Determinants of Financial Performance of General Insurance Underwriters in Kenya

Mirie Mwangi, PhD

Cyrus Iraya, PhD

Lecturers
University of Nairobi
School of Business
Department of Finance and Accounting
Nairobi, Kenya

Abstract

Good performance of financial institutions, including general insurance underwriters, is critical due to the important role that these entities play in an economy. Financial performance of general insurance underwriters is expected to be related to various factors. This study sought to establish the relationship between selected factors (growth of premiums; size of insurer; retention ratio; earning assets; investment yield; loss ratio; and expense ratio) and financial performance of general insurance underwriters in Kenya. The study employed multiple linear regression analysis with data for 22, 23 and 25 underwriters for the 2010, 2011 and 2012 years respectively. The results were that financial performance was positively related to earning assets and investment yield. Financial performance was negatively related to loss ratio and expense ratio. Growth of premiums, size of underwriter and retention ratio were not significantly related to financial performance. The results emphasize the need for general insurance firms to focus on the investment operations, underwriting results and efficiency.

Keywords: General insurance underwriters, financial performance, growth; size; earning assets; investment yield; retention, loss, and expense ratio

Introduction

General insurance underwriters, also referred to as property and liability or property and casualty companies are firms that accept specified risks from customers for a consideration called premium. Insurance offers protection against the occurrence of future events (Choi, 2010; Doff, Bilderbeek, Bruggink and Emmen, 2009;Elango, Ma and Pope, 2008;and Calandro and Lane, 2002).

Financial performance refers to a firms' profitability, that is how large the revenues exceed the costs incurred in generating them. There are several ways that financial performance is measured, including return on assets, return on equity, gross margin rate. Financial performance of general insurance underwriters attempts to measure how well the firm is attaining the objective of its establishment (Almajali, Alamro and Al-Soub, 2012; Calandro, 2006; PottierandSommer,1999; andBerger and Humphrey, 1997).

Insurance premiums refers to the consideration to the general insurance underwriter for underwriting specified insurable risks. General insurance underwriters' financial performance tends to be better when the institution is growing at a lower rate. This could be due to a possible relaxation of underwriting standards in order to attract more business (Choi, 2010; Barth andEckles,2009;Chen and Wong, 2004;D'Arcy and Gorvett, 2004; and Chidambaran, Pugel and Saunders, 1996).

The size of a firm, including general insurance underwriters, denotes how large the institution is. Part of the reason why this is important is that with increased size, firms are able spread fixed costs over more output, hence enjoying economies of scale. Size can be measured by, among others, total assets, gross premiums written, capital (Almajali, Alamro and Al-Soub, 2012; Berry, Liebenberg, Ruhland and Sommer, 2012; Chen and Wong, 2004).

Reinsurance is insurance for the general insurance underwriter. The excess of gross written premiums over the reinsurance premiums denotes the extent of premium and therefore risk retention in the firm.Retention ratio is retained premiums over gross written premiums. The general insurance underwriter makes the retention decision based on various factors, including the size and concentration of the individual risk. There is no clear relationship between the retention ratio and financial performance(Grace andLeverty,2012;Gaverand Paterson, 2004; and Calandro and Lane, 2002).

The financial performance of a general insurance underwriter would be affected by how much of the available funds are deployed in assets that earn a return and also how big that rate of return is (Chen and Wong, 2004).Losses incurred or total claims expense to premiums earned denotes the underwriting results or essentially the quality of business underwritten. The lower the loss ratio, the better the financial performance. Expense ratio is the total expenses (excluding claims) to premiums written and basically indicates the operational efficiency in managing the general insurance firm. The higher the expense ratio, the worse the financial performance. The sum of the loss and expense ratios is referred to as the combined ratio, and the lower it is the better the financial performance (Leverty and Grace, 2010;Chen and Wong, 2004; and Hirao and Inoue, 2004).

