indicates that insurance companies with high loss ratio are bound to have smaller profit margins. Insurance companies that consistently experience high loss ratios may be in bad financial health. It is an indication that they are not collecting enough premiums to pay claims, expenses, and still make a reasonable profit. Accordingly, it is expected that loss ratio will have a negative impact on Net Profit Margin of insurance companies. In general, it can be inferred that determinants of profitability are Leverage, Company Size, Premium Growth and Loss Ratio. However, other variables could also account for profitability of insurance companies.

5.4   Recommendations

On the basis of the findings of the study, the following recommendationsare made:

i.   Insurance companies should limit theirdebt they useto finance their assets. Rather, the companies should use their little profits generated to do that. However, in cases where debts remain last alternative, such debt should attract little interest and be paid within short period of time.

ii.   Insurance companies should maximize their profits by creating more branches throughout the nation. Furthermore, their staff should be made up of professionals who are ready to help in maximizing productivity.

iii. Insurance companies shouldcooperate with the regulators to look in to economic, environmental and technological factors. Embracing modern technologies (i.e. interacting with customers electronically), this may enhance the general profitability of insurance companies in Nigeria.

iv.   Insurance companies should give special attention to their exposure to underwriting risk. Insurance companies that under-write high-risk business will be required to purchase more reinsurance or to utilize alternative risk transfer techniques to mitigate the impact of unexpected underwriting losses.

v.   Insurance companies in partnership with the Federal Government of Nigeria should employ appropriate policies aimed at increasing their investment and revenue base. This will be achieved by implementing/enforcing the compulsory insurance of all public buildings as well as those under construction; and compulsory insurance of all states and local governments to enroll their employees in the National Health Insurance Scheme. By doing this, equity capital and growth written premiums of the insurance companies will be increased.

vi. Based on the study findings, premium growth affects profitabilitypositively, theresearcher recommends that insurancecompanies should improve their deposit base in order to earn higher profit.

vii. Since the study predicts that other factors could still account for profitability, it was recommended that insurance companies should take into consideration variables like corporate social responsibility, Account Payable Period, Account Receivable Period, Earnings per share and other related variables.

viii. More research should be conducted to explore other factors that could determine profitability of insurance companies in Nigeria.

5.5   Implications of the Study

Several implications were derived from the study on the basis of the empirical findings.

In the first model (Hypothesis 1), the R-squared is 0.04, implying that the predictors only explain 4% of variability in ROA. Despite having a good model fit, none of the predictors made significant effect in the prediction of ROA. This implies that Leverage, Company Size, Loss Ratio, Growth Premium and Capital Adequacy are not the determinants of Return on Assets. By implication, insurance companies should have little concern for these variables over Return on Assets. Other variables could however determine Return on Assets of the insurance companies in Nigeria.

In the second model (Hypothesis 2), the R-squared of 0.3 indicates that ROE is explained by 30% of the predictors. Among these predictors, only Leverage, Company Size and Premium Growth made significant contribution in the prediction of ROE. This implies that insurance companies should take into consideration the amount of funds requires to finance their assets, the size of their company and gross written

premium.The positive coefficient of Company Size indicates that high staff strength and number of branches could result into high Return on Equity. For this reason, insurance companies should maximize their Return on Equity by increasing their staff strength and number of branches nationwide. The negative coefficient of Leverage indicates that an increase in incurred debts to finance assets could result into low Return on Equity. This implies that insurance companies should limit their debt required to finance their assets. Rather, the companies should use the little profits they generate to finance their assets. Finally, the positive coefficient of Premium Growth indicates that increase in gross written premiums could lead to increase in income from the money invested by shareholders. By implication, insurance companies should increase their gross written premium.

