

# Financial Efficiency Measurement of Non-Life Insurance Companies in Bangladesh

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## Abstract

*In this article, an endeavor has been taken to measure the financial efficiency of non-life insurers in Bangladesh to understand the level of efficiency. The CAMEL ratios, as a whole, revealed that the RICL was in top position among the selected companies and financially most efficient. So, all the non-life companies operating in Bangladesh have some learning from RICL. On the other hand overall financial efficiency of the selected companies showed that ELICL, PICL, MICL, BGICL, FICL, EICL, CICL and KICL stood 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th position respectively. Analysis of Variance (ANOVA) revealed significant differences among the companies for all the CAMEL ratios but insignificant no differences among years due to different operational efficiency of different companies during the study period.*

**Key words:** Insurance, Financial Efficiency, CAMEL Ratios, Non-life and ANOVA

## **Introduction**

Insurance business played an important role in the economic development of a country like other financial institutions. Globally insurance is recognized as financial services with banking services under the financial service authority (FSA) of general agreement on trade and services (GATS) in the world trade organization (WTO) framework (Habib, 2006, p. 89). The insurance sector plays an important role in the service based economy due to the services are now being integrated into wider financial industry (Malik, 2011, p. 315). Insurance has proved its value as essential mechanism by providing social security in the developed world as well as in the developing country (Neger, 2010, p. 74). In the developing countries the need for insurance as a risk transfer mechanism is even more imperative (Saad & Idris, 2011, p. 111). All the above statements will be more effective if the insurance companies are itself efficient. Financial institutions, such as banks, insurance companies, leasing companies and other non-bank financial organizations can play key role in the industrialization, expansion of business and non-business activities, capital formation, physical resource development, human resource development and the like through mobilization of financial resources in the economic development of a country. Insurance is the second largest financial intermediation in Bangladesh (BBS, 2014). So, if insurance sector gets proper and efficient nursing, Bangladesh can get remarkable feedback from this sector.

## **Objectives of the Research**

The main objective of this research work is to measure financial efficiency of non-life insurance companies in Bangladesh. To attain the main objective, some specific objectives are set out as follows:

- To measure the financial efficiency non-life insurers in Bangladesh;
- To identify the reasons of inefficiency of non-life insurers in Bangladesh; and
- To recommend the ways to overcome from those problems.

### Review of Related Literature

**Barros, Barroso & Borges (2005)** conducted a studied to evaluate the efficiency and productivity of insurance companies in Portugal. They conclude as the state policy designed to encourage the control of wages and the adoption of disincentives to principal-agent relationships and the collective action problem would yield increased efficiency. Furthermore, increasing the governance and transparency of the companies in question would increase their efficiency. They suggested that increased competition resulting from Single Market Program (SMP) undoubtedly increases the efficiency of the units operating in the previously protected market.

**Karim & Jhantasana (2005)** tried to find out the correlation between cost efficiency and profitability of life insurance firms in Thailand. They found there is no significant relationship between inefficiency and age of firm. They also found that inefficiency has substantial effect on the profitability of life insurance companies. Inefficiency is negatively correlated with the ROE ratio; i.e, efficiency improvement is positively correlated with profitability. They recommend that increasing efficiency should be the main priority for the Thai life insurance industry.

**Hao (2007)** in his paper examined efficiency on Taiwan's Life Insurance Industry- using X-Efficiency Approach. The study revealed that firms with large market share tend to be cost efficient and more profitable. He suggested increasing efficiency by merger and acquisition. He also suggested increasing companies' investment ability to increase ordinary life insurance premium revenue.

**Afza & Asghar (2010)** tried to measure the efficiency of insurance company in Pakistan. They identified that during the study period the insurance sector in Pakistan had less cost efficiency in terms of allocative efficiency as compared to technical efficiency. They suggested that managers of insurance companies have to be very conscious about per unit cost of inputs in future and have to improve their cost efficiency.

**Abidin & Cabanda (2011)** conducted a study on 'efficiency of non-life insurance in Indonesia'. Their empirical results showed that, bigger size

insurance company is more efficient than smaller firms. Another finding was, companies with captive market and company's group with non-captive market have relatively the same result in case of efficiency.

**Neger (2010)** conducted a research on 'Trend and Performance of Insurance Business in Bangladesh'. The findings of the research were- (i) Claim settlement and payment of premium is important for development of insurance business; (ii) Insurance company, provides an important role on economic growth of Bangladesh; (iii) Public insurance companies fairly satisfied on the empathy and representativeness dimension; and (iv) Private companies are fairly satisfied with the assurance and tangible dimension

**Hasan & Khanam (2013)** made a study on performance evaluation of public sector general insurance company in Bangladesh: A case study on SBC. They found that operational performance (profitability & activity) is satisfactory but financial performance (long term solvency, liquidity & productivity) is moderately satisfied. As a whole the performance of SBC found more or less satisfactory during the study period. Finally, the paper suggested that for continuous growth and development, SBC should take strategic steps, like adoption of modern techniques for assets management, follow-up of modern marketing strategies, launching more research and development programs, develop HRD programs, relaxing pricing rules and the like.

