EFFECT OF CLAIM COST ON INSURERS' PROFITABILITY IN NIGERIA

Tajudeen Olalekan Yusuf PhD
Department of Actuarial Science & Insurance,
Faculty of Business Administration
University of Lagos, Nigeria.
toyusuf7@yahoo.com

***Francis Sewhenu Dansu**
Department of Accounting & Finance (Insurance Unit),
Faculty of Management Sciences
Lagos State University, Lagos, Nigeria.
masenohvi_1@yahoo.com

Abstract

This study examines the relationship between claims cost and profitability in the Non – life sector of the Nigerian insurance industry. The study also develops two linear regression models that can be used to forecast future events in the industry. Data were generated from the financial statements of ten (10) insurance companies covering a period of ten years (2002 – 2011). These data were analysed using descriptive statistics, coefficient of determination (R^2), ANOVA (F), standard error test, test of correlation (T), multiple linear regression and ordinary least square Regression techniques. In addition, two hypotheses were also tested. The results revealed that PBT (profitability) correlates directly with NC (Net Claims) and ER (Expense Ratio) but correlates inversely with LR (Loss Ratio). It also showed that for every one percent increase in NC, there will be a corresponding increase of 36.7% in LR. The policy implications of this study for the stakeholders of the insurance industry are numerous. Nigerian insurers should pay due attention to their underwriting activities to ensure objective risk selection and management. In addition, insurers need to invest more on human capital development and staff motivation as these enhance productivity and subsequently profitability.

Keywords: *Profitability, Claim Cost, Underwriting, Claims Management*

1. INTRODUCTION

A number of empirical studies have been conducted to explore issues relating to claim handling and settlement, and to a lesser extent issues on claim cost. Most of these studies focused on claim fraud and litigation (for example, see Crocker and Tennyson, 2002*;* Derrig, 2002; Doerpinghaus, Schmit, and Yeh, 2003; Studdert, Mello, Gawande, Gandhi, Kachalia, Yoon, Puopolo, and Brennan, 2006). Few other studies aim at investigating the profitability of insurance business are conducted in the developed economies (Malik, 2011; Born and Boyer, 2011; Ayele, 2012; Charumathi, 2012). Their findings generate the need for a similar study in a developing economy like Nigeria.

The basic theory of insurance provides that a fair premium must be adequate to cover claim cost, administrative and underwriting expenses and reasonable profit (Diacon, 1983; Harrington and Niehaus, 2006; Epetimehin and Ekundayo, 2012). This can only be achieved with a high level of accuracy in the underwriter's forecast since insurance claim is prospectively estimated. The possibility of this is further complicated by the economic theorem that actual result sometimes differ from the expected. An insurer only knows with relative certainty how much profit or loss it made during a given period after several years because only 40% of their incurred losses are paid as at the close of a financial year (McClenahan, nd). This means that claims incurred in previous years could find its way into the present year's account thereby increasing the expenses. It seems apparent that the difficulty created by the nature of insurance business makes the achievement of profitability doubtful since profit is simply the excess of income over expenses and claim cost constitute a higher portion of the insurer's expenses(SAS, 2012; Boor, 1998).

An observation of the financial reports of insurance companies in Nigeria between 2007 and 2011 reveals significant fluctuations in profits. It further shows that a higher percentage of the premium income is spent on claim payment. This suggests that claim cost is a key factor that determines the profitability of insurance firms.

The main purpose of this study is to find out the influence of claim cost and associated expenses to the profit margin of Nigerian insurers. It aims at examining the significance of determinants of claim cost and its ratio to total cost components of Nigerian insurers. The outcome of the study will help Nigerian insurers to focus more on constituents of total claims management (TCM) – an integrated process through which the insurer takes control over every element of the claim (Bates and Atkins, 2007) and to adopt a model of claims management that will enhance their profitability. Such model will identify the limit of premium that should be expended on claim and dependence on brokers and agents in acquisition of business during the financial and policy periods in order for the firm to achieve its profitability objective. In other to achieve these objectives, the study hypothesizes that components of net claims is not significantly related to profitability of Nigerian insurers, and that loss ratio is negatively related to growth rate of written premiums. The remaining part of this paper focuses on the review of relevant literatures, methodology, data analysis, findings and discussion, recommendation, and conclusion.

