Analysis of Factors That Determine the Financial Performance of Insurance Companies in Ghana

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***Abstract*— The insurance industry is quite underdeveloped in terms of its contribution to the financial sector as well as returns on their investment. The problem is that at a point in Ghana's history, the insurance income exceeded that of the banking sector. However, this situation has been reversed and in 1996 the income of the major banks exceeded the premium income of the entire insurance industry. The study therefore seeks to ascertain the determinants of insurance companies performance and the effect of changes in premium, assets and investments on risk. Secondary data extracted from published accounts of the Insurance Companies from the year 2005 to 2009 was used. The study find out that underwriting efficiency, administration expense, underwriting risks, return on investment, capital adequacy, underwriting profit and investment assets determine financial performance of insurance firms in Ghana.**

***Index Terms*— Insurance, Premium, Investments, Underwriting Efficiency, Underwriting Efficiency**

I. INTRODUCTION

Insurance is explained as the provision of indemnity to a client or the insured by the insurer upon the occurrence of an accident in accordance with terms agreed on between the insurer and the insured (William et al, 1995). According to Athearn et al, (1989) it is a social devise in which a group of individuals transfer risk in order to combat experience, which permits mathematical prediction of losses and provides for payment of losses from funds contributed by all members who transferred risk. Insurance allows companies and individuals to practice risk management. There is evidence that prehistoric humans banded together in tribes to conserve resources, share responsibilities and provide some protection against the uncertainties of life (Williams et al, 1995).

Insurance is generally practiced under two broad headings i.e. life and non life (general business). In Ghana a company licensed to operate (a) Life Assurance business as a speciality shall not be licensed subsequently to operate a Non-Life Insurance business, and (b) Non-Life insurance business as a specialty shall not be licensed subsequently to operate Life Assurance business. Additionally, the separation is to ensure that the minimum financial obligations, especially solvency margins in respect of one or the other of the two activities – Life and Non-Life – are not borne by the other activity (Mahama, 2008).

And for us in Ghana, the separation is seen as a measure to allow the two different segments of insurance business to each focus on building the competencies that will enable them to compete favourably. In the specific case of Life business (which has since 1955 been run largely as an appendage of Non-Life business) the separation is informed by the desire to bring Life Business out of the shadow of Non-Life so that Life Assurance can fulfill its potential as a major vehicle for the mobilization of long-term funds(Mahama, 2008).Insurance companies also known as Contractual Saving Institutions (CSIs) raise funds from policyholders according to a usually predetermined schedule until a stated saving goal is attained; such as retirement age or as long as they are alive (life insurance policies).

These companies tend to have relatively stable cash flows and obligations with longer maturity profiles and greater predictability. This situation compared to commercial banks, which utilize short-term deposits to create short-term credits. It is estimated that insurance firms control between 10% - 25% of total financial assets of developed economies (ranging from about 10% in Germany to more than 25% in the United States). Regrettably, in a sample of some developing countries with relatively more developed financial systems, deposit banks controlled nearly half the total financial assets while contractual savings institutions accounted for only 5% (World Development Report 1989, World Bank).

The ability of the insurance industry to mobilize long-term funds especially from the life sector would constitute an immense asset to a developing country in pursuit of stable macro-economic growth (Appiah-Ankrah, 2008). Insurance contributes a little less than 1.5% of Ghana's GDP (UGBS website, 2008). To improve or increase financial intermediation in the economy, there is the need to provide avenues for long-term finance, which fit the cash flow and investment profiles of the insurance industry.

A better performing insurance industry has good implications of the business and financial community as it leads to realistic premium setting and more customer friendly claims performance.

II. RESEARCH PROBLEM

The insurance industry is quite underdeveloped in terms of its contribution to the financial sector of the GDP as well as returns on their investment. The problem is that at a point in Ghana's history, the insurance income exceeded that of the banking sector. However, this situation has been reversed and in 1996 the income of the major banks exceeded the premium income of the entire insurance industry (Price Water House, 1997).

This state of affairs, even though, is attributed to a variety of factors including low level of disposable income, low level of

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wealth accumulation, inflation and public perception of the performance of insurance companies in terms of investment payouts and claim settlement, a closer look into the financial performance of the insurance industry would bring to the fore as to why the industry is behind the banking sector, from 1996, in terms of its contribution to GDP. As the economic and legislative conditions in Ghana improve, it is expected that insurance companies would restructure their operations by injecting additional capital, recruiting qualified staff, developing new products and improving on their service delivery.