There are many factors that can be expected to be related to financial performance of general insurance companies. These include growth of the firm, which would be expected to be negatively related, that is the higher the rate of growth, the lower the financial performance. The expected relationship between size and financial performance of insurance underwriters is positive due to economies of scale. The relationship between retention ratio and financial performance is not definite and requires empirical determination. This is because two insurers can have very different ratios and yet record similar financial performance depending on the classes of insurance that they transact. The more the allocation of available resources to productive investments,the higher the expected financial performance.Similarly, the higher the return emanating from the investments, the better the financial performance. Claims erode earnings, and hence the lower the loss ratio, the higher the financial performance. Also the higher the relative expenses, and hence expense ratio, the worse the financial performance (Choi, 2010; Hirao and Inoue, 2004; Ahmed, Ahmed and Usman, 2011; Chen and Wong, 2004; and Ismail, 2013).

Research Problem

The insurance industry is an important component of the financial services sector. In Kenya, the sector had assets in 2013 of KSh 129.0 billion for general insurance and KSh 195.9 billion for life insurance. Liabilities were KSh 78.7 billion and KSh 167.4 billion respectively for general and life insurance subsectors. The gross annual premiums for general business were KSh 86.7 billion and for life KSh 44.3 billion (Kenya National Bureau of Statistics, 2014). Like for all corporate entities it is useful to establish the relationship between performance and various factors. This is so due to that one could then observe or measure the variable and then predict performance or separate good from poor performers (Berger and Humphrey, 1997).

Several relevant empirical studies have been carried out, including Hirao and Inoue (2004); Ahmed, Ahmed and Usman (2011); Chen and Wong (2004); and Ismail (2013). However, no similar study has been carried out in Kenya. This study intended to fill that research gap. The objective of this study was therefore to determine the relationship between selected firm specific factors (growth of premiums; size of insurer; retention ratio; earning assets; investment yield; loss ratio and expense ratio) and financial performance of general insurance underwriters in Kenya.

Methodology

The study employed a multiple regression analysis model, given by

$$FP_i = \alpha + \beta_1 GP_i + \beta_2 SZ_i + \beta_3 RR_i + \beta_4 EA_i + \beta_5 IY_i + \beta_6 LR_i + \beta_7 ER_i + \varepsilon$$

Where,

FP	= Financial performance of insurance underwriter
α	= Intercept, a sample-wide constant
GP	= Growth of premiums
SZ	= Size of insurer
RR	= Retention ratio
EA	= Earning assets
IY	= Investment yield

LR   = Loss ratio
ER   = Expense ratio
ε   = error term

$\beta_1, \beta_2, \beta_3, \beta_4, \beta_5 \beta_6, \beta_7$ = coefficients for the respective determinants.

The variables were operationalised as follows:

Table 1: Operationalisation of Variables

	Variable	**How measured**
1	Financial performance of insurance underwriters	Return on assets= Profit before tax/Average total assets
2	Growth of premiums	Annual rate
3	Size of insurer	Log of total assets
4	Retention ratio	Net written premiums/Gross written premiums
5	Earning assets	Investments to total assets
6	Investment yield	Investment income to average investments
7	Loss ratio	Claims incurred/Net earned premiums
8	Expense ratio	Commissions and management expenses/Net earned premiums

The study covered 22, 23 and 25 general insurance companies in Kenya for the respective three year period 2010, 2011 and 2012.

Results and Discussions

The descriptive statistics are shown in Table 2. The financial performance ranged from negative 8% per annum to a high of 40% per annum, with a mean of 9% per year. The premiums grew by between negative 5% per annum and 140% per annum, with a mean of 25% per year. The size of the underwriters ranged from a high of 7 to a low of 5.7, with a mean of 6.3. The insurance companies retained on average 75% of the gross premiums and ceded 25%. The lowest retention for an underwriter in any year was 49% and highest was 98%. The mean of earning assets to total assets was 54%, a high of 89% and a low of 13%. Investment yield ranged from 3% to 68% with a mean of 26% per annum. The insurance companies incurred a loss ratio of 31% to 81% with a mean of 57%. The mean expense ratio was 53%, highest 135% and least was 28%. All the mean and median values were similar depicting a reasonably normal distribution of the values of the variables.

