

Performance Assessment of General Insurance Business in India (2003-2013)

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Abstract

It has been asserted by many researchers that India has witnessed profound growth in the general insurance sector since opening up of the insurance market in year 2000. However, most of them calculated the growth rates of different financial performance parameters on the basis of yearly nominal values. In this study, the growth rate of different performance parameters indicating financial performance of a business sector has been estimated in both nominal terms and in real terms i.e after considering the time value of money. Substantial difference has been identified on the nominal and real growth rates of the performance parameters of the public sector and the industry as a whole. It has been observed that the estimated growth rate (both nominal & real) of the private sector are much higher than the public sector. Again, in this study, the profitability of both the sectors has been measured with suitable ratio analysis. Both the expense ratios and claim ratios of the private sector are comparatively lower than the public sector. In spite of their unfavourable expense ratios & claim ratios; the public sector maintained comparatively higher return on equity in every year under study due to their higher return from investments.

Key-words: General Insurance, Non-life sector, Gross Direct Premium, Net Premium, Operating Expenses, Profitability, Claim ratio, Expense ratio, Investment Income ratio, Return on Equity.

1. Introduction

The insurance sector in India was opened for the private companies in year 2000. Prior to year 2000, the life insurance and general insurance (non-life) market in India was dominated by Life Insurance Corporation of India (LIC) and General Insurance Corporation of India (GIC) respectively. The GIC carried out its business in India along with its four subsidiaries in all the zones in India, namely: National Insurance Co.Ltd. (Kolkata), United India Insurance Co. Ltd. (Chennai), New India Assurance Co.Ltd. (Mumbai) and Oriental Insurance Co. Ltd. (New Delhi). Following the recommendations of the Malhotra Committee (1994); in 7th December, 1999, the government passed the IRDA Act to abolish its own monopoly from both the life & non-life sector of the insurance business. From August 2000, the private companies' even foreign companies were allowed to enter into the market in collaboration with domestic partners with a maximum 26% stake. In Dec 2000, the four subsidiaries of GIC were restructured as independent companies and at

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the same time GIC was instructed to stop writing direct business and was converted into a national re-insurer.

State of Insurance Business in India: Liberal Period – Year 2000 onwards

Competition was reintroduced with entry of large number of private companies into the field. It has thrown a new challenge before the public sector companies. Many large and well established world class private companies have entered into the general insurance sector in collaboration with suitable domestic partner to grab new opportunities. Such as, IFFCO Tokio, TATA AIG, Bajaj Allianz, ICICI Lombard, Reliance General etc. Now it has become quite tough to work in a competitive environment for the public insurers who were habituated in receiving assistance from the government and did not concentrate to improve their levels of efficiency in the pre- liberal period. The benefits of liberalization can be seen with increase in volumes of premium of both the public and private sector, market penetration and insurance density; innovation in all areas, like underwriting, product pricing, marketing, policyholder servicing etc.

In **Table I**, a comparative statement of growth and market share occupied by public and private sector general insurance companies in terms of New Policies issued (in lakhs) and Gross Direct Premium collected during 2003-04 to 2012-13 has been presented. The gross direct premium collected by the non-life insurers (both public & private) in the year 2012-13 was Rs. 65022.50 crores out of which the public sector and private sector collected Rs. 37071.80 crores and Rs. 27950.70 crores respectively. This represents that the market share occupied by the public sector is 57.01 % as against 42.99 % of the private sector. Amazingly, it is found that though the public companies collectively issued 64.44 % of the total policies in 2012-13, its share in total gross direct premium collected by the industry is 57.01 % whereas market share of the private sector (42.99 %) in terms of gross direct premium collected by the industry is more than the share in number of total policies issued i.e. 35.56 %. Similar trend has been detected from the year 2003-04 to 2012-13. This may be due to the difference in pricing strategies adopted by the public & private insurers in pricing their insurance products they offer.

A strong contention prior to opening up of the insurance sector in year 2000 was whether the acquisition of the market shares by the private companies is at the expense of the public sector enterprises. From Table I we find that the gross direct premium increased in every year under study in both the public and the private sector. Thus increase in gross direct premium denotes that the public sector enterprises have obviously not lost its growth momentum and the market share of the private players has come out of an enlarged market. This enlargement of the market is mostly due to the efforts of the private players themselves.

2.1 Review of Literature

There is sizable literature on general insurance industry in conforming to its long history and economic importance. Some of the relevant existing studies and literature have been discussed below:

Verma (2000), in her thesis, evaluated the performance of the GIC and its subsidiary companies over the years, throwing light on the probable effects of the various insurance sector reforms on the future development of General Insurance in the country. She also studied the origin, aims and functions of the corporation and its product development. The study was based on the published and primary data. The techniques like trend analysis, averages, graphs etc. were used to analyze the quantitative data. The study found that the GIC along with its subsidiaries has emerged not only as a strong insurance institution but also as an influential institutional investor in the financial market of India due to large amount of funds at its disposal. It made investment with the objective of safety and maximization of return. The underwriting results showed losses in about all the years

except 1993-94. Despite the rise in premium income, the profit position had not improved due to rise in expenses, commission and net incurred claims at a higher rate than the growth premium income. The study suggested that GIC should bring reform in pricing the General Insurance contracts and use information technology for better management, customer service, efficiency and competitiveness.

Rudolf (2001), in his paper, examined the key factors and latest trends determining profitability in the major non-life insurance markets. The study focused on the non-life insurance markets of the group of seven countries (G7) mainly for the period 1996 to 2000. To analyze the profitability, investment results and underwriting results were compared between countries and across lines of business and to analyze the drivers of profitability, return on equity was decomposed into its main components namely underwriting results and investment income. The results indicated that only Germany and Japan did not have negative underwriting results and return on equity was high in UK, moderate in Canada and US, and low in France and Germany. The study found that underwriting result and investment yield are negatively correlated. The research suggested that due to uncertain prospects for investment results, the insurers must focus on underwriting results to achieve greater profitability.