2. LITERATURE REVIEW

An insurance claim is a demand by a person or an organization seeking to recover from an insurer for a loss that an insurance policy might cover (Brooks, Popow, and Hoopes, 2005). It is the actual application for benefits provided by an insurance company (MBA Knowledge Base, 2013). A claim is the defining moment in the relationship between an insurer and its customer as it creates the chance to show that the years spent paying premiums were worth the expense (Butler and Francis, 2010). In the same vein, Bates and Atkins (2007) assert that claim provides an insurer the opportunity to make a favourable impression on the policyholder. However, impressing the insured with claim payment could be very costly as claims constitute the largest cost of an insurer (Boor, 1998; Harrington and Niehaus, 2006; Bates and Atkins, 2007; SAS, 2012). This notwithstanding, insurers need to take their claim handling function more seriously because if a claim is handle well, it results to higher customer retention but if handle poorly, policyholders will lose confidence in the insurer and this may damage its most cherished reputation (Banjo, 1995; Butler and Francis, 2010).

Insurance claims ranges from simple domestic building and contents claims that is settled within days of notification to complex bodily injury claims that remain open for many years (Michael, 2008). Regardless of its nature, when a claim has been verified to be worthy of payment the insurer then fulfill his promise of reimbursing the insured back to his pre-loss position. There is a clear distinction between mere claim handling and proper claim management. Qaiser (nd) opine that claim management is wider in scope. According to the author, claim management involves not only claim processing but also include strategic role, cost monitoring role, service aspect as well as the role of people handling the claim. Furthermore, the Productivity Commission (2002) summarized a good claims management as being "proactive in recognizing and paying legitimate claims, assessing accurately the reserve associated with each claim, reporting regularly, minimizing unnecessary costs, avoiding protracted legal dispute, dealing with claimants courteously and, wherever possible, handling claims expeditiously". Claim management includes the review of the claims performance, monitoring of claims expenses, legal costs, settlement costs, compromises and planning for future payments and avoiding the delay and disputes in the payment of claims.

The need to shift from claims handling to efficient claims management has now been recognized by insurers (Amoroso, 2011). As this seems to be fundamental to profit and long-term sustainability of the company through customer satisfaction, policy renewal and customer retention. According to SAS (2012), an insurer that manages claim will also make effort to minimize cases of fraudulent claims. It is reported by SAS (2012) that 10% of all insurance claims are fraudulent. Moreover, claim situations should be properly monitored in order to identify recovery opportunities from salvage, subrogation or third parties. Missed recovery opportunities will have considerable implications for the profitability of an insurer. Insurers should also develop the skill and expertise in loss reserving and claims forecasting since this reduces the need for contingent increases of loss reserve. In addition, claims manager should create a balance between avoiding claims delay and reducing loss adjustment expenses. Finally, efforts should be made to minimize litigation expenses. As submitted by James (2009) 20 to 30 percent of an insurer's claims are in litigation. However, claims that involve attorneys often double the settlement amount and significantly increase an insurer's expense (SAS, 2012).

The cost of claim payouts and expenses is the largest spending category for an insurer, accounting for up to 80 percent of premium income (Harrington and Niehaus, 2006; Amoroso, 2012). However, insurers that can reduce their claims costs by just one percentage will likely achieve substantial savings.

Empirical studies have reported that large percentages of claims are fraudulent. For example, studies of automobile personal injury claims in the state of Massachusetts have found that anywhere from one-quarter to three-quarters of claims show some evidence of fraud or buildup (Tennyson & Salsas-Forn, 2002).

Claims cost is usually calculated as the total losses incurred by an insurer plus adjustment expenses. However loss ratio is used to calculate how much an insurer pay as claims in relation to the premium earned. Loss ratio is the ratio of total losses incurred (paid and reserved) in claims plus adjustment expenses divided by the total premium earned. The lower the loss ratio the better the profitability because higher loss ratios may indicate poor risk selection.

Profit is one of the key measures of organisational performance. It is the main reason for the continued existence of most business organisation. Ayele (2012) defines profit as the difference between total earnings from all assets and total expenditure on managing entire asset-liabilities portfolio. Profit is important to investors and management as sources of dividends and growth while to the insured and regulators, profit provides additional security against insolvency.

The connotation of the word 'profitability' seems to be dependent upon who is assessing it and for what purpose. McClenahan (nd) was of the view that to investors and insurers, profitability has a golden ring to it, to policyholders of a stock insurer, it sounds like a markup, while to policyholders of a mutual company, it is neutral. Insurance regulators either encourage profitability when concerned with solvency, or seek to curtail it when regulating rates.