The Insurance Industry contributes immensely to economic growth by converting savings made by individuals into portfolios of assets and smoothing investment returns, as well as allowing individuals to share in the prosperity of the economy. The funds raised by the industry are long-term in nature, especially that of the Life Insurance business. It is therefore anticipated that the industry would re-engineer its capacity to mobilize long-term savings for investment, to provide the much-needed missing link in the efforts towards the future growth and development of the industry in particular and Ghana as a whole. Developed countries have seen significant improvements in their economies because the insurance industry, major sources for mobilizing funds, has made huge investments that have facilitated the development of such nations. Insurance companies are the basic long-term financial institutions because they have access to a vast potential of long term funds. If properly managed, these funds could provide a formidable pool of long-term funds for industrial investment.

Any economy that aims at developing its insurance sector must take note of the key benefits of insurance. These are indemnification, reduction of uncertainty, funds for investments, loss control and providing assistance to small business. In this vein this study seeks to compare the financial performance of insurance companies.

III. Objectives of the Research

The main objective of this research is to analyze the financial performance of insurance companies in Ghana for the period 2005 to 2009. Specifically, the study seeks to:

- To ascertain the determinants of insurance companies performance
- To find out the effect of changes in premium, assets and investments on risk, performance, growth prospects and value of insurance companies.

IV. Methodology

4.1 Research Design

This study is quantitative and has adopted both descriptive and inferential statistics using exploratory study. The total population of this study is all insurance firms in Ghana. This was to afford the researchers the opportunity not only to know the number of insurance firms in Ghana and the types of product they offer but also what determines their profitability. Convenient sampling technique was used. The aim was to select insurance firms operating in Ghana which financial statements can be made available by the National Insurance Commission.

4.2 Data collection method

Secondary data extracted from published accounts of the Insurance Companies from the year 2005 to 2009 was used. Data on annual financial statement were obtained for 23 Non-life Companies and 17 Life Companies from 2005 through 2009 from the National Insurance Commissioners (NIC), the Insurance Companies and others regarding the pace and performance of the insurance industry specifically and financial sector generally. Annual economic and market data for the same time period also were obtained. This include variables such as underwriting efficiency, administration expense, underwriting risks, return on investment, capital adequacy, underwriting profit and investment assets. The second set of data was extracted from financial journals, relevant text books, the Insurance Law 2006. This set comprises the value of total assets, value of share capital and earnings for the year, as measured by profit after tax. This source also provided information on the profile of the insurance industry.

4.3 Data analysis

Quantitative analysis of data from 2005 to 2009 was done. It is the period for which reliable records are available. The period also coincides with the new insurance act (Act 724) which seeks to liberalize the insurance industry. The selected companies were insurance institutions operating in Ghana, both listed and non-listed companies. The tools that was used for the analysis was Linear Multiple Regression. Simple Multiple Regression Equation was used to established the relationship between financial performance (dependent variable) and all other financial performance indicators were taken as independent variables

5.0 Results of the Study

The table 1 below represents a descriptive analysis of the firm level characteristic associated with life and nonlife insurance sector. This study considers financial performance as dependent variable whereas underwriting efficiency, administration expenses, underwriting risk etc as the independent variable.

Table 1: Descriptive Statistics

	FINANCIAL PERFORMANCE	UNDER WRITING EFFICIENCY	ADMINISTRATION EXPENSES	UNDER WRITING RISK	RETURN ON INVESTMENT	CAPITAL ADEQUACY	UNDER WRITING PROFIT	INVESTMENT ASSETS
Mean	**6.1507**	**36.6672**	**49.3487**	**15.2281**	**2.9418**	**2.9418**	**40.1817**	**71.3703**
Std. Deviation	**8.31478**	**20.54729**	**36.29902**	**5.82450**	**5.15087**	**5.15087**	**71.83380**	**15.39142**

Range	**45.90**	**76.00**	**224.00**	**22.00**	**27.90**	**27.90**	**584.00**	**78.00**
Minimum	**10.00**	**1.00**	**12.00**	**6.00**	**-1.30**	**-1.30**	**-574.00**	**18.00**
Maximum	**45.90**	**77.00**	**236.00**	**28.00**	**26.60**	**26.60**	**10.00**	**96.00**

Source: Author's Computation from Survey Data (2011).

The table above shows the average performance for both life and non-life insurance industry for the year under review. The average is provided by the mean while the standard deviation indicates the inter industry variation of the variable. It can be observed from the table that the maximum and minimum value of industry mean for financial performance are found to be 45.90% and 10% respectively for the entire five years. The table also shows the mean, standard deviation, maximum and minimum values with the respective range for all the other independent variables (financial performance indicators). The maximum underwriting efficiency obtained for the five years considered was estimated to 77% and the minimum estimated to be 10%.

The table 2 below clearly illustrates the strength of association between financial performance which is the dependent variable and all the other financial performance indicators. It further establishes the magnitude of relationship between the financial performance indicators in measuring the actual contribution of each of the predictor variables to financial performance of the sampled insurance companies.