Holzheu (2006), in his research paper, measured the underwriting profitability of insurance markets. The study used economic combined ratio as alternative key performance indicator instead of conventionally published combined ratio. It reflects underwriting profitability more accurately. The study focused on the underwriting profitability of six major non-life markets, the US, the UK, Germany, Japan, France and Canada from 1994 to 2004. The results indicated the picture for the business year results for Japan, Canada, France, Germany and the UK were broadly consistent with the US results. The results for the years 1994 to 1997 and 2002 to 2004 were profitable, though often only moderately. The period from 1998 to 2001 exhibited dismal underwriting results. Substantial improvements in underwriting results from 2001 to 2003 restored profitability to the level of the 1994 to 1997 period. The study further pointed out that the ten year average underwriting margins before taxes were positive in all countries implying a positive contribution to profits from the insurance activities. However, the contribution was only about 1-2per cent in the US and Japan, 2-3per cent in France, 5per cent in Canada and the UK, and 6per cent in Germany. The study found that these positive results were necessary but not a sufficient condition for creating shareholder value. Profits must also cover tax and the insurers' capital cost. During the period 1994 to 2004, it was difficult for the industry to earn its underwriting cost of capital.

Rao (2007), in his article, discussed how the industry performed since liberalization, why the mindset of insurance continued to be premium obsessed, as in the past, and why it was very necessary for them to switch their focus to measuring performance on a different basis for their survival in the market place, that is getting hotter and hotter at a competitive level. And why it was even more important to the public sector insurers to get their act together, as not doing so, might hurt them more as continued solvent insurers. The study revealed that non-life insurance industry performed superbly in terms of rising premium volumes, recording its highest growth rate ever of 23 %, with an accretion of Rs.4626 crores FY 2006-07. It was observed that measuring performance only by monthly premium has lowered the morale of staff. Even after the market was liberalized, this situation has not changed much.

Mahmoud (2008), identified the financial performance of insurance companies in Egypt. The data consisted of six insurance companies, three of which were from the public sector, while others represented private sector companies for the period 1992-93 to 2005-06. The author has used 25 ratios to measure the efficiency and financial performance. These ratios were reduced to six factors through factor analysis. The study found that the mean of efficiency of financial performance, ratios of the public and private sectors do not vary significantly for the following ratio returns on

investments, net profit to total assets, net profit to surplus, total liabilities to total assets, and underwriting expenses paid to premiums written. Public sector cases represent 66.7 per cent of the low-efficiency clusters of financial performance, while private sector cases comprise 47.6 per cent of high-efficiency clusters for financial performance. Thus, there is a relationship between the fuzzy classification of the insurance company's financial performance efficiency and its ownership type.

Oetzel and Ghosh (2008), in his paper, explored the relationships between market liberalization and insurance firms' performance in emerging markets and developing countries. The sample for this study includes a data of 196 insurance companies operating in 16 different countries across Latin America and Asia. The dependent variable used to measure firm level performance was adjusted firm's profits. The variable was measured as profits before taxes divided by total firm assets, because data on firm profitability was easily available. The independent variables are 'type of firm' and 'the degree of market liberalization'. The results of the analysis suggest that the host country liberalization is positively associated with firm profitability for all insurers, foreign and local, operating in a given host country. No significant profitability differences were found between foreign and locally owned firms, although U.S. owned subsidiaries were significantly less profitable than subsidiaries from any other country. Additionally, firms located in Latin America had significantly less profitability than those operating in India.

2.2. Research Gap

It is seen from the review of literature on the measurement of growth of various performance parameters indicating an insurer's financial performance that most of the researchers have simply compared the financial performance of the insurance companies in one particular year with that in some other year. This method of analyzing the performance of the insurers using two years data helps us to arrive at the findings that are heavily dependent on the choice of the base year (the year with which performance is compared) and the current year (in which the performance of the insurer is assessed). If the selection of the base year and the current year is made with due care so as to avoid bias in the final results, the findings may be acceptable, though with some reservations. The performance of the insurers can be properly assessed not by referring to just two years, but by considering all the relevant data for the intervening period and fitting trend lines to this data or by getting the averages of the values of our concern and drawing some inferences from them regarding the insurer's performance. Further, most of the articles were studied in the pre-liberal period, therefore the impact of liberalization on General insurance business were not studied. The articles were not compared on the government and private insurance business players' performances.

3. Objective of the Study

To reduce the abovementioned research gap, specifically, the growth rates of different performance parameters indicating financial performance of both the sectors will be ascertained in nominal and real terms. Further, the profitability of both the sectors and the industry as a whole will be analyzed with suitable ratios. The relationship between the dependent and independent variables affecting profitability will be framed with the help of multiple regression analysis. Largely, the objective of this study is to make a comprehensive analysis of the collective financial performance of the companies operating in the public sector and private sector general insurance (non-life) market in India during 2003-2013.

4. Hypothesis of the Study

To study the above objectives the following hypothesis are formulated:

1. The growth rates of different financial performance parameters of the private sector are higher than the public sector.

2. The profitability of the private sector is higher than the public sector.

5. Research Methodology

Keeping in view the objective of this study the methodology/techniques which will be used for collection and analysis of data in this study are as follows:

5.1. Collection of data

The data used in this study has been collected from secondary sources i.e. the published annual report of the insurers belonging to the public & private sector of the general insurance industry in India and from the publications including annual report of the Insurance Regulatory & Development Authority (IRDA) of India during 2003-04 to 2012-2013. To assess the effect of market liberalization on trend growth rates of different performance parameters and the profitability of both the sectors of the general insurance industry; the insurers operating in Indian market have been grouped in to two major sectors: 'public' and 'private'. Comparison among the financial-performance indicators of public sector, private sector and the industry as a whole has been made in a collective fashion.