The profitability of insurance firms has been questioned severally in recent times due to the economic crises (Kearney, 2010). However, Borokini (as cited in Anaesoronye, 2010) states that Nigerian Insurance Industry must improve underwriting practice to remain profitable. This assertion points to the fact that underwriting is important amongst other factors in the insurance industry. It also supports the position of Nguyen (2006) that profitability is one of the most important objectives of financial management because one goal of financial management is to maximize the owner's wealth and as such, profitability is an important determinant of performance.

Profitability could be measured by financial ratios. Abate (2012) clarifies 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. Al-Shami (2008) and Malik (2011) agree on a number of ratios for the measurement of profitability. These include Return on Assets (ROA), Return on Equity (ROE) and Return on Invested Capital (ROIC). ROA is an indicator of how profitable a company is relative to its total assets. It shows how efficient the management uses its assets to generate earnings. Whereas ROE measures how much profit a company generates with shareholders investment. ROIC is a measure used to asses a company's efficiency in allocating the capital under its control in profitable investments.

In contrast, Greene and Segal (2004) opine that the performance of insurance companies in financial terms is normally expressed in net premium earned, profit from underwriting activities, annual turnover, return on investment, return on equity. These measures could be classified as underwriting performance measures and investment performance measures. However, previous researchers (For

example, Hardwick and Adams, 1999; Malik, 2011) agree that the key indicator of a firm's profitability is ROA and it is defined as the Before Tax Profits divided by Total Assets.

3. DATA AND METHODOLOGY

The study was carried out in the Nigerian insurance industry. The secondary data used for this study was extracted from the annual financial reports of selected insurance companies in Nigeria. The data generated for this study include Profit Before Tax (PBT), Net Claims, Return on Asset (ROA), Loss Ratio, and Expense Ratio.

Ten out of the fifty insurance firms in Nigeria were selected as sample and this represent 20%. The sample is quite adequate since a sample of 0.05 proportion of the population is believed to be satisfactory in making inferences (Amadi, 2005). These ten companies have their registered offices in Lagos, the economic hub of Nigeria. The companies' names were systematically coded for the purpose of confidentiality. The code given to them ranges from A0 to A9. The sample is selected through simple random and purposive sampling. The data was generated for a ten year period that is, from 2002 to 2011 giving 100 data set. The variable and the formulae used for the study are summarised in the table below.

Variables	**Formulae**
Return on Asset (ROA)	Net Income Before Taxes / Total Assets
Profit Before Tax (PBT)	Gross Earnings – Total Expenses
Loss Ratio (LR)	Total Net Claims / Earned Premium
Net Claims (NC)	Total Claims paid in a period
Expense Ratio (ER)	Total Underwriting Expenses / Earned Premium
Net Premium (NP)	Total Premium – Premium paid to Reinsurers
Note: Compiled by the researchers based on earlier studies.	

Variable chosen for the study

In this study, the dependent variable is profitability, which is proxy by Return on Asset (ROA), Profit Before Tax (PBT), and Loss Ratio. The Independent variable is claim cost, proxy by Net Claims. The Expense ratio and Net Premium are included in the study as residual variables.

The linear multiple regression models developed for this study are as follows:

$PBT = a + \beta_1 (LR) + \beta_2 (NC) + \beta_3 (ER) + e$ …….. (i)

$LR = a + \beta_1 (NP) + \beta_2 (NC) + e$ …… (ii)

These data were analysed using descriptive statistics, coefficient of determination (R^2), ANOVA (F), standard error test, test of correlation (T), multi-colinearity test of Variance Inflation Factor (VIF) and Tolerance Values. These are in addition to multiple linear regression and ordinary least square Regression techniques.

The descriptive analysis was used to describe the mean and standard deviation of the ROA, PBT, loss ratio, net claims, and expense ratio of the selected insurance companies for the period of 10 years. Analysis of variance, test of correlation, and the regression analysis were used in establishing a relationship between the dependent and independent variables.

4. RESULTS AND DISCUSSION

The data generated for this study were analysed and the hypotheses tested using statistical techniques of ordinary least square regression and multiple regression analysis available on the software of Statistical Package for Social Sciences (SPSS, version 15) and Stata (version 10). Bar charts were also adopted in order to aid the interpretation of the analysis.