**Rahman (2013)** performed a comparative study on the efficiency of Bangladeshi conventional and Islamic life insurance industry: A non-parametric approach. This study endeavor is to examine the efficiency in the both life insurance and takaful life industry of Bangladesh. Finding of this study indicates that conventional and takaful life industry of Bangladesh, the smaller the size of the companies, the higher the probability for the companies to be more efficient in utilizing their inputs to generate more outputs. In this evaluation seen Takaful life insurance played efficiency except in technical efficiency change by 8.4 percent less compare to conventional life insurance as per Malmquist index. This report reveals there are some inefficient life insurance companies in the conventional one. For these poor performances conventional industries show less productivity then

takaful life insurances operators. As there are dual financial system are practicing takaful life showed efficient performance. This result indicates that Takaful life insurance industries have a great potential to further increase their TFP through improvements in both efficiency and technical component such as enhancing the use of information and communication technology in order to provide good services to customers. However, this study also found that there were diminutive significant growths in technical components and no improvement in efficiency change which suggested that TFP in the Islamic Insurance industry is due to the less innovation in technical components coupled with an insignificant improvement on the aspect of efficiency.

**Chowdhury & Huda (2014)** performed a study on performance evaluation of selected private life insurance companies in Bangladesh. In this paper the researchers have tried to analyze the development and growth of selected private life insurance companies of Bangladesh. It is observed that all the selected private life insurance companies were able to achieve a stable growth of premium and total assets during the period of 2007-2011. Seven trend equations have been tested for different activities of private life insurance companies. Among them the trend value of premium, investment fund, total assets and earnings per share are positive incase of all the selected private life insurance companies. Square of correlation coefficient ( $r^2$ ) has also been tested for all trend equations. The  $r^2$  of premium, investment fund and total assets is more than 0.5. It indicates the prospect of private life insurance companies in Bangladesh is very bright.

**Ahmed & Alam (2015)** carried out a study on comparative financial performance measurement of green delta and reliance insurance company limited in Bangladesh: An analytical study. The objective of the study is to evaluate the financial performance and to estimate relationship among net income, premium income and firm size of selected insurance companies. The findings showed that there is a significant association among net income, premium income and firm size. The results also showed a mixed performance of the selected companies over the study period. Average performance of GDICL was far better than RICL but RICL was outstanding in steady

performance during the study period. The study highly suggested for steady performance. Being for this idle money should be invested in profitable sources, premium income should be increased by introducing need based new products, training to the employees, settle claim in short and reasonable time etc., and dividend should be paid equally in each year through creating dividend equalization fund.

### **Methodology of the Study**

The study is mainly conducted on the basis of secondary data to evaluate the financial efficiency of non-life insurance companies in Bangladesh. The study covers ten years period from 2004 to 2013. A total of 34 companies are listed in Dhaka Stock Exchange (DSE). 25 percent (8.5 i.e., 9 companies) of those companies have been selected randomly as sample. These are (i) Karnaphuli Insurance Company Limited (KICL), (ii) Rupali Insurance Company Limited (RICL), (iii) Eastland Insurance Company Limited (ELICL), (iv) Bangladesh General Insurance Company Limited (BGICL), (v) Federal Insurance Company Limited (FICL), (vi) Central Insurance Company Limited (CICL), (vii) Eastern Insurance Company Limited (EICL), (viii) Pioneer Insurance Company Limited (PICL) and (ix) Mercantile Insurance Company Limited (MICL). Efficiency of insurance company can be measured in different ways. In this article, financial efficiency of insurance companies has been measured through IMF guided CAMEL ratios (Das, Davies, & Podpiera, 2003). The CAMEL framework, adds the Actuarial and Reinsurance issues to the CAMEL methodology normally used for bank analysis. The researcher has also used the SPSS software (Version 20.00) to compare the variations of results among companies and years derived from CAMEL ratios.

### **Analyses and Interpretation of Results**

- **Capital Adequacy Analysis**

Capital adequacy ratio is the ratio which protects financial institutions against excess leverage, insolvency and keeps them out of difficulty (Fatima, 2014). Gradual increase of premium income is the indicator of higher efficiency. But the healthy growth in net premium is considered to be risky

unless supported by optimal balanced capital (Kim, Anderson, Amburgey & Hickman, 1995).

**Table No. 1 Capital Adequacy Ratio of Selected Insurance Companies during 2004-2013 (In Percentage)**

Co.		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KICL	a	81.46	79.58	70.69	57.82	49.19	39.41	21.71	18.17	20.69	19.98
	b	35.56	39.78	32.73	33.26	38.06	53.04	70.87	70.63	67.79	69.53
RICL	a	64.35	64.15	69.81	92.60	93.69	44.55	50.41	58.09	35.78	28.74
	b	51.69	51.49	51.57	51.86	52.49	68.75	67.08	64.87	71.05	71.35
ELICL	a	55.48	46.19	48.63	46.35	44.94	41.30	39.87	34.62	39.39	35.16
	b	41.87	54.77	49.94	53.75	58.07	55.68	61.68	66.70	56.91	62.92
BGICL	a	47.20	41.18	44.75	38.75	35.39	22.57	26.68	28.68	30.83	31.54
	b	57.55	64.50	61.46	62.18	59.06	84.99	82.13	79.23	77.34	68.12
FICL	a	106.17	79.36	70.88	85.54	83.21	84.94	85.82	39.72	43.41	44.77
	b	25.16	26.18	27.57	28.36	29.25	31.95	32.18	52.03	51.73	51.05
CICL	a	63.75	85.04	52.51	47.32	48.47	22.43	21.88	26.05	20.54	21.81
	b	34.45	34.14	42.59	44.06	45.73	65.48	56.81	56.81	64.02	62.32
EICL	a	50.73	52.21	49.77	49.92	22.84	20.36	20.33	10.73	12.50	12.88
	b	43.19	50.92	54.02	58.07	78.31	82.76	74.99	85.62	80.82	78.72
PICL	a	36.96	44.64	59.54	74.30	109.18	115.79	108.98	89.10	78.37	73.61
	b	51.64	47.01	42.28	38.84	42.84	41.89	48.85	52.99	57.05	58.72
MICL	a	35.62	42.49	32.86	43.56	43.55	35.37	40.41	28.62	27.04	23.00
	b	53.98	51.35	49.68	47.94	50.97	51.29	50.32	63.60	60.40	58.55