Table 2: Descriptive Statistics

Variable	Mean	Std. Deviation	Median	Lowest	Highest
Financial Performance (% per annum)	8.94	6.96	7.3	- 8.4	39.6
Growth of Premiums (% per annum)	24.6	29.5	19.9	- 47.2	140.4
Size of Insurer (log of total assets)	6.308	.326	6.283	5.677	6.964
Retention Ratio (%)	75.4	13.9	76.7	49.1	98.3
Earning Assets(%)	53.8	16.5	53.9	12.8	89.0
Investment Yield(% per annum)	25.8	15.0	23.4	3.4	68.1
Loss Ratio(%)	57.0	11.7	57.3	31.0	81.3
Expense Ratio (%)	53.4	18.1	50.1	27.8	134.9

The results of the correlation analysis are shown in Table 3. They indicate a relationship between financial performance and investment yield that is positive and moderate; and weakly positive for both size of insurer and earning assets. Between financial performance and growth of premiums, retention ratio, loss ratio andexpense ratio, the relationship was negative and weak. No case of multi-collinearity among the independent variables existed.

Table 3: Pearson Product Moment Correlation

		1	2	3	4	5	6	7	8
1	Financial Performance	1.000							
2	Growth of Premiums	-.235	1.000						
3	Size of Insurer	.259	-.154	1.000					
4	Retention Ratio	-.082	.280	-.199	1.000				
5	Earning Assets	.297	-.214	.325	.001	1.000			
6	Investment Yield	.403	-.189	-.168	-.299	-.413	1.000		
7	Loss Ratio	-.169	-.192	.334	-.167	.187	-.166	1.000	
8	Expense Ratio	-.134	-.019	-.344	-.244	-.082	.271	-.645	1.000

Source: Research Data

The results of the multiple regression analysis are shown in Tables 4.

Table 4: Regression Results for Financial Performance as Dependent Variable and Various Factors as Predictors

a) Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.858(a)	.737	.707	.038

a Predictors: (Constant), Growth of Premiums, Size of Insurer, Retention Ratio, Earning Assets, Investment Yield, Loss Ratio, Expense Ratio

b) Goodness of Fit– ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.246	7	.035	24.76	.000(a)
	Residual	.088	62	.001		
	Total	.334	69			

a Predictors: (Constant), Growth of Premiums, Size of Insurer, Retention Ratio, Earning Assets, Investment Yield, Loss Ratio, Expense Ratio
b Dependent Variable: Financial Performance

c) Regression Coefficients

Model		B	Std. Error	t	Sig.
1	(Constant)	.112	.138	.809	.421
	Growth of Premiums	-.016	.017	-.915	.364
	Size of Insurer	.030	.017	1.787	.079
	Retention Ratio	-.058	.041	-1.402	.166
	Earning Assets	.253	.033	7.588	.000
	Investment Yield	.327	.037	8.774	.000
	Loss Ratio	-.415	.058	-7.157	.000
	Expense Ratio	-.273	.040	-6.896	.000

a Dependent Variable: Financial Performance

The goodness of fit results of standard linear multiple-regression with financial performance as the dependent variable and various determinants as predictors are reported in Table 4(a). The model summary is in Table 4 (b). The model reveals a statistically significant relationship between financial performance and determinants (Sig.=< 0.05). The multiple regression model had an Adjusted R^2 = .707, F (7, 62) = 24.76, and a standard error of 0.038.