A descriptive analysis of the data was conducted through a calculation of the mean and standard deviation. This is to provide a general overview of the trend of the concepts and relationship being tested. The two hypotheses stated for this study which also form the basis for the two models are:

HO_1: There is no significant relationship between PBT, loss ratio, net claims and expense ratio

HO_2: There is no significant relationship between loss ratio, net premium and net claims

The **model** obtained from the result of the first hypothesis represents a multiple regression model which relates the dependent variable **(profit before tax (PBT)** to several predictor variables **(loss ratio (LR), expenses ratio (ER), net claims (NC)** and it is represented below as:

PBT = 194231 − 383517 * LR + 7786 * ER + 0.314 * NC…….. Model_1

All other variables being kept constant, the negative value of the co-efficient of the loss ratio (LR) indicates that, for every one million naira increase in LR, there will be a corresponding decrease of 383517 in PBT (profitability). This shows that an inverse relationship exist between LR and PBT. This implies that for an insurance firm to generate profit, claim expenses must be minimized considerably. To achieve this, SAS (2012) posits that insurance companies must pay adequate attention to fraudulent claims, recoveries from salvage, subrogation, or third parties. In addition, the author advises that insurance firms should focus more on accurate loss reserving, claims forecasting, and litigation management.

Furthermore, all other variables being kept constant, the positive value of the co-efficient of ER indicates that, for every one million naira increase in ER, there will be a corresponding increase of 7786

in profitability (PBT). This shows a direct correlation between ER and PBT. It means that insurance companies that spend more on human capital development and staff motivation will enjoy high productivity and subsequently profitability. As previously noted, ER is included in this model to find out the effect of variables other than claims cost on insurers' profitability. The result on table 6 hereby indicates that other variables like the ER directly influence the profit potential of insurance firms in Nigeria.

Similar interpretation applies to the NC, which yields 31.4% increase in PBT, for every one million naira increase in net claims. This could be attributed to improved underwriting activities and accurate loss reserving by insurance companies. When risks are carefully selected and premium charged is adequate, it will be possible for the insurer to realize the expected profit notwithstanding the cost of claims paid during a financial year.

However, in the absence of all the predictor variables (loss ratio, expense ratio and net claims), that is when LR = 0, ER = 0 and NC = 0, then PBT = 194,231 Naira. This implies that ceteris paribus, even when an insurer does not incurre a major expenditure in relation to claim or administrative expenses, profit will still be realized by the company.

The co-efficient of determination ($R^{2)}$ is 0.34. This implies that about 34% of the dependent variable **(PBT)** can be explained by the independent variables **(LR, NC AND ER),** leaving about 66% to be explained by other factors like Broker and Agents' Commission, Cost of Overheads, and other Sundry Expenses. The R^2 value also indicates the overall effect size of all the independent variables.

The **Anova value (F)** of 16.4 ((df = 3, 96); $p< 0.05$), is significant at 0.05 level. This shows that the null hypothesis which states that, there is no linearity between **PBT** and **the predictor variables** is rejected. Therefore, the alternative hypothesis which states that, there is linearity between **PBT and the predictor variables** is hereby accepted. This implies that the model obtained can be used to forecast future events in the Nigerian insurance industry. Moreover, there is a significant relationship between PBT, loss ratio, expense ratio and net claims.

The **T** and **Beta** values respectively show the individual contributions (impacts) and the degree of the impacts of each predictor variable on profitability (PBT). NC **(T = 6.840 (P<0.05); Beta = 0.625**) has a significant positive effect on profitability. On the contrary, the contribution of LR **(T = -1.423 (P>0.05); Beta = -0.138**) and ER **(T = 00.98 (P>0.05); Beta = 0.009**) respectively are not significant. Consequently, while NC contributes significantly to profitability (PBT), LR and ER offer little or no contribution to profitability (PBT).

The **tolerance value** and **VIF values** respectively identifies the problem of multi - colinearity in each independent variable- a test which identifies the predictor variables which shares a high relationship among other predictors. Since the tolerance values of all the independent variables are greater than 0.1 and the VIF values of all the independent variables are less than 10, this shows that the problem of multi - colinearity does not exist among all the predictor variables. Consequently, all the independent variables were used in the model.