*Source: Compiled from data of Annual Reports of Selected Insurance Companies during 2004-2013.*

- Note: a. Ratio of Net Premium to Capital  
b. Ratio of Capital to Total Assets

From the capital adequacy ratio (CAR) it is found that FICL and PICL retained more indemnity risk and which is to be carried by capital. Similarly, KICL, RICL, ELICL, BGICL, CICL, EICL and MICL have been able to shift indemnity risk and have fewer burdens on capital due to said risk retention. Premium income of ELICL was not in accordance with growth of capital. The minimum paid up capital (400 million) criteria set up by Insurance Act 2010, has been satisfied by all the insurers except KICL (369.20 million) till 2013. Lower range of all the insurers was between 35 to 60 percent except FICL (22.94%) for capital to total asset ratio and higher range between 60 to

90 percent except FICL (52.03%) and PICL (58.72%). The above mentioned statistics give an idea that all the selected companies maintained satisfactory CAR. As all the selected insurers depicted satisfactory CAR, so emphasis should be given on consistent performance collection of premium in accordance with capital.

**Table No.: 2 ANOVA: Two-Factor without replication  
for capital adequacy**

Ratio	Sources of variation	F	P-value	F-crit.
Net Premium to Capital	Year	4.11	0.00	2.01
	Company	11.03	0.00	2.07
Capital to Total Assets	Year	15.82	0.00	2.01
	Company	23.98	0.00	2.07

Source: Calculation from Table No. 1

From the table number 2, it is observed that the calculated value of F is greater than the table value of F at 1 percent level of significance for all the four cases. Thus significant differences among the years and companies were observed under review period regarding net premium to capital and capital to total assets.

- **Asset Quality Analysis**

Assets quality largely depends upon the investment portfolios. Investment in real estate and housing sectors amount to 10 percent of total assets is the base of the non life insurance companies. In Bangladesh there is no direct investment made by insurance companies to real estate and housing sectors. Some of them are invested to the shares of real estate and housing companies. About 80 percent of total assets were invested to statutory deposit with Bangladesh bank, shares and debentures and Fixed Deposit Return (FDR). Analyses of assets quality are presented in table number 3:



**Table No. 3 Assets Quality Ratio of Selected Insurance Companies during 2004-2013 (In Percentage)**

		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
<b>KICL</b>	a	8.30	8.13	5.41	6.33	8.81	10.07	14.49	20.16	18.89	16.30
	b	19.74	20.81	14.94	23.23	22.40	21.41	14.89	13.92	15.66	16.36
<b>RICL</b>	a	3.37	3.27	2.91	2.71	4.07	3.05	4.36	4.56	3.48	2.83
	b	24.73	23.99	23.14	19.92	13.43	6.67	4.90	4.72	3.75	4.27
<b>ELICL</b>	a	22.82	21.21	18.87	25.46	31.40	38.55	36.68	22.63	16.96	14.72
	b	21.75	18.66	23.04	23.61	19.06	21.64	17.61	18.97	23.22	19.21
<b>BGICL</b>	a	8.94	7.67	6.87	4.58	9.76	8.89	22.84	21.69	19.49	19.31
	b	1.99	1.90	1.99	1.56	1.70	0.94	0.79	1.16	1.34	1.65
<b>FICL</b>	a	1.47	1.85	2.49	2.81	2.64	2.63	2.42	2.12	2.42	2.96
	b	49.32	47.76	48.29	46.75	45.53	30.60	29.51	25.79	24.39	26.18
<b>CICL</b>	a	0.00	0.25	0.24	0.41	3.00	3.83	6.25	4.63	4.00	3.75
	b	11.86	12.26	12.82	16.43	17.41	8.24	8.73	10.98	7.15	9.57
<b>EICL</b>	a	20.43	26.14	24.80	22.22	32.36	28.84	33.46	30.77	29.19	29.40
	b	6.15	14.44	5.57	5.09	0.06	3.67	3.24	1.85	1.98	2.89
<b>PICL</b>	a	15.66	24.37	22.21	20.50	25.96	30.48	24.92	18.18	16.04	16.61
	b	22.88	14.10	21.58	25.63	17.64	22.41	25.84	15.07	18.65	15.37
<b>MICL</b>	a	0.00	0.00	0.00	0.69	7.81	3.68	10.57	6.25	5.39	5.26
	b	4.49	5.43	7.36	8.82	8.68	4.87	4.01	0.81	0.18	0.27

*Source: Compiled from data of Annual Reports of Selected Insurance Companies during 2004-2013.*

- Note:
- Ratio of Equities to Total Assets
  - Ratio of (Real Estate + Unquoted Equities + Debtors) to Total Assets

The analyses reveal that pleasing volume of equity investments were made by selected insurance companies in Bangladesh but CICL in the year 2004 and MICL in the years 2004, 2005 and 2006 showed zero (0) equity investment. From the annual reports of selected companies, it is witnessed that no direct real estate and housing investment were made by insurers in Bangladesh but some companies invested to the share of real estate and

housing companies. BGICL, EICL and MICL were evident for poor ratio ranging between 0.79 to 1.99, 0.06 to 14.44 and 0.18 to 8.82 percent respectively which should be more than 10 percent. Non life insurance companies in Bangladesh are made maximum investment to statutory government securities, share of listed companies and FDR, the investments may be termed as risk free and at the time of unexpected claims, companies can handle insolvency problems efficiently. But to increase assets quality investment portfolio should be revised through increasing equity and real estate investments prescribed by IMF.