Table 2: Correlations

		UNDERWRITING RISK	RETURN ON INVESTMENTS	CAPITAL ADEQUACY
FINANCIAL PERFORMANCE	Pearson Correlation	-0.108*	0.036	-0.031
	Sig. (1-tailed)	0.042	0.285	0.313
UNDERWRITING EFFICIENCY	Pearson Correlation	-0.035	0.050	0.098
	Sig. (1-tailed)	0.289	0.212	0.058
ADMINISTRATION EXPENSE	Pearson Correlation	0.000	-0.124*	-0.063
	Sig. (1-tailed)	0.496	0.022	0.155
UNDERWRITING RISK	Pearson Correlation	1.00	-0.001	0.121*
	Sig. (1-tailed)		-0.490	0.025
RETURN ON INVESTMENTS	Pearson Correlation	-0.001	1.00	0.473**
	Sig. (1-tailed)	0.490		.000
CAPITAL ADEQUACY	Pearson Correlation	0.121*	0.473**	1.00
	Sig. (1-tailed)	0.025	0.000	
UNDERWRITING PROFIT	Pearson Correlation	-0.018	-0.051	0.092
	Sig. (1-tailed)	0.387	0.204	.069
INVESTMENT ASSETS	Pearson Correlation	0.007	-.054	-.083
	Sig. (1-tailed)	0.456	.192	.090

Source: Author's Computation from Survey Data (2011).
*. Correlation is significant at the 0.05 level (1-tailed).
**. Correlation is significant at the 0.01 level (1-tailed).

From the table it can be observed that the results of all the correlation coefficient are less than 0.5 which depict low correlation or association between the variables under consideration. The table also showed statistically significant inverse correlation between the dependent variable financial performance and independent variable underwriting risk (-0.108) at 0.05 level. Indicating that high risk underwriting activities will lead to improvement in the financial performance and vice versa. This result confirms Adams et al. (1996) that insurance and reinsurance companies that engaged in high-risk underwriting activities have better operational performance than those companies that are less inclined to take underwriting risks. This implies that managerial innovation and risk-taking behaviour could realize short-term cash flow benefits for companies.

Again the results in column two showed statistically significant inverse correlation between the administration expenses and return on investment (-0.124) at 0.05 level. Indicating that increased in administration expenses will lead to decline in return on investment and vice versa supporting Adams et al. (1996) that high annual insurance losses will tend to increase in 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.

Similarly, underwriting risk has significant correlation with capital adequacy (0.121) at 0.05 level. The correlation is positive indicating that improvement in capital adequacy will lead to improvement in underwriting risk and vice versa. This support Dickinson (1997) study that lower level of capital may not adequately cover the risks and therefore reduces the protection of policyholders. It also confirms Hardwick, P., (1997) study that traditional approach to insurance solvency involves the use of capital requirements by establishing a direct relationship between capital and risk. However, it is not to say that underwriting risk has no correlation with other variables. You can observe that it correlates with all other variables but not significant enough to warrant detailed interpretation. The study showed a statistically weak significant inverse correlation between the underwriting profit and return on investment, the correlation coefficient between them was evaluated to be -0.051 at 0.05 level. The result confirms Rudolf (2001) studies that underwriting result and investment yield are negatively correlated. The research suggested that due to uncertain prospects for investment result, the insurers must focus on underwriting results to achieve greater profitability.

The statistically significant positive correlation between return on investment and capital adequacy (0.473) at the 0.01 level, suggests that as the return on investment improves, it will lead to improvement in the capital adequacy and vice versa. For example, studies by Boose, M.A., (1993) suggest a linkage between capital structures could influence the business decisions of prospective customers and investors. Overall, empirical evidence suggested that both capital adequacy and return on investments ratios has its own comparative advantage. The research suggested further that due to uncertain prospects for investment results, the insurers must focus on underwriting results to achieve greater profitability.

6. Developing the Financial Model

Guided by the functional relationship between the variables of the study, the implicit form of the model is given as

$$FP = \beta_0 + \beta_1(UNEFF) + \beta_2(ADMEX) + \beta_3(UNR) + \beta_4(RI) + \beta_5(CAPAD) + \beta_6(UNDPR) + \beta_8(INVASS) + \varepsilon$$

Where
FP=Financial Performance,
UNEFF=Underwriting efficiency,
ADMEX= Administration expense,
UNR=Underwriting risk,
RI=Return on investment,
CAPAD= Capital adequacy
UNDPR=Underwriting profit,
INASS= Investment Assets.

The table below shows the regression coefficients for establishing the simple multiple regression equation between the financial performance (dependent variable) and all other financial performance indicators were taken as independent variables.