The **model** obtained from the result of the second hypothesis represents a multiple regression model which relates the dependent variable **loss ratio (LR)** to several predictor variables **net claims (NC) and net premiums (NP)** and it is represented below as:

L = 0.303 + 0.367 *NC – 0.047 * NP……..…….. Model_2

All other variables being kept constant, the positive value of the co-efficient of the (NC) indicates that, for every one % increase in NC, there will be a corresponding increase of 36.7% in Loss Ratio (LR). Loss ratio being the proportion of actual loss from the gross premium collected is indicative of the degree of profitability. That is for every one naira collected as premium, a proportion is spent on losses on the average. It therefore means that 36.7% of loss is generated from every one percent change in loss ratio. The implication is that an insurance company have propensity to increase profitability by one percent with a change of 37% increase in losses. This is significant to the extent that insurance companies need to improve on risk selection so as to reduce the level of claims for every one naira premium collected. In addition, all other variables being kept constant, the negative value of the co-efficient of net premium (NP) indicates that, for every one % increase in NP, there will be a corresponding decrease of 0.04 in profitability (loss ratio).

In the absence of all the predictor variables (net premiums and net claims), that is when NP = 0 and NC = 0, then LR = 0.303. This is corroborated by the negative relationship between loss ratio and growth of premium. The a-priori expectation is that as premium grows, loss ratio should be negative which conforms to the negative sign obtained from the model. The model further predicts that for every five percent change in premium, there is a one percent reduction in loss ratio. It is consistent with the literature reviewed and insurance theory that when growth of premium results reduction in loss ratio, it is an evidence of profitability of insurance companies.

The co-efficient of determination (R^2) is 0.49. This implies that about 49% of the dependent variable **(Loss ratio)** can be explained by the independent variables **(NC and NP),** leaving about 51% to be explained by other factors. The R^2 value also indicates the overall effect size of all the independent variables.

The **Anova value (F)** of 14.0 ((df = 3, 86); p< 0.05), is significant at 0.05 level signifying linearity between **Loss Ratio and the predictors**. This implies that the model obtained can be used to predict future activities in the industry. Consequently, there is a significant relationship between loss ratio, net claims and net premium.

The **T** and **Beta** values respectively show the individual contributions (impacts) and strengths of the impacts of each predictor variable on Loss Ratio (LR). Net claims **(T = 5.023 (P<0.05); Beta = 0.554**) has a significant positive impact on profitability. On the contrary, the contribution of net premium **(T = -3.716 (P<0.05); Beta = -0.410**) is negatively significant, indicating an inverse relationship between net premium and loss ratio.

The **tolerance value** and **VIF values** respectively identifies the problem of multicolinearity in each independent variable- a test which identifies the predictor variables which shares a high relationship among other predictors. Since the tolerance values of all the independent variables are greater than 0.1 and the VIF values of all the independent variables less than 10, this shows that the problem of

multicolinearity does not exist among all the predictor variables. Consequently, all the independent variables were used in the model.

4.1 Conclusion

The purpose of this study was to examine the contribution of claim expenses to the profitability of insurance firms. Profitability is one of the key measures of organisational performance. It is more important for insurance firms because it determines the ability of the company to conveniently pay compensation to its clients, motivate its employees, and give back to its owners. This study has been able to find out that claim costs highly influence the profitability of insurance firms in Nigeria. A profit oriented insurance firm must imbibe the culture of strategic claims management. This does not view claims related functions of insurance companies as activities connected to loss occurrences. Claim managers should closely liaise with other sections of the insurer from the inception of a policy to its conclusion. This will not only enhance the payment of only genuine claims, it will also aid the profitability of the firm through reasonable cost control.

4.2 Recommendation

Since R^2 is 0.34 which implies that the joint influence of the independent variables account for about 24% of the profitability of the selected firms, this means that Nigerian insurance companies should pay special attention to their underwriting process and examine critically the sources and development of new and old businesses. Furthermore, aggregate data was used for net claims, it is important that the industry should disaggregate return distributions across the different classes of insurance so as to ensure competitive strategy.

Expense Ratio is also shown to be critical to the profitability of insurance business thus, a balance should be sought in the employment of key staffs while developing analytical framework to detect and reduce excesses.

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Tables

Table 1: Mean and standard deviation of Return on Assets (ROA)

Insurance Companies	*Mean*	*Std. Deviation*
A0	*0.0200*	*0.01054*
A1	*0.0800*	*0.01764*
A2	*0.0320*	*0.01398*
A3	*0.0220*	*0.04467*
A4	*0.0480*	*0.02440*
A5	*0.0490*	*0.01370*
A6	*0.0660*	*0.04195*
A7	*0.0200*	*0.04876*
A8	*0.0720*	*0.12709*
A9	*0.1590*	*0.07400*

Source: Field survey, 2014.