In the third model (Hypothesis 3), despite having a good model fit, the predictors indicated a 10% of variability in NPM. Nonetheless, Company Size and Loss Ratio made significant contribution in the prediction of NPM. This implies that insurance companies should take into consideration the effect of Company Size and Loss Ratio in their daily transactions. The positive coefficient of Company Size indicates that increase in staff strength and number of branches could result to increase in the total profit. This therefore implies that insurance companies should increase their staff strength and build more branches in order to increase their net profits. Lastly, the negative coefficient of Loss Ratio connotes that increase in ratio of total losses incurred in claims could lead to decrease in the percentage of profit generated from total transactions made. By implication, insurance companies with high loss ratio are bound to have fewer profit margins. For this reason, insurance companies should collect enough premiums to pay claims and expenses in order to maximize their net profit margin.

5.6   Suggested Areas for Further Studies

This study has laid some groundwork to explore the impact of company internal determinants on profitability of insurance companieslisted on NSE upon which a more detailed evaluation could be based. Further research is required to develop new hypotheses and design new variables to reflect the influence of company determinants on profitability. In addition, a more detailed work that will study external characteristics and corporate performance of Nigerian listed insurance companies could help in resolving some theoretical underpinnings of company profitability determinants.

The study also used 22 insurance companies listed on the floor of the NSE between 2008 and 2016. Besides, the analysis did not touch on other companies determinants (e.g. age of the firm, number of employees, board attributes, dividend, corporate social responsibility among others) and performance indicators such as price earnings ratio, Tobin's Q, return on sales, return on capital employed, return on investment, residual income, dividend yield, growth in sales, growth opportunities and so on. The need for further studies that will use the entire population of thecompanies, more company determinants and profitability indicators is suggested.

This research examined the impact of internal company determinants on profitability of insurance companies listed on the NSE. The need for further studies that will examine the influence of company profitability on internal profitability determinants in Nigeria is recommended. Another study can be conducted to investigate how the study variables are perceived by insurance companies. A phenomenological study can be conducted to explore the experiences of insurance companies in relation to their loss and profits. Such study could adopt a qualitative approach using in-depth interview to explore the life experiences of the companies.

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Appendices

Appendix A

S/No.	Names of Insurance Companies Listed on the NSE	Date Listed
1.	AIICO Insurance Plc	03-12-1990
2.	Consolidated Hallmark Insurance Plc	22-02-2008
3.	Continental Re-Insurance Plc	12-06-2007
4.	Cornerstone Insurance Plc	13-08-1997
5.	Goldlink Insurance Plc	12-02-2008
6.	Great Nigerian Insurance Plc	11-10-2005
7.	Guinea Insurance Plc	17-01-1991
8.	International Energy Insurance Plc	13-07-2007
9.	Lasaco Insurance Plc	14-06-1991
10.	Law Union and Rock Insurance Plc	08-07-1990
11.	Linkage Insurance Plc	18-11-2003
12.	Mutual Benefits Assurance Plc	03-06-2002
13.	Nem Insurance Nigeria Plc	05-09-1990
14.	Niger Insurance Plc	01-09-1993
15.	Prestige Insurance Plc	03-12-1990
16.	Regency Alliance Insurance Plc	27-05-2008
17.	Royal Exchange Assurance Plc	03-12-1990
18.	Sovereign Trust Insurance Plc	29-11-2006
19.	Standard Alliance Insurance Plc	19-12-2003
20.	Unic Insurance Plc	27-02-1990
21.	Universal Insurance Plc	11-02-2008
22.	Wapic Insurance Plc	05-09-1990

Source: Nigerian Stock Exchange Factbooks, 2008 – 2016

Appendix B

Dependent Variable: ROE
Method: Panel EGLS (Cross-section random effects)
Date: 04/29/18   Time: 22:14
Sample: 2008 2016
Periods included: 9
Cross-sections included: 22
Total panel (unbalanced) observations: 197
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LV	-0.063108	0.006956	-9.072803	0.0000
CS	0.333928	0.093855	3.557915	0.0005
LR	-0.001808	0.008240	-0.219369	0.8266
PG	0.027629	0.013257	2.084048	0.0385
CA	-0.069099	0.052891	-1.306456	0.1930
C	-3.218565	0.929050	-3.464361	0.0007

Effects Specification

	S.D.	Rho
Cross-section random	0.104750	0.1719
Idiosyncratic random	0.229913	0.8281