5.2. Analysis of data

As the main objective of our study is to assess the financial performance of both the sectors of general insurance industry during 2003-2013 that belongs to the liberal period and to identify the factors responsible for the satisfactory or non satisfactory performance; one of our analytical methods will be to fit trend lines to the data in the performance variables and to infer about the trend growth rates of these variables. There are a large number of trend equations that may be fitted to the data to estimate the growth rates of different performance indicators. We have fitted two trend equations, namely exponential ($\log y_t = a + bt$) and log quadratic ($\log y_t = a + bt + ct^2$). The estimated value of trend parameter 'b' gives the growth rates as logarithms are considered at natural base. In case of semi-log linear equation growth rate is constant, but in case of log-quadratic trend equation, the estimated value of 'b' indicates average growth rates and estimated value of 'c' indicates acceleration or deceleration in growth rate. To make a choice between exponential and log- quadratic forms of trend equation, first, point-to-point growth rates $[(y_t - y_{t-1}) / y_{t-1}]$ have been estimated from the original series. Secondly, these point-to-point growth rates have been smoothed by moving average method of appropriate period (say three-period, five-period). On these smoothed series of point-to-point growth rates, finally, the linear trend equation has been fitted. If the trend parameter is statistically significant, log-quadratic trend is chosen for the estimation of the whole period's growth rate; otherwise, exponential equation is selected. In trend fitting we have also checked auto correlation problem, which are likely to occur in time series analysis, using DW statistic. When there is no autocorrelation problem ($DW > d_u$) or the auto-correlation test is inconclusive ($d_l < DW < d_u$), then estimated b is accepted. But in other cases we have effected necessary correlation in the model of trend fitting by considering auto-regressive scheme of either first order or second order.

Besides, for analyzing data the technique of ratio analysis, simple mathematical tools like percentages, averages etc. and statistical techniques like correlation analysis, multivariate regression analysis has been used. The 't' test & 'F' test has been applied at appropriate places. The IBM SPSS (Version 19) statistical software has been used for the purpose of data analysis.

6. Analysis of Financial Performance of General Insurance Business

The observations on the findings of the study are as follows:

6.1. Growth Analysis

In **Table II**, the estimated growth rate of number of new policies issued (in lakhs) by both the sectors and the industry as a whole have been presented. It has been observed that the growth rate in no. of new policies issued is much higher in the private sector than the public sector. Amazingly, the industry growth rate in terms of new policies issued is much closer to the public sector. This indicates the dominance of the public insurers over the private insurers in issuance of total new policies during 2003-2013. It can be seen that in every years under study, the total number of new policies issued (in lakhs) by the public sector are substantially greater than that of the private sector. Therefore, though the estimated growth rate of new policies issued by the private sector is much higher than that of the public sector; it has shown little dominance over the industry growth rate because of comparatively less number of total new policies issued by them.

In **Table III, IV & V**, an attempt has been made to estimate the nominal and real growth rate of different performance parameters indicating financial performance of all the general insurance companies belonging to the public sector, private sector and the industry as a whole.

The growth rate of direct premium collection, net premium retention and net premium earnings of the private sector both on nominal and real term is excessively higher than the growth rate of the public sector and as well as the general insurance industry as whole. A huge fluctuation in nominal and real growth rate of the abovementioned three parameters has been identified in the public sector. The estimated nominal and real growth rates of net premium earnings of the public sector is 11.80 % and 3.60 % respectively as against 64.0 % and 61.80 % of the private sector and 11.10 % & 8.40 % of the industry. This signifies that the private sector is emerging as serious competitor not only in quality of product and services but also in relative market size. They are steadily building their customer base by grabbing the enlarged, unattended and untapped potential insurance market in India and overtime, they are expected to acquire even a larger share of the market.

Private sector enterprises are generally run by experienced Indian managers and strongly supported foreign enterprise. It has been estimated that the growth rate in expense of management in case of private sector is much higher than public sector and overall industry rate. This denotes that the private enterprises are expending more to retain their efficient managers and to obtain the highest calibre staffs from the public sector.

The growth rate (both in nominal and real term) of total operating expenses is relatively higher in the private sector than that of the public sector. This implies that private sector enterprises have resorted to aggressive growth strategies by building a large agency force and distribution network that leads to huge amount of expenditure in commission expenses and managerial expenditure.

The annual growth rate (in nominal terms) of 'income from interest, dividend & rent' in the public sector is higher than the growth rate of 'profit or loss on sale of investments'. But an opposite picture is observed in the private sector where the growth rate (both in nominal and real terms) in 'profit or loss on sale of investments' is relatively higher than 'income from interest, dividend & rent'. But the magnitude of both the parameters is substantially high in the private sector. However, statistically insignificant growth rate of these two parameters is observed in the public sector when they are transformed in real magnitude. The comparatively high growth rates in income from investments focuses on the efficiency of the fund managers of the private enterprises in disseminating their investments in profitable arena.

The annual growth rate (both in nominal and real terms) of total expenditure is higher than total income in both the sectors. It is mentionable that the difference of growth rates in between total income and total expenditure is highest in the private sector than the public sector and the industry as a whole.

6.2. Component wise Income & Expenditure Analysis

In **Table VI**, various component of income and expenditure of both the sectors of general insurance industry have been presented year wise as a percent of total income and total expenditure.

It has been ascertained that net premium contributes the major part of total income of the companies belonging to both the sector. However, the contribution of net premium to total income is higher in the private sector in every year under study. On the contrary, the percentage of income from interest, dividend & rent on investments and profit or loss arising on sale of investments is relatively higher in the public sector. The proportion of profit or loss on sale of investments to total income is far below than the industry average in every years commencing from 2003-2013. However, other income forms an insignificant part of total income in both the sectors.

From an in-depth study of component wise total expenditure reveals that the net incurred claims to total expenditure of both the public and private sector during the years under study is very close to the industry average. The mean of net incurred claims to total expenditure during the study period is 69.91 % for the public sector and 67.97 % for the private sector. On the contrary, the mean of net premium to total income of the private sector (89.10 %) is much higher than that of the public sector (73.13 %) indicating the efficiency of the private sector enterprises in underwriting risks and management of insurance claims. The percentage of net commission to total expenditure in the public sector is much higher than the industry average in every years under study whereas a negative value of net commission expenses in private sector reveals a comprehensive, aggressive and efficient reinsurance programme adopted by them.

The larger share of expenses of management in total expenditure of the private sector in relation to public affirms the high estimated annual growth rate of this parameter (both in nominal and real terms) as depicted in **Table IV**. The relative expenditure on account of expenses of management of the private sector is too higher than the industry average of 26.88 %. Similar to other income, other expenses forms an insignificant part of total expenditure in both sectors of general insurance industry.