**Table No.: 4 ANOVA: Two-Factor without replication for asset quality**

Ratio	Sources of variation	F	P-value	F-crit.
<i>Equities to Total Assets</i>	Year	4.11	0.00	2.01
	Company	60.75	0.00	2.07
<i>Real Estate + Unquoted Equities + Debtors to Total Assets</i>	Year	5.29	0.00	2.01
	Company	59.68	0.00	2.07

Source: Calculation from Table No.3

From the table number 4, it is observed that the calculated value of F is greater than the table value of F at 1 percent level of significance for all the four cases. Thus significant differences among the years and companies were observed under review period regarding equities to total assets and real estate + unquoted equities + total debtors to total assets.

- **Analysis of Reinsurance & Actuarial Issues**

The Government of Bangladesh has permitted all non-life insurance companies for making re-insurance sessions with foreign reinsurer up to their 50% portfolios (Annual Report of Eastern Insurance Company Limited, 2013, p.27). Reinsurance and Actuarial issues also known as the risk retention ratio reflects the overall underwriting strategy of the insurer and portrays what proportion of risk is passed onto the reinsurers.

**Table No. 5 Reinsurance and Actuarial Ratio of Selected Insurance Co. during 2004-2013 (In Percentage)**

Co.		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KICL	a	64.27	66.49	66.25	61.91	63.81	60.59	68.96	58.95	56.69	62.60
	b	981.78	538.20	362.97	298.65	314.29	377.25	618.43	820.95	1147.79	1660.40
RICL	a	64.01	60.74	58.29	68.72	66.48	64.22	66.55	65.96	64.29	59.56
	b	882.81	525.74	473.60	472.55	436.40	359.25	359.24	362.62	387.68	348.56
ELICL	a	61.11	63.46	56.39	55.69	56.03	54.80	55.92	57.39	53.37	54.28
	b	232.27	466.89	431.80	612.60	544.14	628.99	807.49	677.06	576.43	553.01
BGICL	a	57.28	49.76	52.87	43.09	37.98	52.46	64.63	64.79	59.78	54.31
	b	1240.05	1499.44	1610.59	892.19	643.60	579.80	873.00	865.26	819.60	724.76
FICL	a	66.55	55.62	49.36	57.33	52.82	62.01	65.13	63.85	67.08	59.73
	b	396.43	409.06	331.85	285.28	284.85	279.64	285.14	214.64	184.07	149.09
CICL	a	75.50	71.88	65.86	55.27	59.19	59.58	60.41	65.76	69.48	74.25
	b	233.89	385.96	501.82	438.11	371.77	944.20	926.68	629.39	783.22	704.31
EICL	a	60.60	63.17	63.00	66.34	59.08	59.01	49.79	49.51	55.39	55.38
	b	5616.75	3297.14	1271.85	768.45	3510.25	2896.80	1658.75	2528.34	2059.53	2273.88
PICL	a	46.90	43.26	48.13	50.72	48.55	45.77	42.42	44.95	46.58	46.72
	b	80.64	125.69	108.70	135.26	109.54	120.67	165.40	241.77	245.28	266.85
MICL	a	55.10	56.98	47.40	56.44	53.15	52.96	53.51	60.50	55.59	52.81
	b	195.72	539.20	1084.97	857.21	523.03	634.70	4506.22	2391.67	772.97	382.62

*Source: Compiled from Annual Reports of Selected Insurance Companies during 2004-2013*

- Note: a. Ratio of Net Premiums to Gross Premiums  
 b. Ratio of Net Technical Reserves\* to Average of Net Claims Paid in Last Three Years

This table highlights the position of reinsurance and actuarial issues ratio of selected insurance companies. The analysis of risk retention ratio clearly indicates excellent risk retention capacity of all selected insurance companies. During the study period mixed but consistent performances were observed from all the insurers. More than 70 percent of selected companies' minimum value placed between the limit of 45 to 60 and maximum value between the limit of 60 to 70 percent. CICL showed highest ratio ranging between 55.27 & 75.50 percent. The ratio, net technical reserves to average of net claims paid in last three years reflects the position of technical reserves

compared to the average claims paid in last three years. From the analysis it is evidence that all the selected companies in Bangladesh maintain high volume of reserve to support any untoward incident incurring high claims. Some companies reserve was too far above the ground that it should be further analyzed.

**Table No.: 6 ANOVA: Two-Factor without replication for reinsurance & actuarial issues**

Ratio	Sources of variation	F	P-value	F-crit.
Net Premiums to Gross Premiums	Year	0.95	0.49	2.01
	Company	13.33	0.00	2.07
Net Technical Reserves to Average of Net Claims Paid in Last Three Years	Year	0.67	0.74	2.01
	Company	11.43	0.00	2.07

Source: Table No. 5

Table number 6 shows that there are insignificant no differences situation among years were observed for the both ratios. From the same table it is found that significant differences among the companies were observed under review period at 1 percent level of significant in respect of net premium to gross premium and net technical reserve to average net claim paid in last three years.