Weighted Statistics

R-squared	0.306584	Mean dependent var	0.011723
Adjusted R-squared	0.288432	S.D. dependent var	0.281364
S.E. of regression	0.237343	Sum squared resid	10.75938
F-statistic	16.88961	Durbin-Watson stat	1.942212
Prob(F-statistic)	0.000000		

Unweighted Statistics

R-squared	0.263620	Mean dependent var	0.019839
Sum squared resid	13.17935	Durbin-Watson stat	1.585587

Dependent Variable: ROA
Method: Panel EGLS (Cross-section random effects)
Date: 04/29/18   Time: 22:15
Sample: 2008 2016
Periods included: 9
Cross-sections included: 22
Total panel (unbalanced) observations: 197
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LV	0.003849	0.002999	1.283437	0.2009
CS	0.077484	0.043445	1.783495	0.0761
LR	-0.001662	0.003669	-0.452973	0.6511

Variable	Coefficient	Std. Error	t-Statistic	Prob.
PG	-0.003242	0.005735	-0.565215	0.5726
CA	0.035730	0.024682	1.447591	0.1494
C	-0.803942	0.430341	-1.868151	0.0633

Effects Specification		S.D.	Rho
Cross-section random		0.055931	0.2469
Idiosyncratic random		0.097673	0.7531

Weighted Statistics

R-squared	0.044389	Mean dependent var	-0.005678
Adjusted R-squared	0.019373	S.D. dependent var	0.100112
S.E. of regression	0.099138	Sum squared resid	1.877228
F-statistic	1.774411	Durbin-Watson stat	2.041677
Prob(F-statistic)	0.119903		

Unweighted Statistics

R-squared	0.139115	Mean dependent var	-0.011299
Sum squared resid	2.456703	Durbin-Watson stat	1.560097

Dependent Variable: NPM
Method: Panel EGLS (Cross-section random effects)
Date: 04/29/18   Time: 22:15
Sample: 2008 2016
Periods included: 9
Cross-sections included: 22
Total panel (unbalanced) observations: 197
Swamy and Arora estimator of component variances

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LV	-4.679174	3.387476	-1.381316	0.1688
CS	127.5747	49.32595	2.586362	0.0104
LR	-15.21247	4.153492	-3.662573	0.0003
PG	-1.818325	6.481208	-0.280553	0.7794
CA	25.22201	28.04009	0.899498	0.3695
C	-1289.706	488.6196	-2.639490	0.0090

Effects Specification		S.D.	Rho
Cross-section random		64.14225	0.2529
Idiosyncratic random		110.2361	0.7471

Weighted Statistics

R-squared	0.100786	Mean dependent var	-10.35587
Adjusted R-squared	0.077247	S.D. dependent var	117.9737
S.E. of regression	113.3274	Sum squared resid	2453034.
F-statistic	4.281559	Durbin-Watson stat	0.918160
Prob(F-statistic)	0.001029		

Unweighted Statistics

R-squared	0.074920	Mean dependent var	-20.83819
Sum squared resid	3572694.	Durbin-Watson stat	0.630414

	ROE	ROA	NPM	LV	CS	LR	PG	CA
Mean	0.019839	-0.011299	-20.83819	1.026138	9.977669	0.739124	0.231130	0.491401
Median	0.041406	0.021436	5.371232	0.655835	9.950338	0.280394	-0.030393	0.583303
Maximum	1.421790	0.207550	69.04260	24.38503	10.89974	20.60523	12.36820	1.000000
Minimum	-2.026151	-0.804146	-1254.170	-6.737542	9.267154	0.035219	-0.982014	-2.295071
Std. Dev.	0.302181	0.120663	140.3719	2.682823	0.271212	2.492149	1.361447	0.475803
Skewness	-0.867820	-3.094210	-7.442444	4.604968	0.398127	6.718242	6.952010	-3.487037
Kurtosis	18.14583	17.00810	62.89087	36.22426	3.785331	49.88415	58.94808	18.08372
Jarque-Bera	1907.686	1925.046	31261.24	9757.035	10.26669	19524.85	27280.47	2266.783
Probability	0.000000	0.000000	0.000000	0.000000	0.005897	0.000000	0.000000	0.000000
Sum	3.908342	-2.225940	-4105.123	202.1493	1965.601	145.6075	45.53253	96.80594
Sum Sq. Dev.	17.89747	2.853693	3862038.	1410.717	14.41701	1217.318	363.2932	44.37212
Observations	197	197	197	197	197	197	197	197