Table 1 portrays the descriptive statistics for ROA generated from the study sample for ten years. The result shows that the best performing firm with respect to ROA is A9 with an average of 15.9%. The lowest ROA was recorded by three companies including A0, A3, and A7 with an average mean value of 2%. The result further reveals that A1 which comes next to A9 has an average of 8% ROA indicating a 50% difference. Furthermore the table reveals a very high standard deviation (12.7%) in the ROA data for A8, an indication of low reliability of A8's data. The bar chart in figure 1 further shows the result of the ROA descriptive analysis.

Table 2: Mean and standard deviation of Profit before Tax (PBT)

Insurance Companies	*Mean*	*Std. Deviation*
A0	*226291*	*123855*

A1	*180790*	*160742*
A2	*293159*	*96450*
A3	*205951*	*530236*
A4	*213431*	*161755*
A5	*991091*	*618518*
A6	*398484*	*413252*
A7	*69240*	*814086*
A8	*37426*	*289917*
A9	*389827*	*227298*

Source: Field survey, 2014.

Table 2 presents the results of the descriptive analysis of PBT. With respect to the PBT, A5 recorded the highest PBT for the ten years considered for this study with a mean value of 991,091. It was followed by A6 whose mean value is 398,484, thereby showing a difference of almost 66%. Also, the table shows that A8 made the lowest PBT for the ten years with an average value of 37,426. The standard deviation ranges from 96,450 for A2 and 814,086 for A7. This indicates that the mean value for A2 is more a representative of its average PBT when compared to other firms engaged in the study. Figure 2 further describes the results of the analysis.

Table 3: Mean and standard deviation of Loss Ratio

Insurance Companies	***Mean***	***Std. Deviation***
A0	*0.3830*	*0.16806*

A1	*0.2850*	*0.10967*
A2	*0.4540*	*0.18951*
A3	*0.4220*	*0.11429*
A4	*0.3140*	*0.10069*
A5	*0.4810*	*0.12793*
A6	*0.1870*	*0.10584*
A7	*0.1770*	*0.09381*
A8	*0.3130*	*0.23209*
A9	*0.2050*	*0.04503*

Source: Field survey, 2014.

Table 3 shows the result of the descriptive analysis for the Loss Ratio of the ten insurance companies used for this study for ten years. A5 recorded the highest mean value, an indication that on the average, the firm spent 48.1% of their total premium collected on claim. This was followed by A2 whose Loss Ratio averaged 45.4%. A7, A6, and A9 spent an average of 17.7%, 18.7%, and 20.5% respectively on claims payment from their total premium collected. A9 has the lowest standard deviation of 4.5% while A8 has the highest standard deviation at 23.2%. This explanation is further enhanced by figure 3.

Table 4: Mean and standard deviation of Net Claims

Insurance Companies	***Mean***	***Std. Deviation***
A0	*622173.6000*	*522575.95126*
A1	*262780.1000*	*239706.70993*

A2	*821432.8000*	*493215.86274*
A3	*486831.2000*	*193892.08518*
A4	*508736.6000*	*340083.18803*
A5	*2532419.2000*	*1787498.94276*
A6	*622782.7000*	*792292.85076*
A7	*648816.5000*	*699669.06137*
A8	*229575.9000*	*326905.80180*
A9	*481155.5000*	*381718.46414*

Source: Field survey, 2014.

Table 4 shows the result of the descriptive analysis of the Net Claims for the ten insurance companies. It reveals that the highest average claim payment made during the period of 10 years was N2,532,419 and it was paid by A5. A2 paid the second largest claim of N821,432 indicating almost a 50% difference. The lowest average claim payment made for the ten years was recorded for A1 as N262,780. With respect to the standard deviation, A3 recorded the lowest that is, N193,892. Expectedly, A5 also occupy the top position with N1,787,498. Figure 4 further reveals the positions of the ten companies in terms of their claims payment.

Table 5: Mean and standard deviation of Expense Ratio

Insurance Companies	***Mean***	***Std. Deviation***
A0	*0.3560*	*0.25535*
A1	*0.3430*	*0.09956*
A2	*1.3230*	*0.30289*
A3	*0.3290*	*0.21455*
A4	*0.3890*	*0.13136*
A5	*0.3850*	*0.10783*
A6	*0.3140*	*0.12730*
A7	*0.1850*	*0.09144*
A8	*0.2630*	*0.17398*
A9	*0.1760*	*0.10200*

Source: Field survey, 2014.