The model coefficients are shown in Table 4(c). The findings indicate that the significant predictors of financial performance were earning assets($\beta = 0.253$, p=<0.05), investment yield,($\beta = 0.327$, p=<0.05), loss ratio($\beta = -0.415$, p=<0.05), and expense ratio($\beta = -0.273$, p=<0.05).Financial performance was not significantly predicted by growth of premiums($\beta = -0.016$, p>0.05),size of insurer($\beta = 0.030$, p>0.05), and retention ratio($\beta = -0.058$, p>0.05).

The study explored the relationship between financial performance and various determinants by suggesting that there is a statistically significant relationship between financial performance of insurance companies and selected factors. Results of this study indicate that the relationship between financial performance of insurance companies and selected factorsis statistically significant (p=<0.05) for four predictor variables (earning assets, investment yield,loss ratioand expense ratio). The null hypothesis was rejected and therefore the alternate one was accepted, meaning that there is a significant relationship between financial performance of insurance companies and determinants.

The analytical model which was:

$FP_i = \alpha + \beta_1 GP_i + \beta_2 SZ_i + \beta_3 RR_i + \beta_4 EA_i + \beta_5 IY_i + \beta_6 LR_i + \beta_7 ER_i + \varepsilon$is therefore specified as:

$FP_i = 0.112 - 0.16 GP_i + 0.030 SZ_i - 0.058 RR_i + 0.253 EA_i + 0.327 IY_i - 0.415 LR_i - 0.273 ER_i$

Where,

FP   = Financial performance of insurance underwriter
α = Intercept, a sample-wide constant
GP   = Growth of premiums
SZ   = Size of insurer
RR   = Retention ratio
EA   = Earning assets
IY   = Investment yield
LR   = Loss ratio
ER   = Expense ratio

Since the regression coefficients of growth of premiums,size of insurer, retention ratioand the constant are not statistically significant and therefore their beta regression coefficients were not different from zero,the regression model can then be simplified to:

$FP_i = 0.253 EA_i + 0.327 IY_i - 0.415 LR_i - 0.273 ER_i$

Conclusion

The relationship between financial performance and both allocation to earning assets and investment yield was positive and in accordance with the theoretically expected relationship. This finding was also as per the results of Chen and Wong (2004) for Asian general insurance companies for the period 1994 to 1999.Financial performance was negatively related to both loss ratio and expense ratio, as theoretically expected. Chen and Wong (2004) found a negative relationship between performance and combined ratio (loss and expense ratio) for Asian general insurance companies for the period 1994 to 1999.

The study found no relationship between size and financial performance, against an expected positive relationship. Hirao and Inoue (2004) found a positive relationship for Japanese property- casualty insurance firms for the period 1980 to 1995. Chen and Wong (2004) found a positive one, and so did Ismail (2013) for Malaysian general insurers for the period 2004 to 2007. The study found no relationship between financial performance and growth rate, against an expected negative relationship. Ahmed, Ahmed and Usman, (2011) also found no relationship between growth and performance for listed life insurance companies in Pakistan for the period 2001 to 2007. There was no relationship between retention ratio and financial performance, as theoretically expected.

The study findings are that the higher the ratio of earning assets to total assets, the better the financial performance of general insurers in Kenya. Similarly, a higher investment yield is related to better financial performance. The higher the loss and expense ratios, the worse the financial performance. Having regard to the growth rate, size and retention ratiowould not assist determine financial performance of general insurance companies in Kenya.

The implications of the results to practice is that managers of general insurance underwriters in Kenya should attempt to maximise allocation of resources to income generating assets and ensure that these funds are invested in high return assets. Further, the managers need to be stringent and ensure that the loss ratio is kept low and also the expense ratio.

From the results, it would appear that there may not be a need for policy focus on growth of the underwriters, but perhaps more on ensuring that the firms are better managed (low combined ratio and higher investment returns). One of the study limitations was that data was not readily available for a long duration. However, 70 data points were considered sufficient to enable reasonable conclusions be arrived at. It may be useful to consider a longer time duration to re-assess the relationship between size and financial performance. It may also be useful to carry out a similar study for the life insurance companies in Kenya.