Kao Residual Cointegration Test
Series: ROE ROA NPM LV CS LR PG CA
Date: 04/29/18   Time: 22:19
Sample: 2008 2016
Included observations: 198
Null Hypothesis: No cointegration
Trend assumption: No deterministic trend
User-specified lag length: 1
Newey-West automatic bandwidth selection and Bartlett kernel

	t-Statistic	Prob.
ADF	-4.841971	0.0000

Residual variance	0.071794	
HAC variance	0.026882	

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(RESID)
Method: Least Squares
Date: 04/29/18   Time: 22:19
Sample (adjusted): 2010 2016
Included observations: 153 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
RESID(-1)	-1.418987	0.121845	-11.64580	0.0000
D(RESID(-1))	0.255114	0.076402	3.339125	0.0011

R-squared	0.564479	Mean dependent var	0.005036
Adjusted R-squared	0.561594	S.D. dependent var	0.288411
S.E. of regression	0.190964	Akaike info criterion	-0.460482
Sum squared resid	5.506530	Schwarz criterion	-0.420869
Log likelihood	37.22691	Hannan-Quinn criter.	-0.444391
Durbin-Watson stat	2.107194		

Panel unit root test: Summary
Series: ROE
Date: 04/29/18   Time: 22:19
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.0834	0.0000	22	154
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.33939	0.0097	22	154
ADF - Fisher Chi-square	77.0204	0.0015	22	154
PP - Fisher Chi-square	95.8693	0.0000	22	176

** Probabilities for Fisher tests are computed using an asymptotic Chi
      -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: ROA
Date: 04/29/18   Time: 22:20
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.1496	0.0000	22	154
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.21936	0.0006	22	154
ADF - Fisher Chi-square	85.3441	0.0002	22	154
PP - Fisher Chi-square	123.749	0.0000	22	176

** Probabilities for Fisher tests are computed using an asymptotic Chi
      -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: NPM

Date: 04/29/18   Time: 22:20
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-8.42476	0.0000	22	154
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.32210	0.0101	22	154
ADF - Fisher Chi-square	74.4264	0.0028	22	154
PP - Fisher Chi-square	117.715	0.0000	22	176

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LV
Date: 04/29/18   Time: 22:21
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-4.31213	0.0000	22	154
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.92548	0.8226	22	154
ADF - Fisher Chi-square	45.3670	0.4148	22	154
PP - Fisher Chi-square	48.0756	0.3112	22	176

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: CS
Date: 04/29/18   Time: 22:21
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.85026	0.0000	22	154

			Cross-sections	Obs
Im, Pesaran and Shin W-stat	0.00206	0.5008	22	154
ADF - Fisher Chi-square	51.2249	0.2113	22	154
PP - Fisher Chi-square	46.7988	0.3583	22	176

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: LR
Date: 04/29/18   Time: 22:21
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.68633	0.0036	22	154
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-0.53024	0.2980	22	154
ADF - Fisher Chi-square	57.9630	0.0772	22	154
PP - Fisher Chi-square	114.238	0.0000	22	176

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: PG
Date: 04/29/18   Time: 22:22
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	0.70275	0.7589	22	153
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	0.34875	0.6364	22	153
ADF - Fisher Chi-square	50.2506	0.2396	22	153
PP - Fisher Chi-square	95.5652	0.0000	22	175

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: CA
Date: 04/29/18   Time: 22:22
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1

Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-18.3345	0.0000	22	154
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-2.22542	0.0130	22	154
ADF - Fisher Chi-square	62.7268	0.0331	22	154
PP - Fisher Chi-square	44.1160	0.4667	22	176

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(ROE)
Date: 04/29/18   Time: 22:24
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-9.83559	0.0000	22	132
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.88807	0.0001	22	132
ADF - Fisher Chi-square	96.9168	0.0000	22	132
PP - Fisher Chi-square	223.048	0.0000	22	154