6.3. Ratio Analysis

In **Table VII**, a comparative statement of different financial ratios of both the sectors and the general insurance industry has been presented.

6.3.1. Expense ratio (ER)

Expenses of a general insurance company largely comprises of commission expense and expenses of management. Commission expense is derived after considering commission payable and receivable on reinsurance business accepted or ceded respectively. Expenses of Management are generally operating expenses which include employees' remuneration and benefits, office and administrative expenses, etc. Expense ratio is calculated as a percentage of net premium which reflects the percentage of revenue which is being utilized on account of commission and management expenses. This ratio is a pointer of the cost effectiveness and productivity. A higher ratio reflects financial instability of the business as a decrease in revenue may result in losses, whereas lower ratio is an indicator of better operational performance. It becomes important to examine, how far the two sector general insurance industry have been in a position to reduce their operating cost during the study period.

The study shows that the expense ratio of the public sector decreased from 38.45 % in 2003-04 to 30.82 % in 2012-13. This implies a reduction of excessive and unwanted administrative expenses by the public companies and also a reduction in expenses on account of commission by shifting their focus from mere selling of insurance products to risk underwriting.

6.3.2. Claims Ratio (CR)

Claim ratio is expressed as a percentage of total net incurred claims to net premium underwritten. A lower claim ratio signifies the efficiency of the risk underwriting team and also a better claims management mechanism.

It is evident from every year under study that the CR of the private sector was far less than the CR of the public sector. This signifies that a comparatively better claims management mechanism is prevailing in the private sector and obviously better views adopted in underwriting of risk.

6.3.3. Combined Ratio

This ratio reflects the combined effect of net commission expenses, expenses of management and claim incurred. It is the most acceptable measure of underwriting profitability. Financial analysts rely on it for comparing the profitability of insurance business of different companies and for comparing different lines of business.

As the expense ratio and claims ratio of the private sector is lower than the public sector therefore the combined ratio of the private sector appears to be lower than the public sector and industry average. The combined ratio of the public sector ranges from 110.88 % in 2011-12 to 129.94 % in 2005-06 whereas in the private sector it ranges from 78.48 % in 2004-05 to 109.76 % in 2010-11.

6.3.4. Underwriting Results Ratio (URR)

Underwriting results indicate the performance of an insurance company from core insurance business. To ascertain the underwriting performance, first net underwritten premium is adjusted with the increase/decrease in unexpired risk reserve to arrive at net premium (earned). Thereafter, underwriting profit/loss of a general insurer is ascertained after deducting the commission expenses, claims incurred and management expenses from net premium (earned). The underwriting results ratio is calculated by dividing underwriting results by net underwritten premium.

It can be seen that in every years under study both the sectors of the general insurance industry resulted in losses from the core insurance business *i.e.* underwriting of risk. It is only in year 2004-05 where the private sector collectively able to record profit from underwriting activities. However, during the period under study, the ratio is much more adverse in the public sector that indicates the comparative inefficiency of the public insurers in risk management and claims settlement.

6.3.5. Investment Income Ratio (IRR)

Income from investments creates a significant impact on profitability of an insurance company. Insurers collect huge amount of money as premium and invest it efficiently to maximize its return. The investment income ratio is determined by investment income to net written premium. This ratio indicates the effectiveness and efficiency of investment decisions.

The IRR of the public companies remain higher in every years commencing from 2003-04 to 2012-13. This signifies that the comparative return on investment in relation to net premium collection is higher in public sector than private. It also indicates to the huge amount of return on investments which is evolving out from a substantially large volume of investment portfolio maintained by the public companies over years.

6.3.6. Total Expense to Total Income Ratio

This ratio indicates the efficiency of an enterprise in reduction of expenditure in relation to income. A high ratio indicates an adverse position while a low ratio points to less outflow of fund in relation to inflow.

It is seen that in year 2003-04, the difference in 'total expense to total income' ratio between the public and the private sector was highest while it was lowest in 2008-09. The private sector

registered the highest 'total expense to total income' ratio in year 2010-11 (97.28 %) as against 92.69 % of the public sector. This implies that to generate an income level of Rs. 100/- ; the public and private sector expended Rs. 92.69/- and Rs. 97.28/- respectively.

6.3.7. Operating Ratio

The operating ratio has been calculated by dividing the profit before tax to net premium underwritten. The operation of an insurer encompasses both the underwriting and investing activities. The fund of an insurer comprises of net premium collected from underwriting activities & income generated from investments. This fund is disseminated to meet operating expenses including claims and a major part is invested in various areas of investment. The net result is reflected on profit before tax. This ratio is an acceptable measure of profitability of the insurance business. In every year under study, the operating ratio was higher in the public sector, indicating a better operational performance. On the contrary, the private sector constantly suffered from operating losses from 2008-09 to 2011-12. The public sector registered the maximum operating ratio in the year 2006-07 (24.74 %) where it was in year 2004-05 where the operating ratio of the private sector was the highest (10.11 %).

6.3.8. Net Earning Ratio

The Net Earning Ratio has been calculated by dividing net profit after tax to net premium underwritten. This ratio is also an acceptable measure of profitability of the insurance business. This ratio discloses the net result of the underwriting and investment activities.

As the provision for taxation is adjusted with operating profit before tax to arrive at net profit after tax; therefore the net earning ratio of both the sectors in every year under study is less than operating ratio. The average of the net earning ratios during the period under study was 9.52 % and 1.18 % in case of public sector and private sector respectively.

6.3.9. Net Retention Ratio

Net retention ratio signifies an insurer's ability to bear risk. It is expressed as a percentage of business retained (net of reinsurance ceded) in relation to gross direct premium. As per the latest IRDA guidelines issued in April 2007 every insurer has to compulsorily cede a minimum of 15% (earlier it was 20%) of their business to the national reinsurer, GIC. In general, the companies having a stronger capital base and huge amount of reserve & surpluses are able to retain more of their portfolios, whereas the companies, with relatively lower capitalization (and hence lower capacity to retain risks) have resorted to higher utilization of reinsurance.