Table 5 shows the result of the descriptive analysis of the Expense Ratio for the ten insurance companies that constitute the sample for this study. Two of the firms, A9 andA7 spent an average of 17.6% and 18.5% of their total premium on management respectively. However the other 8 companies spent between 26.3% and 38.9% of their premium on company's management, with A8 at the start and A4 at the close of the range. The standard deviation column reveals that A7 has the lowest standard deviation at 9.1% while A2 recorded the highest at 30.2%. Figure 5 further shows the interpretation of table 5.

Table_6: Multiple Regression Model, Anova (F), Co-efficient of Determination (R^2), Test of Correlation (T), Tolerance Value, Variance Inflation Factor (VIF) result showing the relationship between PBT, loss ratio, net claims and expense ratio

Model_3	***Unstandardized Coefficients***		***Standardized Coefficients***			***Collinearity Statistics***	
	B	***Std. Error***	***Beta***	***T***	***Sig***	***Tolerance***	***VIF***
(Constant)	*194231*	*84078.2*		*2.310*	*0.023*		
LOSS RATIO	*-383517*	*269442.1*	*-0.138*	*-1.423*	*0.158*	*0.734*	*1.363*
EXPENSE RATIO	*7786*	*79592.3*	*0.009*	*0.098*	*0.922*	*0.881*	*1.136*
NET CLAIMS	*0.314*	*0.046*	*0.625*	*6.840*	*0.000*	*0.824*	*1.214*

F = 16.4 ((df = 3, 96); P< 0.05), R^2 = 0.34.

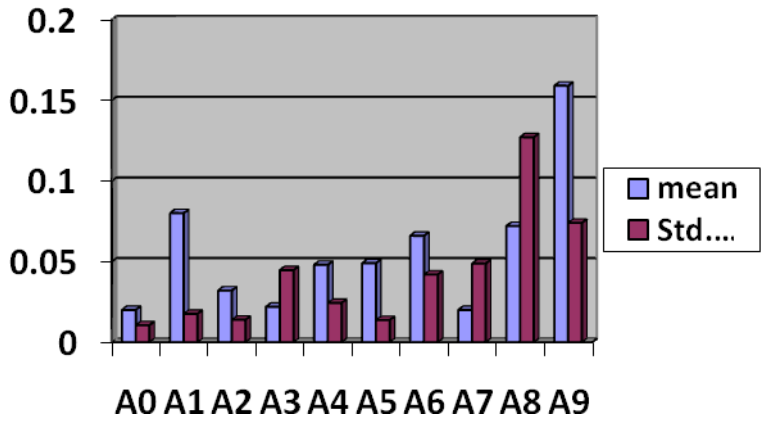
Table_7: Multiple Regression Model, Anova (F), Co-efficient of Determination (R^2), Test of Correlation (T), Tolerance Value, Variance Inflation Factor (VIF) result showing the relationship between loss ratio, net claims and net premium.

Model_1	***Unstandardized Coefficients***		***Standardized Coefficients***			***Collinearity Statistics***	
	B	***Std. Error***	***Beta***	***T***	***Sig***	***Tolerance***	***VIF***
(Constant)	*0.303*	*0.017*		*17.987*	*0.000*		
NET CLAIMS	*0.067*	*0.013*	*0.554*	*5.023*	*0.000*	*0.721*	*1.386*
NET PREMIUMS	*-0.047*	*0.013*	*-0.410*	*-3.716*	*0.000*	*0.721*	*1.386*

F = 14.0 ((df = 3, 86); P< 0.05), R^2 = 0.49.