Coefficients

	Unstandardized Coefficients			
Model	B	Std. Error	T	Sig.
(Constant)	17.668	6.895	2.562	0.011
UNDERWRITING EFFICIENCY	0.003	0.025	0.137	0.021
ADMINISTRATION EXPENSE	0.009	0.014	0.652	0.049
UNDERWRITING RISK	0.117	0.064	1.838	0.0067
RETURN ON INVESTMENTS	0.046	0.102	0.447	0.00655
CAPITAL ADEQUACY	0.056	0.119	0.470	0.00639
U4NDERWRITING PROFIT	3.000	1.318	2.276	0.01973
INVESTMENT ASSETS	0.020	0.034	0.0600	0.00349

Source: Author's Computation from Survey Data (2011).

From the table above Multiple Regression Equation was established between financial performance (dependent variable) and all other financial performance indicators were taken as independent variables.

The regression equation then becomes

FP=17.668+0.003UNEFF+0.009ADMEX+0.117UNR+0.04
6RI+0.056CAPAD+3.00
UNDPR+0.020INVASS.

The model specification for the Financial Performance established that a positive relationship exist between FP and underwriting efficiency in insurance companies in the country. This means that a unit increase in UDEFF will result to a corresponding increase in FP .

A positive relationship exists between Financial Performance (FP) and Administration (ADMEX) and the result is that a unit increase in Administration (ADMEX) will cause a corresponding increase in Financial Performance (FP) by 0.009 unit. This is in accordance with the report of Nissim (2010) that the lower the ratio, the better in terms of management efficiency.

As shown by the regression equation a positive relationship exists between FP and UNR. This means that a unit increases in UNR will result to a corresponding increase in FP.

From the study the coefficient of underwriting risk is positive and statistically significant at 0.117 level. The results supported and confirmed Barth et al, (2009) report suggesting that premium growth alone does not necessarily result in

higher underwriting risk. Further, there is a positive relationship between claim count growth and changes in loss ratios, suggesting that claim count growth may be a preferred measure of underwriting risk.

From the study return on investment rate is positive and significantly rated with the financial performance of insurance companies. It gives an indication of the quality of the investments made and held by the various companies. The rate of return on investments is measured by investment income as a percentage of total investments. It can be inferred from the fact that a high rate of rate of return may encourage a high level of investment. The result support Chen et al. (2004) study that insurance companies must have to diversify their investment and use effective hedging techniques which help them to create better financial revenues. It again support Rowland (2006) that net investment income is the best benchmark of performance and that active management and portfolio approaches that aim to produce a growing, but relatively stable net investment income would maximize market value.

The premium equity ratios try to assess the capital adequacy of insurance companies. The ratio measures how much capital is available to support the premiums underwritten by a company. The study showed there is 0.056 significant increase or change in financial performance for a unit change in capital ratio. The low ratios of the industry are due more to low business volumes than to high capitalization. The results is in accordance with Goddard et al. (2004) findings that showed profit as an important prerequisite for future growth of banks and the banks that maintain a high capital assets ratio tend to grow slowly. This result seems to agree with the reasons put forward by the NIC in 2006, that most licensed insurance companies were undercapitalized and operating with poor quality assets. Again, the study is consistent with the fundamentals and the cost of equity capital theory which states that an alternative or complementary approach for estimating the cost of equity capital is to use ratios and other fundamentals which capture various risk aspects.

From the study there is a significant increase in financial performance to a tune of 3.00 for a unit change in underwriting profit as a percentage of gross premium ratios. The 3.00 even though positive depict poor profitability performance of the companies. The result is not consistent with Doherty et al (1995) that underwriting profit and investment return will influence insurer's capital and further solvency through influencing the asset and liability. The study showed a positive and a significant ratio but it is inconsistent with Heyman et al, (2006) study that the investment policy of most insurance companies should be earning abnormal returns or surplus in a responsible and disciplined way and adhering to an asset allocation approach that takes account of the risk-reward tradeoffs presented by a broad variety of investment types as well as the accounting treatment of investment income.

CONCLUSION

The multiple regression model that was developed to predict the financial performance of insurance companies in Ghana is significant. Indicating that underwriting efficiency, administration expense, underwriting risks, return on investment, capital adequacy, underwriting profit and investment assets determine financial performance of insurance firms in Ghana.

The growth in the insurance industry was not so spectacular. Financial performance is 17.67% independent of the financial performance indicators. From the financial model it could be deduced that for a unit change in underwriting efficiency financial performance increases by 0.003 independent of all the performance indicators. There is 0.009 increase or change in financial performance for a unit change in administrative expense. There is a significant increase in financial performance to a tune of 3.00 for a unit change in underwriting profit. Gross premium income for non-life business increased in the year 2005 but this dropped to in 2009.

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