The retention ratio of the public sector was higher than the private sector in every year under study. This implies better capability of the public insurer to bear risk. In 2011-12, both the sectors registered the highest retention ratio (85.98 % for public sector and 74.89 % for private sector). The maximum difference in retention ratios of both the sectors was in 2003-04.

6.3.10. Return on Equity (ROE)

Return on Equity is the most popular measure of profitability of a business concern irrespective of its nature of business. It measures the return available for accruing to owners' capital. It is calculated by dividing net profit after tax to Net Worth.

The average ROE of the public and private sector during 2003-2013 were 11.51 % and 1.63 % respectively that indicates to a considerable return in the public sector. In year 2006-07, public companies collectively registered the maximum ROE of 23.75 % whereas the private enterprises recorded in 2004-05 an ROE of 10.09 % which is maximum during 2003-2013. The difference in ROEs of both the sector was maximum in 2007-08 followed by 2006-07. The ROE of the industry was highest in 2006-07 (21.41 %) and lowest in 2010-11 (-4.43 %).

7. Regression Analysis

In **Table VIII & IX**, an attempt has been made to examine the combined impact of some selected factors on the profitability of the public and private sectors of general insurance industry respectively. In **Table X**, the impact of those factors on the profitability of the general insurance industry has been shown. Accordingly, multiple correlation and multiple regression techniques have been applied to study the joint influence of the selected ratios, namely Claim Ratio (CR), Expense Ratio (ER) & Investment Income Ratio (IR) on Return on Equity (ROE) and the regression coefficients have been tested with 't' test. For this purpose, CR, ER & IR have been considered as the independent variables and ROE has been used as the dependent variable. The regression model used in this analysis is $ROE = a + b_1 CR + b_2 ER + b_3 IR$ where a, b_1 , b_2 , b_3 are the parameters of the ROE line. The results provide the following regression equations:

$$ROE = 118.780 - 1.460 CR - 0.660 ER + 1.035 IR \quad \dots \text{(Public Sector)}$$

$$ROE = 46.020 - 0.616 CR - 0.312 ER + 0.348 IR \quad \dots \text{(Private Sector)}$$

$$ROE = 114.459 - 1.593 CR - 0.171 ER + 0.861 IR \quad \dots \text{(Industry)}$$

It is observed that when CR is increased by one unit; the ROE decreased by 1.460 units and 0.616 unit for the public sector and private sector respectively. Both the regression coefficients are statistically significant. However, the decrease in units of ROE is not statistically significant when the ER is increased by one unit. This indicates the variability in expense ratios of both the sectors since the strategies adopted by the insurers' in incurring expenditure and management of claims differ from one another. Again, an increase in IR by one unit favourably enhances the ROE of the public sector by 1.035 units which is statistically significant whereas the regression coefficient of IR (0.348) in private sector is insignificant. The ROE of the industry is increased by 0.861 unit when IR of the industry is increased by one unit. The multiple correlation coefficient between the dependent variable ROE and the independent variable CR, ER & IR is 0.974, 0.932 & 0.883 for the general insurance industry, public sector and the private sector respectively. It indicates that the profitability was highly influenced by CR, ER & IR in the public sector than the private. Again, from the value of R^2 it is also evident that 87 % of the variation in ROE was accounted by the joint variation in CR, ER & IR of the public sector whereas in the private sector it is only 78 %.

8. Summary of Findings & Conclusion

It has been established from this study that the estimated growth rate (both nominal & real) of different performance parameters of the private sector are much higher than the public sector. However, the growth rates of the public insurers are much closer to the industry rates which are also much lesser than the private sector. This indicates the dominance of the public insurers over the performance indicators of that of the private insurers in absolute value. It can be seen that in every years during 2003-2013, the total of the gross direct premium collected by the four public insurers are substantially greater than that of the private sector. Therefore, though the estimated growth rate of gross direct premium of the private sector is much higher than that of the public sector; it has shown little dominance over the industry growth rate because the absolute value of gross direct premium contributed by the public insurers to the industry continued to be the largest during the period under study. Again, the percentage of net premium on total income of the private sector is substantially higher than the public sector. However, there is little difference between the averages of 'net incurred claims to total expenditure' in both the sectors. Again, both the expense ratios and claim ratios of the private sector are comparatively lower than the public sector. This favourable situation is largely due to the low risk retention ratios maintained by the private sector over the years where the policies with high risk rating are ceased with reinsurers. On the contrary, in spite of

their unfavourable expense ratios & claim ratios; the public sector maintained comparatively higher return on equity in every year under study due to their higher return from investments.

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TABLE I

Comparative statement of growth and market share occupied by public and private sector general insurance companies in terms of New Policies issued (in lakhs) and Gross Direct Premium collected during 2003-04 to 2012-13