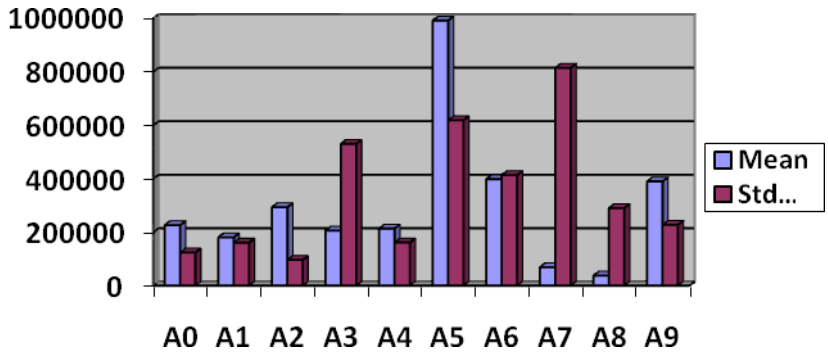
Figures

Figure 1: ROA



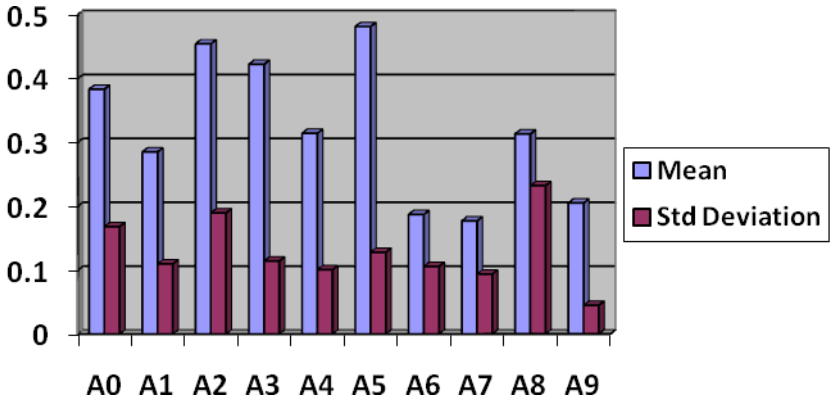
Source: Authors

Figure 2: PBT



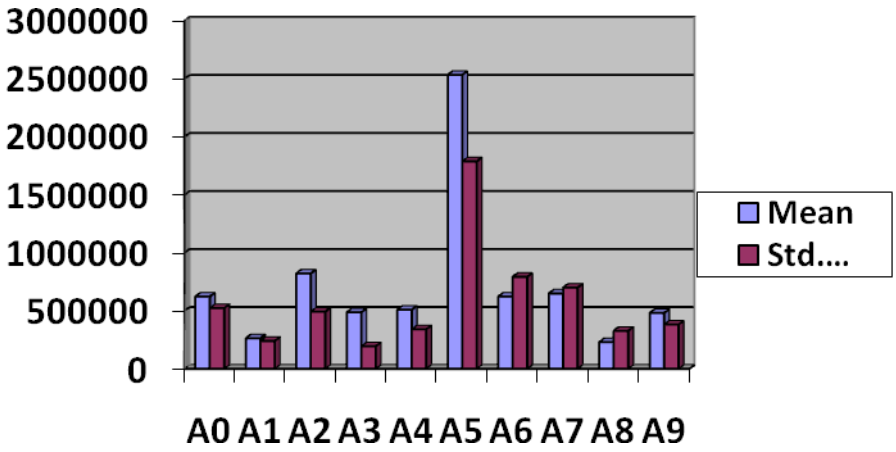
Source: Authors

Figure 3: Loss Ratio



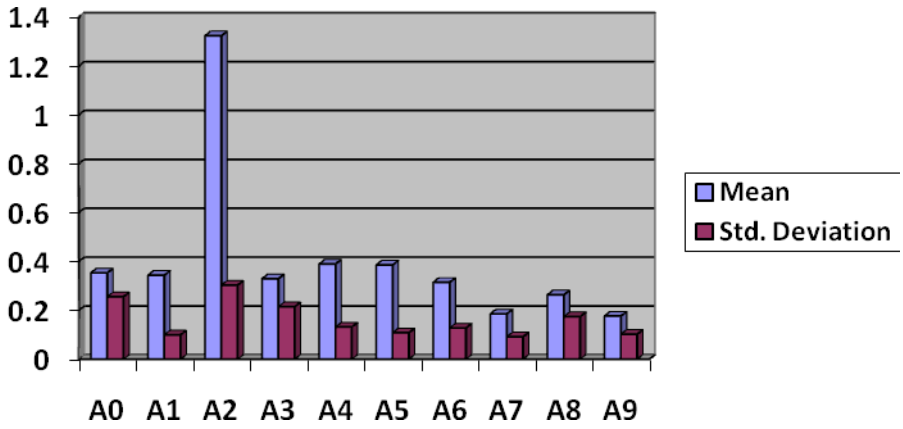
Source: Authors

Figure 4: Net Claims



Source: Authors

Figure 5: Expense Ratio



Source: Authors