- **Analysis of Management Soundness**

Sound management is the key to marvelous performance of financial institutions. A high or increasing ratio of expenses to total revenues can indicate that financial institutions may not be operating efficiently (Evans, Leone, Gill, & Hilbers, 2000, p.7). Ratio of operating expenses to gross premium is used for analyzing management soundness of insurers. The analysis reflects the efficiency in operations, which ultimately indicates the management efficiency and soundness.

**Table No. 7 Management Soundness Ratio of Selected Insurance Co. during 2004-2013 (In Percentage)**

Co.		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KICL	a	5.53	6.98	8.02	6.07	11.30	8.86	13.84	18.10	18.65	19.16
RICL	a	5.31	7.68	6.95	6.03	7.40	7.51	5.82	6.20	15.81	13.22
ELICL	a	9.12	7.20	8.32	7.59	9.55	9.38	6.37	12.73	15.20	11.92
BGICL	a	7.05	6.23	7.40	5.82	8.87	10.19	15.82	12.03	10.28	10.84
FICL	a	23.87	13.25	15.70	16.98	14.05	15.38	15.82	18.77	19.58	17.13
CICL	a	62.56	49.42	58.06	29.43	27.89	28.89	29.23	28.05	34.31	37.24
EICL	a	62.01	52.46	48.82	39.55	25.31	37.88	39.15	44.63	40.91	53.71
PICL	a	9.32	9.56	9.53	8.02	5.98	4.83	5.52	4.52	6.96	7.22
MICL	a	8.21	7.35	13.62	12.31	8.56	14.19	9.55	10.19	12.35	10.73

*Source: Compiled from Annual Reports of Selected Insurance Companies during 2004-2013*

Note: a. Ratio of Operational Expenses to Gross Premiums

The ratio of operating expenses to gross premium preferred to be low one. The selected companies were evidenced for mixed performance during the study period. KICL, BGICL, CICL, EICL and PICL showed trivial marginal growth of 0.51, 0.56, 2.93, 12.80 and 0.26 percent between the boundaries of 5.53 to 19.16, 5.82 to 15.82, 27.89 to 62.56, 25.31 to 62.01 and 4.52 to 9.56 percent respectively. RICL, ELICL, FICL and MICL evidenced for decreasing marginal percentage ranging between 5.31 to 15.81, 6.37 to 15.20, 13.25 to 23.87 and 7.35 to 14.19 percent respectively. Operating expenses to gross premiums ratio of CICL and EICL were comparatively large among the selected companies and indicated inefficient operations of business. Among the selected insurance companies PICL revealed superior performance in terms of management soundness.

**Table No.: 8 ANOVA: Two-Factor without replication for management soundness measurement**

Ratio	Sources of variation	F	P-value	F-crit.
Operational Expenses to Gross Premiums	Year	1.78	0.09	2.01
	Company	53.43	0.00	2.07

Source: Calculation from Table No. 7

Significant differences among the companies were observed under review period at 1 percent level of significance in respect of net technical reserve to management soundness. Insignificant no differences situation among years were observed for the same ratio.

- **Earnings and Profitability Analysis**

Earnings and profitability analysis judge the ability of the firm to generate profits that would be adequate to support its operations and also to ensure fair return on its investment (Mohapatra, 2007, p. 151). It is not uncommon to see combined ratios of over 100 percent and this may indicate that investment income is used as a factor in the setting of premium rates. Prolonged triple-digit combined ratios, in an environment of low or volatile investment yields, signal a drain on capital and the prospect of solvency problems. Another indicator, investment income to net premium, focuses on the second major revenue source-investment income. Return on equity then indicates the overall level of profitability. The five ratios comprising the indicator 'Earnings and Profitability' highlight underwriting results and investment opportunities of the concerns simultaneously.