YEAR	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	MEAN
PUBLIC SECTOR											
NO. OF COMPANIES OPERATIVE	4	4	4	4	4	4	4	4	4	4	
NEW POLICIES ISSUED (IN LAKHS)	384.27	446.34	421.93	339.27	385.47	451.37	434.04	505.76	528.14	689.68	458.63
INCREASE/ (DECREASE) IN %		16.15	-5.47	-19.59	13.62	17.1	-3.84	16.52	4.43	30.59	7.72
MARKET SHARE (%) IN TERMS OF NEW POLICIES ISSUED	92.09	89.66	82.5	72.78	67.33	67.31	64.31	63.74	61.59	64.44	72.58
GROSS DIRECT PREMIUM (RS. IN CRORES)	14284.65	14948.82	15976.44	17283.45	17813.71	19107.31	21838.85	26417.21	32263.46	37071.8	21700.57
INCREASE (RS. IN CRORES)		664.17	1027.62	1307.01	530.26	1293.6	2731.54	4578.36	5846.25	4808.34	2278.72
GROWTH (%)		4.65	6.87	8.18	3.07	7.26	14.3	20.96	22.13	14.9	10.23
MARKET SHARE (%) IN TERMS OF GROSS DIRECT PREMIUM	86.35	81	74.87	66.65	61.84	60.8	60.98	60.26	59.11	57.01	66.89
PRIVATE SECTOR											
NO. OF COMPANIES OPERATIVE	8	8	8	8	8	10	12	13	15	17	
NEW POLICIES ISSUED (IN LAKHS)	32.99	51.45	89.48	126.92	187.03	219.23	240.84	287.652	329.3	380.56	194.55
INCREASE/ (DECREASE) IN %		55.96	73.92	41.84	47.36	17.21	9.86	19.44	14.48	15.57	32.85
MARKET SHARE (%) IN TERMS OF NEW POLICIES ISSUED	7.91	10.34	17.5	27.22	32.67	32.69	35.69	36.26	38.41	35.56	27.43
GROSS DIRECT PREMIUM (RS. IN CRORES)	2257.83	3507.62	5362.66	8646.57	10991.89	12321.09	13977	17424.63	22315.03	27950.7	12475.5
INCREASE (RS. IN CRORES)		1249.79	1855.04	3283.91	2345.32	1329.2	1655.91	3447.63	4890.4	5635.67	2854.76
GROWTH (%)		55.35	52.89	61.24	27.12	12.09	13.44	24.67	28.07	25.26	33.35
MARKET SHARE (%) IN TERMS OF GROSS DIRECT PREMIUM	13.65	19	25.13	33.35	38.16	39.2	39.02	39.74	40.89	42.99	33.11
INDUSTRY TOTAL											
NO. OF COMPANIES OPERATIVE	12	12	12	12	12	14	16	17			
NEW POLICIES ISSUED (IN LAKHS)	417.26	497.79	511.41	466.19	572.5	670.6	674.88	793.412	857.44	1070.24	653.17
INCREASE/ (DECREASE) IN %		19.3	2.74	-8.84	22.8	17.14	0.64	17.56	8.07	24.82	11.58
NEW POLICIES ISSUED-MARKET TOTAL (%)	100	100	100	100	100	100	100	100	100	100	100
GROSS DIRECT PREMIUM	16542.48	18456.44	21339.1	25930.02	28805.6	31428.4	35815.85	43841.84	54578.49	65022.5	34176.07

(RS. IN CRORES)											
INCREASE (RS. IN CRORES)		1913.96	2882.66	4590.92	2875.58	2622.8	4387.45	8025.99	10736.65	10444.01	5386.67
GROWTH (%)		11.57	15.62	21.51	11.09	9.11	13.96	22.41	24.49	19.14	16.54
GROSS DIRECT PREMIUM-MARKET TOTAL (%)	100	100	100	100	100	100	100	100	100	100	100

Source: Compiled from the published annual reports of IRDA from 2003- to 2013.

TABLE II

Comparative statement showing estimated growth rate of Number of New Policies Issued (in lakhs) by all companies operating in the general insurance sector in India during the period from 2003-2013

SL.	SECTOR	Adj R ² (S.E)	DW	Growth Rate in % (S.E)	Acceleration in % (S.E)	Deceleration in % (S.E)
1	PUBLIC	0.526 ^{**} (0.13684)	1.177	5.0 ^{**} (0.015)	-	-
2	PRIVATE	0.991 [*] (0.07983)	1.354	57.4 [*] (0.039)	-	2.8 [*] (0.003)
3	INDUSTRY	0.924 [*] (0.08250)	1.675	9.5 [*] (0.009)	-	-

Asterisk (*) mark/figures in superscript position denotes level of significance. Significance up to 1% level is denoted by *, above 1% up to 5% is denoted by **. Figures within parentheses are standard errors. All the values of DW statistic indicate the absence of autocorrelation problem in the disturbance term.

TABLE III

Comparative statement showing estimated Nominal & Real growth rates of different parameters indicating collective financial performance of All Public companies during the period from 2003-2013

SL.	PARAMETER	NOMINAL GROWTH RATE					REAL GROWTH RATE				
		Adj R ² (S.E)	DW	Growth Rate in % (S.E)	Acceleration in % (S.E)	Deceleration in % (S.E)	Adj R ² (S.E)	DW	Growth Rate in % (S.E)	Acceleration in % (S.E)	Deceleration in % (S.E)
1	GROSS DIRECT PREMIUM	0.920 [*] (0.09264)	0.449	10.5 [*] (0.010)	-	-	0.557 [*] (0.05714)	0.750	2.2 [*] (0.006)	-	-
2	NET PREMIUM	0.953 [*] (0.08418)	0.485	12.5 [*] (0.009)	-	-	0.875 [*] (0.04874)	1.132	4.3 [*] (0.005)	-	-
3	NET PREMIUM EARNED	0.947 [*] (0.08414)	0.420	11.8 [*] (0.009)	-	-	0.842 [*] (0.04612)	0.754	3.6 [*] (0.005)	-	-
4	NET INCURRED CLAIMS	0.969 [*] (0.06706)	1.119	12.4 [*] (0.007)	-	-	0.868 [*] (0.04908)	1.579	4.2 [*] (0.005)	-	-
5	NET COMMISSION	0.971 [*] (0.09967)	1.543	35.8 [*] (0.066)	-	1.1 ^{**} (0.004)	0.908 [*] (0.10818)	1.496	29.0 [*] (0.053)	-	1.7 [*] (0.005)
6	EXPENSES OF MANAGEMENT	0.812 [*] (0.12895)	0.840	9.0 [*] (0.014)	-	-	0.211 ^{18.1} (0.08101)	1.724	-6.8 ^{13.2} (0.040)	0.7 ^{***} (0.004)	-
7	TOTAL OPERATING EXPENSES	0.904 [*] (0.10253)	0.871	10.4 [*] (0.011)	-	-	0.410 ^{**} (0.07332)	1.442	2.2 ^{**} (0.008)	-	-
8	INCOME FROM INTEREST, DIVIDEND & RENT	0.903 [*] (0.07868)	0.757	8.0 [*] (0.009)	-	-	-0.068 ^{52.3} (0.05419)	1.458	-3.1 ^{27.7} (0.027)	0.3 ^{30.4} (0.002)	-
9	PROFIT OR LOSS ON SALE OF INVESTMENTS	0.342 ^{**} (0.28191)	1.961	7.4 ^{**} (0.031)	-	-	0.005 ^{40.8} (0.28124)	1.810	18.0 ^{23.3} (0.138)	-	1.7 ^{20.4} (0.012)
10	TOTAL INCOME FROM INVESTMENTS	0.776 [*] (0.12320)	1.967	7.7 [*] (0.014)	-	-	-0.056 ^{50.2} (0.13068)	1.878	6.8 ^{32.6} (0.064)	-	1.7 ²⁸ (0.006)
11	TOTAL INCOME	0.961 [*] (0.06908)	0.624	11.3 [*] (0.008)	-	-	0.797 [*] (0.04606)	1.250	3.1 [*] (0.005)	-	-
12	TOTAL EXPENDITURE	0.958 [*] (0.07491)	0.962	11.9 [*] (0.008)	-	-	0.816 [*] (0.05164)	1.862	3.6 [*] (0.006)	-	-