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(ROA)
Date: 04/29/18   Time: 22:24
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-13.9891	0.0000	22	132
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.55596	0.0000	22	132
ADF - Fisher Chi-square	102.122	0.0000	22	132
PP - Fisher Chi-square	234.878	0.0000	22	154

Panel unit root test: Summary
Series: D(NPM)
Date: 04/29/18   Time: 22:28
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-18.3823	0.0000	22	132
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-4.41249	0.0000	22	132
ADF - Fisher Chi-square	96.0085	0.0000	22	132
PP - Fisher Chi-square	234.645	0.0000	22	154

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LV)
Date: 04/29/18   Time: 22:28
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-10.0523	0.0000	22	132
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-3.19876	0.0007	22	132
ADF - Fisher Chi-square	92.0476	0.0000	22	132
PP - Fisher Chi-square	162.838	0.0000	22	154

** Probabilities for Fisher tests are computed using an asymptotic Chi
    -square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(CS)
Date: 04/29/18   Time: 22:28
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-5.42877	0.0000	22	132
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.76465	0.0388	22	132
ADF - Fisher Chi-square	63.4216	0.0291	22	132
PP - Fisher Chi-square	136.357	0.0000	22	154

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(LR)
Date: 04/29/18   Time: 22:29
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-27.6846	0.0000	22	132
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-7.13009	0.0000	22	132
ADF - Fisher Chi-square	130.430	0.0000	22	132
PP - Fisher Chi-square	263.841	0.0000	22	154

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(PG)
Date: 04/29/18   Time: 22:29
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-2.85790	0.0021	22	131
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.18839	0.1173	22	131
ADF - Fisher Chi-square	64.3465	0.0243	22	131
PP - Fisher Chi-square	182.792	0.0000	22	153

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Panel unit root test: Summary
Series: D(CA)
Date: 04/29/18   Time: 22:30
Sample: 2008 2016
Exogenous variables: Individual effects
User-specified lags: 1
Newey-West automatic bandwidth selection and Bartlett kernel
Balanced observations for each test

Method	Statistic	Prob.**	Cross-sections	Obs
Null: Unit root (assumes common unit root process)				
Levin, Lin & Chu t*	-3.99708	0.0000	22	132
Null: Unit root (assumes individual unit root process)				
Im, Pesaran and Shin W-stat	-1.85904	0.0315	22	132
ADF - Fisher Chi-square	71.2639	0.0058	22	132
PP - Fisher Chi-square	152.508	0.0000	22	154

** Probabilities for Fisher tests are computed using an asymptotic Chi
-square distribution. All other tests assume asymptotic normality.

Correlated Random Effects - Hausman Test - ROE
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	17.607910	5	0.5035

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LV	-0.066301	-0.063108	0.000006	0.1888
CS	0.498469	0.333928	0.012821	0.1462
LR	0.005799	-0.001808	0.000036	0.2033
PG	0.037922	0.027629	0.000037	0.0909
CA	0.150317	-0.069099	0.004889	0.0017

Correlated Random Effects - Hausman Test - ROA
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	10.838726	5	0.5547

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.

LV	0.003303	0.003849	0.000001	0.5434
CS	0.055998	0.077484	0.002016	0.6323
LR	-0.002305	-0.001662	0.000005	0.7789
PG	-0.004929	-0.003242	0.000006	0.4724
CA	-0.054436	0.035730	0.000778	0.0012

Correlated Random Effects - Hausman Test - NPM
Equation: Untitled
Test cross-section random effects

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross-section random	15.922472	5	0.6071

Cross-section random effects test comparisons:

Variable	Fixed	Random	Var(Diff.)	Prob.
LV	-3.487876	-4.679174	1.004761	0.2346
CS	174.227830	127.574749	2539.462308	0.3546
LR	-18.514761	-15.212466	6.575820	0.1978
PG	-2.757712	-1.818325	6.919538	0.7210
CA	57.046644	25.222009	980.788205	0.3095