**Table No. 9 Earnings and Profitability Ratio of Selected Insurance Co during 2004-2013 (In Percentage)**

Co.		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KICL	a	13.23	27.97	27.31	41.01	46.38	32.16	22.53	20.46	7.15	8.40
	b	8.83	10.67	12.25	10.07	17.91	14.74	20.40	31.19	33.24	31.50
	c	22.06	38.64	39.56	51.08	64.29	46.90	42.93	51.65	40.39	39.90
	d	6.04	4.48	3.38	8.02	9.31	15.98	18.77	33.73	39.51	38.80
	e	6.88	7.42	7.46	8.80	16.74	18.97	16.38	10.46	7.63	7.54
RICL	a	24.67	41.48	29.25	26.70	31.13	36.89	33.13	31.99	30.05	42.72
	b	8.66	12.85	12.20	8.96	11.31	11.90	8.90	9.76	25.08	22.84
	c	33.33	54.33	41.45	35.66	42.44	48.79	42.03	41.75	55.13	65.56
	d	9.33	9.41	9.96	7.57	7.54	8.08	6.12	8.32	17.77	27.92
	e	8.45	8.46	11.01	9.31	10.24	5.71	14.90	8.46	8.71	7.30
ELICL	a	80.40	33.47	50.44	40.43	47.19	33.91	29.13	69.70	36.75	42.21
	b	15.03	11.43	14.75	13.62	17.04	20.88	12.40	22.54	32.13	25.27
	c	95.43	44.90	65.19	54.05	64.23	54.79	41.53	92.24	68.88	67.48
	d	40.67	41.26	30.00	43.28	36.80	33.06	50.14	65.07	35.06	40.24
	e	18.64	18.77	12.38	20.58	15.96	16.89	22.71	22.49	17.41	18.55
BGICL	a	4.16	5.68	12.03	24.57	27.06	21.02	16.42	17.47	15.56	17.15
	b	14.97	17.30	15.42	18.18	26.67	21.98	26.35	20.82	19.55	23.28
	c	19.13	22.98	27.45	42.75	53.73	43.00	42.77	38.29	35.11	40.43
	d	13.61	14.52	14.72	30.44	43.89	20.21	46.59	29.29	18.62	25.22
	e	7.68	5.36	6.56	11.46	11.87	3.98	9.75	8.52	8.23	6.95
FICL	a	7.41	12.49	16.21	12.82	8.76	11.15	9.49	13.85	12.64	16.40
	b	36.45	24.29	32.38	29.94	27.04	25.52	25.12	29.69	30.35	29.23
	c	43.86	36.78	48.59	42.76	35.80	36.67	34.61	43.54	42.99	45.63
	d	2.95	4.23	3.09	4.06	4.28	3.83	5.11	9.12	18.20	17.19
	e	9.45	6.89	2.04	2.43	4.99	8.37	8.76	8.43	10.04	9.90
CICL	a	16.06	12.36	4.25	27.49	31.44	32.61	29.86	28.33	34.23	31.04
	b	84.29	69.31	88.87	53.76	47.54	48.87	48.78	43.39	49.55	51.39
	c	100.35	81.67	93.12	81.25	78.98	81.48	78.64	71.72	83.78	82.43
	d	20.60	14.80	19.99	29.20	27.77	37.31	47.06	30.02	38.82	43.95
	e	8.74	10.03	10.80	11.83	12.57	8.19	10.36	8.46	7.55	8.97
EICL	a	3.01	5.32	9.23	12.98	9.57	14.30	39.40	31.91	27.33	21.54
	b	102.55	83.21	77.65	60.63	42.93	64.30	78.72	90.18	73.87	97.21
	c	105.56	88.53	86.88	73.61	52.50	78.60	118.12	122.09	101.20	118.75
	d	41.39	34.09	20.59	28.89	25.37	36.24	57.51	57.54	55.42	50.98
	e	14.97	13.72	10.65	12.64	5.81	7.19	10.81	5.34	6.52	7.07
PICL	a	64.00	28.33	60.24	32.36	50.39	48.41	48.27	25.66	49.34	38.48
	b	19.99	22.17	19.85	15.85	12.36	10.57	13.03	10.07	14.96	15.67
	c	83.99	50.50	80.09	48.21	62.75	58.98	61.30	35.73	64.30	54.15
	d	35.58	36.53	32.34	28.53	17.48	12.41	22.09	17.15	13.78	10.85
	e	12.22	14.32	14.62	18.83	21.28	23.93	22.63	21.64	20.49	17.88
MICL	a	26.76	0.08	6.04	31.91	27.96	7.16	-18.73	22.39	40.36	41.85
	b	15.32	13.20	28.74	21.81	16.10	26.79	17.84	16.85	22.21	20.31
	c	42.08	13.28	34.78	53.72	44.06	33.95	-0.89	39.24	62.57	62.16
	d	16.94	20.37	33.15	25.26	28.84	22.59	32.26	33.10	44.05	47.80
	e	6.44	9.58	8.11	8.31	8.91	11.71	12.88	9.66	10.55	8.15

*Source: Compiled from Annual Reports of Selected Insurance Companies during 2004-2013.*

- Note:
- a. Ratio of Net Claims to Net Premiums
  - b. Ratio of Expenses to Net Premiums
  - c. Combined Ratio = a + b
  - d. Ratio of Investment Income to Net Premiums
  - e. Ratio of Net Profits to Equity Capital

Minimum claim or loss ratio is desirable to be a company efficient. Among the selected companies, FICL showed superior and balanced performance. Claim ratio of RICL, BGICL, FICL, CICL, EICL and MICL increased faintly over the study period ranging between 24.67 to 42.72, 4.16 to 27.06, 7.41 to 16.40, 4.25 to 34.23, 3.01 to 39.40 and -18.73 to 41.85 percent respectively. It is found that due to inefficient pricing and claim estimate some companies have to pay more amount of claim against premium. So at the time of efficient pricing, risk must be carefully estimated. KICL, RICL, ELICL, BGICL, PICL and MICL witnessed satisfactory expense ratio during the study period. CICL and EICL have been incurred a high volume of expenses ranging between 43.93 to 88.87 and 42.93 to 102.55 percent respectively. The expense ratio was so high compare to IDRA standard (20%) for these two companies. To keep the ratio within prescribed boundary, expenses should be reduced as well as emphasis on expansion of business that increases the amount of premium. Combined ratio should be below 100. It indicates that companies are making underwriting profit. All the selected companies reported profitable underwriting during the study period except CICL in 2004 and EICL in 2004, 2010, 2011, 2012 and 2013. Through proper risk selection and pricing, a company can avoid any untoward situation. There were no significant variations among years for claim ratio, expense ratio and combined ratio, but found variations among companies. From the analysis of investment income ratio it is found that EICL and ELICL have strong investment return, CICL, BGICL, PICL and MICL have satisfactory return but KICL, RICL and FICL have poor investment income with increasing trend. When observed the results of ROE among all the companies ELICL and PICL have been evidenced for satisfactory results; RICL, CICL and EICL witnessed trivial decreasing



trend with the boundary of 5.71 to 14.90, 7.55 to 12.57 and 5.34 to 14.97 percent respectively. Significant differences were found among performance of companies against investment income and ROE. However, through proper analysis, high quality portfolio investment may be the remedies of poor performance and each company could be high performed company.