Asterisk (*) mark/figures in superscript position denotes level of significance. Significance up to 1% level is denoted by *, above 1% up to 5% is denoted by **, above 5% up to 10% is denoted by ***. Figures within parentheses are standard errors. All the values of DW statistic indicate the absence of autocorrelation problem in the disturbance term.

TABLE IV
Comparative statement showing estimated Nominal & Real growth rates of different parameters indicating collective financial performance of All Private companies during the period from 2003-2013

SL.	PARAMETER	NOMINAL GROWTH RATE					REAL GROWTH RATE				
		Adj R ² (S.E)	DW	Growth Rate in % (S.E)	Acceleration in % (S.E)	Deceleration in % (S.E)	Adj R ² (S.E)	DW	Growth Rate in % (S.E)	Acceleration in % (S.E)	Deceleration in % (S.E)
1	GROSS DIRECT PREMIUM	0.981 [*] (0.11108)	0.951	46.8 [*] (0.055)	-	1.9 [*] (0.005)	0.959 [*] (0.11765)	0.925	44.6 [*] (0.058)	-	2.4 [*] (0.005)
2	NET PREMIUM	0.981 [*] (0.09248)	1.079	57.3 [*] (0.045)	-	2.3 [*] (0.004)	0.982 [*] (0.10059)	1.095	55.1 [*] (0.049)	-	2.9 [*] (0.004)
3	NET PREMIUM EARNED	0.995 [*] (0.07279)	1.247	64.0 [*] (0.036)	-	2.7 [*] (0.003)	0.990 [*] (0.08035)	1.246	61.8 [*] (0.039)	-	3.3 [*] (0.003)
4	NET INCURRED CLAIMS	0.998 [*] (0.05235)	1.923	66.6 [*] (0.026)	-	2.7 [*] (0.002)	0.995 [*] (0.06151)	1.98	64.4 [*] (0.030)	-	3.2 [*] (0.003)
5	NET COMMISSION	0.845 ^{**} (0.4863)	1.648	40.56 ^{**} (0.046)	-	1.4 [*] (0.005)	0.803 ^{**} (0.5436)	1.713	36.4 ^{**} (0.053)	-	1.9 ^{**} (0.007)
6	EXPENSES OF MANAGEMENT	0.987 [*] (0.09243)	1.454	51.2 [*] (0.045)	-	2.3 [*] (0.004)	0.972 [*] (0.09885)	1.429	49.0 [*] (0.049)	-	2.8 [*] (0.004)
7	TOTAL OPERATING EXPENSES	0.992 [*] (0.09233)	1.495	66.2 [*] (0.045)	-	3.1 [*] (0.004)	0.984 [*] (0.09893)	1.510	64.0 [*] (0.049)	-	3.6 [*] (0.004)
8	INCOME FROM INTEREST, DIVIDEND & RENT	0.989 [*] (0.11913)	1.362	47.7 [*] (0.059)	-	1.0 ^{***} (0.005)	0.981 [*] (0.12210)	1.364	45.5 [*] (0.060)	-	1.5 ^{**} (0.005)
9	PROFIT OR LOSS ON SALE OF INVESTMENTS	0.716 [*] (0.37029)	1.539	63.6 [*] (0.182)	-	4.2 ^{**} (0.016)	0.573 ^{**} (0.36361)	1.544	61.4 ^{**} (0.179)	-	4.8 ^{**} (0.016)
10	TOTAL INCOME FROM INVESTMENTS	0.982 [*] (0.13861)	1.373	47.0 [*] (0.068)	-	1.2 ^{***} (0.006)	0.970 [*] (0.13873)	1.388	44.8 [*] (0.068)	-	1.7 ^{**} (0.006)

11	TOTAL INCOME	0.993 [*] (0.08535)	1.138	56.3 [*] (0.042)	-	2.2 [*] (0.004)	0.985 [*] (0.09315)	1.152	54.1 [*] (0.046)	-	2.8 [*] (0.004)
12	TOTAL EXPENDITURE	0.997 [*] (0.06429)	1.716	65.8 [*] (0.032)	-	2.8 [*] (0.003)	0.993 [*] (0.07272)	1.795	63.6 [*] (0.036)	-	3.3 [*] (0.003)

Asterisk (*) mark/figures in superscript position denotes level of significance. Significance up to 1% level is denoted by *, above 1% up to 5% is denoted by **, above 5% up to 10% is denoted by ***. Figures within parentheses are standard errors. All the values of DW statistic indicate the absence of autocorrelation problem in the disturbance term.