References

Ahmed, N., Ahmed, Z. &Usman, A. (2011). Determinants of Performance: A Case of Life Insurance Sector of Pakistan. International Research Journal of Finance and Economics, 61, 123-128

Almajali, A. Y., Alamro, S.A. &Al-Soub, Y. Z. (2012). Factors Affecting the Financial Performance of Jordanian Insurance Companies Listed at Amman Stock Exchange. Journal of Management Research, 4(2), 266-289

Barth, M. M. &Eckles, D. L. (2009). An Empirical Investigation of the Effect of Growth on Short-term Changes in Loss Ratios.The Journal of Risk and Insurance, 76(4),867-885

Berger, A. N. & Humphrey, D. B. (1997). Efficiency of Financial Institutions: International Survey and Directions for Future Research. European Journal of Operational Research, 98, 175-212

Berry, T. R., Liebenberg, A. P., Ruhland, J. S. &Sommer, D. W. (2012).Determinants of Corporate Diversification: Evidence from the Property-Liability Insurance Industry. The Journal of Risk and Insurance, 79(2), 381-413

Calandro, J. Jr. (2006).Accident Year Development, Bonus Banks, and Insurance Incentive Compensation.Risk Management and Insurance Review, 9(2), 205-217

Calandro, J. Jr. & Lane, S. (2002).The Insurance Performance Measure: Bringing Value to the Insurance Industry. Journal of Applied Corporate Finance, 14(4), 94-100

Chen, R. & Wong, K. A. (2004).The Determinants of Financial Health of Asian Insurance Companies. The Journal of Risk and Insurance, 71(3), 469-499

Chidambaran, N. K., Pugel, T. A. & Saunders, A. (1996).An Investigation of the Performance of U.S. Property-Casualty Insurance Industry, Wharton Financial Institutions Center, Working Paper 96-14

Choi, B. P. (2010).The U.S. Property and Liability Insurance Industry: Firm Growth, Size and Age, Risk Management and Insurance Review, 13(2), 207-224

D'Arcy, S. &Gorvett, R.(2004). The Use of Dynamic Financial Analysis to Determine Whether an Optimal Growth Rate Exists for a Property-Liability Insurer, Journal of Risk and Insurance, 71, 583-615.

Doff, R., Bilderbeek, J., Bruggink, B. &Emmen, P. (2009).Performance Management in Insurance Firms by Using Transfer Pricing. Risk Management and Insurance Review, 12(2), 213-226

Elango, B., Ma, Y. & Pope, N. (2008). An Investigation into the Diversification–Performance Relationship in the U.S. Property–Liability Insurance Industry. The Journal of Risk and Insurance, 75(3), 567-591

Gaver, J. J. &Paterson, J. S. (2004).Do Insurers Manipulate Loss Reserves to Mask Solvency Problems? Journal of Accounting and Economics, 37, 393-416

Grace, M. F. &Leverty, J. T. (2012).Property–Liability Insurer Reserve Error: Motive, Manipulation, or Mistake. The Journal of Risk and Insurance, 79(2), 351-380

Hirao, Y. &Inoue, T. (2004). On the Cost Structure of the Japanese Property–Casualty Insurance Industry. The Journal of Risk and Insurance, 71(3), 501-530

Ismail, M. (2013).Determinants of Financial Performance: The Case of General Takaful and Insurance Companies in Malaysia. International Review of Business ResearchPapers, 9(6), 111-130

Kenya National Bureau of Statistics (2014).Economic Survey, 2014.

Leverty, J. T. &Grace, M. F. (2010).The Robustness of Output Measures in Property-Liability Insurance Efficiency Studies, Journal of Banking & Finance, 34, 1510-1524

Pottier, S. W. &Sommer, D. W. (1999). Property-Liability Insurer Financial Strength Ratings: Differences Across Rating Agencies, The Journal of Risk and Insurance, 66(4), 621-642