**Table No.: 10 ANOVA: Two-Factor without replication for earning and profitability analysis**

Ratio	Sources of variation	F	P-value	F-crit.
Net Claim to Net Premium	Year	0.77	0.64	2.01
	Company	10.03	0.00	2.07
Expenses to Net Premiums	Year	1.47	0.17	2.01
	Company	56.78	0.00	2.07
Combined Ratio	Year	1.12	0.36	2.01
	Company	21.36	0.00	2.07
Investment Income to Net Premiums	Year	3.48	0.00	2.01
	Company	16.07	0.00	2.07
Net Profits to Equity Capital	Year	1.94	0.06	2.01
	Company	21.28	0.00	2.07

Source: Calculation from Table No. 9

Calculated F value compare to F-critical value indicate existence of significant differences among companies at 1 percent level of significance for all the ratios related to earnings and profitability. Year wise variations depicted insignificant no difference situation for net claim to net premium, expenses to net premium, combined ratio, and net profit to equity capital. Only investment income to net premium showed significant difference result among years at 1 percent level of significance.

- **Liquidity Analysis**

Liquidity ratio is the indicator of the firms' ability to meet its day to day obligations (Mohapatra, 2007, p. 151). The higher the current ratio, the greater is the firm's ability to meet its current obligations. Again higher liquidity ratio would mean lower profitability, a situation that would be least favored by the firm. Therefore a standard of 2:1, i.e. 200 percent has been prescribed as the ideal current ratio (Mohapatra, 2007, p 154). Like banks and

other some financial institutions, insurance company is not obliged to pay on demand. So for insurance companies the ratio is prescribed to be maintained more than 100 percent (Hampton, 1993).

**Table No. 11 Liquidity Ratio of Selected Insurance Companies during 2004-2013 (In Percentage)**

Co.		2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
KICL	a	278.63	255.72	412.18	409.74	364.88	247.90	136.92	106.62	122.71	121.44
RICL	a	159.69	162.52	168.14	171.27	174.78	176.00	191.68	192.94	272.59	277.96
ELICL	a	110.00	149.07	142.79	142.88	142.56	120.69	133.43	201.40	123.65	127.84
BGICL	a	147.45	182.04	167.21	187.63	144.27	295.55	214.01	166.05	162.82	105.09
FICL	a	118.42	121.44	124.47	127.12	129.13	135.89	136.87	198.60	195.14	185.25
CICL	a	146.43	146.73	168.94	173.41	178.66	284.41	228.40	228.31	274.98	261.78
EICL	a	134.49	121.13	133.99	156.10	294.40	233.57	157.14	377.72	298.92	265.97
PICL	a	199.26	182.08	166.80	156.89	165.27	161.51	179.81	198.72	219.63	192.22
MICL	a	193.31	184.40	179.30	174.26	170.47	181.81	165.93	246.38	229.30	217.19

*Source: Compiled from Annual Reports of Selected Insurance Companies during 2004-2013*

Note: a. Ratio of Current Assets to Current Liabilities

This table shows the liquidity ratio of selected insurance companies. In the liquidity analysis it is observed that all the selected insurance companies maintained more than 100 percent of liquid assets against of liabilities, showed companies are well thought-out to meet up unforeseen claims. Among the selected companies, PICL is in more favorable position ranging between 156.89 to 219.63 percent. KICL, EICL and CICL hold more liquid asset, have a negative impact on investment, variety between 106.62 to 412.18, 121.73 to 377.72 and 146.43 to 284.41 percent respectively. RICL and MICL showed excellent position during the entire study period except 2012 and 2013 within the boundary of 159.69 to 277.96 and 165.93 to 246.38 percent respectively. ELICL, BGICL and FICL witnessed good liquidity position within the boundary except BGICL in 2009 (295.55%) ranging between 110.00 to 201.40, 105.09 to 295.55 and 118.42 to 198.60 percent respectively. Sufficient liquid assets were hold by the selected insurance companies in Bangladesh and even some companies hold more than the

necessity in some years. So through proper liquidity analysis companies should maintain appropriate liquidity and invest in different portfolios as more as possible to increase income.

**Table No.: 12 ANOVA: Two-Factor without replication for liquidity analysis**

Ratio	Sources of variation	F	P-value	F-crit.
current Assets to current liabilities	Year	0.73	0.68	2.01
	Company	2.96	0.01	2.07

Source: Calculation from Table No.11

From the table no. lower calculated value of F (0.73) is observed compare to table value of F (2.01), indicate there are no differences among years under review period regarding current asset to current liability and result is insignificant. Again the calculated value of F (2.96) is greater than the table value of F (2.07) at 1 percent level of significant. So, significant differences among the companies were observed under the study period regarding the same ratio.

### **Efficiency Grading, A Comparative Analysis**

Efficiency grading for individual ratio articulates which company is in first position for a particular ratio. It also helps to compare the position of other companies. Finally points of individual ranking of different companies for different ratios assist to discover the best performing company during the study period. From the above mentioned all the ratio analyses, it is found that PICL stood 1st position for three ratios, RICL, BGICL, EICL and FICL stood 1st position for two ratios, ELICL and CICL stood 1st position for single ratio and KICL and MICL did not stand 1st position for any ratio among the 13 ratios. It is observed that the positions of the different companies were in different places for different ratios during the study period. However, as a whole, CARAMEL ratios revealed that RICL was in top position among the selected companies and financially most efficient. On the other hand overall financial efficiency showed ELICL, PICL, MICL, BGICL, FICL, EICL, CICL and KICL stood 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th position respectively.

## Major Findings

### On the basis of above analysis the findings are presented below

1. Ratio analysis revealed that RICL was financially sound enough among the selected companies during the study period. Based on result of financial efficiency measurement, RICL, ELICL, PICL, MICL, BGICL, FICL, EICL, CICL and KICL were in 1st, 2nd, 3rd, 4th, 5th, 6th, 7th, 8th and 9th position respectively during the study period.
2. The capital has been increased faster than the premium income in the most of the cases. As a result indemnity risk burden has been shifted to capital during the study period.
3. In case of investment most of the selected insurers have not followed the portfolio guidelines of IMF. About 80 percent of total assets of selected insurers were invested in intangible assets like FDR, shares and debentures and statutory deposit to Bangladesh Bank.
4. All the selected insurers were in good position in reinsurance and actuarial issues under the period of reviewed. Some companies (KICL, RICL, BGICL and EICL) hold too much reserve that was the cause of adverse investment.
5. Among the selected insurance companies, management soundness of CICL and EICL were found inefficient compare to others because of high operating expenses.
6. Minimum claim or loss ratio is desirable to be a company efficient. Under the study period it was found that due to inefficient pricing and claim estimate, some companies had to pay more amount of claim against premium.
7. High volume of expense ratio was found for CICL and EICL, over and above the IDRA standard (20%) among the selected insurance companies under the period of the study.
8. During the study period all insurance companies except CICL had been reported profitable underwriting.
9. Holding of excess liquid assets does not mean the best performance of the insurance companies. During the study period KICL, EICL and CICL hold more liquid assets than the necessity.

10. Insurance is the 2nd largest financial intermediation in Bangladesh. But there is a very little scope to study on insurance. At present maximum universities in Bangladesh have no department on Insurance, even few years ago there was no scope of specialized education on insurance.
11. Research and development is essential for any competitive business. In insurance sector, few companies have research and development department with strong activities. Research and development departments are inactive in maximum companies; even some companies have no such department.
12. Public image about services of insurance companies is very poor (Rahman, 2000). Bangladeshis have a negative attitude and confidence crisis towards insurance companies due to the tradition of defaulting of the insurers in some claims payments. This accounted largely for the low patronage insurance companies in Bangladesh and peoples have a strong apathy for insurance especially in rural area.

### **Recommendations**

Following suggestions are recommended for overcoming the adverse situations and enhancing efficiency of non-life insurance companies in Bangladesh.

1. To eliminate burden of indemnity risk on capital, emphasis should be given on collection of premium in accordance with capital.
2. All the insurance companies should maintain minimum capital requirement set up by IDRA and Insurance Act. In Bangladesh, for banks minimum paid up capital requirement is 4000 million where it is only 400 million for insurance companies. So through revising Act, minimum paid up capital requirement should be increased.
3. To increase the assets quality, investment portfolio should be revised through increasing equity and real estate investment.
4. Appropriate reserve should be maintained through proper analysis and management. To be efficient, additional reserves should be transferred to proper portfolio investments.
5. To avoid unnecessary claim payment against premium, pricing should

be estimated based on proper analysis and nature of risk.

6. To make sound underwriting profit, combined ratio of all insurance companies should be below 100 percent through reducing claim by proper risk analysis, appropriate pricing, reducing expenses and increasing premium income.
7. Efficient performance requires holding of balanced liquidity position that can be ensured through proper liquidity analysis and investment of extra liquid assets to different portfolios.
8. Insurance companies should be very careful for providing services to its clients. Pre-sale services are important but post-sale services are most important. It should be the secret energy for boosting an insurance company.
9. It is hoped that at present few public and private universities open specialized department on insurance. It creates great scope for insurance education and research. As insurance is the 2nd largest financial intermediation and has great opportunities of expansion, so scope of education on insurance should be increased in school, college and university level.
10. To increase patronage of insurance companies by eroding negative attitude and increasing confidence on insurance company, claim should be paid in due time.
11. To enlarge business and make high premium income, insurance company should introduce new product and policies.
12. Insurance companies, Bangladesh Insurance Academy (BIA), and Bangladesh Insurance Association should take combined effort to train the existing and newly appointed employees. At present insurance education is given to the students by some universities in Bangladesh. So insurance companies should appoint specialized personnel who have vast knowledge on insurance.

### **Conclusion**

Insurance is a way of reducing and distributing risk through planned risk management. Insurance industry is generally seen as the spine of risk

management system of any country, since it ensures financial security, serves as an important component in the financial intermediation chain, and offers long term capital for infrastructural projects. This industry is an important sector of the financial system along with the banking industry, not only in Bangladesh but all over the world. All the above statements are true when insurance companies are itself efficient. In spite of second largest financial intermediation, the contribution of insurance sector to the GDP was very shy. So, through increasing consciousness of mass people about real benefits of insurance, ensuring transparency of insurance business to its stakeholders, increasing standard of customers services, paying claim at due time, appointing skill management to operate business efficiently and ensuring proper and efficient nursing of this sector, Bangladesh can get remarkable feedback from this sector.

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