TABLE V

Comparative statement showing estimated Nominal & Real growth rates of different parameters indicating collective financial performance of All companies operating in the general insurance sector in India during the period from 2003-2013

SL.	PARAMETER	NOMINAL GROWTH RATE				REAL GROWTH RATE					
		Adj R ² (S.E)	DW	Growth Rate in % (S.E)	Acceleration in % (S.E)	Deceleration in % (S.E)	Adj R ² (S.E)	DW	Growth Rate in % (S.E)	Acceleration in % (S.E)	Deceleration in % (S.E)
1	GROSS DIRECT PREMIUM	0.992 [*] (0.04029)	1.198	10.1 [*] (0.020)	0.4 ^{**} (0.002)	-	0.949 [*] (0.04622)	1.207	6.6 [*] (0.005)	-	-
2	NET PREMIUM	0.998 [*] (0.02490)	1.858	12.1 [*] (0.012)	0.5 [*] (0.001)	-	0.984 [*] (0.03385)	1.918	8.9 [*] (0.004)	-	-
3	NET PREMIUM EARNED	0.999 [*] (0.01762)	1.789	11.1 [*] (0.009)	0.5 [*] (0.001)	-	0.989 [*] (0.02627)	1.952	8.4 [*] (0.003)	-	-
4	NET INCURRED CLAIMS	0.994 [*] (0.04176)	1.381	13.8 [*] (0.021)	0.3 ^{12.5} (0.002)	-	0.970 [*] (0.04841)	1.465	9.1 [*] (0.005)	-	-
5	NET COMMISSION	0.888 [*] (0.32648)	1.971	30.6 [*] (0.036)	-	-	0.782 [*] (0.35244)	1.891	22.4 [*] (0.039)	-	-
6	EXPENSES OF MANAGEMENT	0.981 [*] (0.05657)	1.508	13.5 [*] (0.006)	-	-	0.942 [*] (0.03972)	1.424	5.3 [*] (0.004)	-	-
7	TOTAL OPERATING EXPENSES	0.984 [*] (0.05683)	1.501	14.9 [*] (0.006)	-	-	0.939 [*] (0.05110)	1.913	6.7 [*] (0.006)	-	-
8	INCOME FROM INTEREST, DIVIDEND & RENT	0.946 [*] (0.08969)	0.762	12.5 [*] (0.010)	-	-	0.815 [*] (0.05993)	1.184	4.2 [*] (0.007)	-	-

9	PROFIT OR LOSS ON SALE OF INVESTMENTS	0.402 ^{**} (0.26679)	1.982	7.8 ^{**} (0.029)	-	-	0.099 ^{28.8} (0.25610)	1.697	20.6 ^{14.5} (0.126)	-	1.9 ^{12.9} (0.011)
10	TOTAL INCOME FROM INVESTMENTS	0.911 [*] (0.09991)	1.941	10.6 [*] (0.011)	-	-	0.243 ^{***} (0.10899)	1.697	2.4 ^{**} (0.012)	-	-
11	TOTAL INCOME	0.996 [*] (0.02908)	1.533	11.7 [*] (0.014)	0.4 ^{**} (0.001)	-	0.972 [*] (0.03793)	1.442	7.4 [*] (0.004)	-	-
12	TOTAL EXPENDITURE	0.993 [*] (0.04265)	1.546	12.9 [*] (0.021)	0.3 ^{11.3} (0.002)	-	0.966 [*] (0.04720)	1.478	8.4 [*] (0.005)	-	-

Asterisk (*) mark/figures in superscript position denotes level of significance. Significance up to 1% level is denoted by *, above 1% up to 5% is denoted by **, above 5% up to 10% is denoted by ***. Figures within parentheses are standard errors. All the values of DW statistic indicate the absence of autocorrelation problem in the disturbance term.

Table VI

Comparative statement showing various components of Income & Expenditure as a percent of Total Income and Total Expenditure of Public and Private sector general insurance companies during 2003-2013

Year	Percentage of various components comprising Total Income											
	Net Premium			Interest, Dividend & Rent			P/L on Sale of Investments			Other Income		
	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry
2003-04	72.88	87.19	74.02	16.46	8.70	15.84	10.48	3.92	9.96	0.18	0.19	0.18
2004-05	71.79	90.52	73.90	16.47	7.30	15.44	11.49	2.07	10.43	0.25	0.11	0.23
2005-06	67.44	90.95	71.01	14.37	6.38	13.16	17.83	2.24	15.46	0.36	0.43	0.37
2006-07	69.11	91.80	73.94	14.98	6.72	13.22	15.73	1.44	12.69	0.18	0.04	0.15
2007-08	68.81	90.33	74.89	14.64	7.50	12.62	16.27	1.86	12.20	0.28	0.31	0.29
2008-09	76.45	88.40	80.23	14.78	8.97	12.94	8.29	2.37	6.42	0.48	0.26	0.41
2009-10	73.84	87.46	78.15	12.92	8.92	11.65	12.93	2.81	9.73	0.31	0.81	0.47
2010-11	73.95	88.52	78.62	12.07	9.29	11.17	13.92	1.51	9.94	0.06	0.68	0.27
2011-12	78.87	88.72	82.31	12.46	9.84	11.55	8.36	0.63	5.67	0.31	0.81	0.47
2012-13	78.19	87.15	81.55	12.87	11.91	12.51	8.66	0.64	5.66	0.28	0.30	0.28
Mean	73.13	89.10	76.86	14.20	8.55	13.01	12.40	1.95	9.82	0.27	0.39	0.31

Year	Percentage of various components comprising Total Expenditure											
	Net Incurred Claims			Net Commission			Expenses of Management			Other Expenses		
	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry
2003-04	67.22	63.80	67.00	2.63	-24.83	0.85	29.71	59.61	31.65	0.44	1.42	0.50
2004-05	68.10	64.98	67.80	3.86	-14.93	2.07	27.32	49.63	29.44	0.72	0.32	0.69
2005-06	68.60	66.20	68.29	4.44	-12.11	2.26	26.07	45.35	28.61	0.89	0.56	0.84
2006-07	70.42	66.00	69.53	4.49	-10.99	1.36	24.10	44.84	28.29	0.99	0.15	0.82
2007-08	71.88	65.47	70.10	5.52	-3.85	2.92	21.66	38.26	26.27	0.94	0.12	0.71
2008-09	70.69	67.28	69.60	6.11	-1.00	3.85	22.53	33.47	26.02	0.67	0.25	0.53
2009-10	69.16	69.89	69.40	5.85	0.09	3.98	24.32	29.94	26.15	0.67	0.08	0.48
2010-11	70.09	71.63	70.60	5.23	-0.13	3.45	23.92	28.37	25.39	0.78	0.13	0.56
2011-12	71.26	72.62	71.75	6.21	0.50	4.16	21.02	26.23	22.89	1.51	0.65	1.20
2012-13	71.65	71.85	71.72	5.28	0.34	3.47	22.27	27.22	24.09	0.80	0.59	0.72
Mean	69.91	67.97	69.58	4.96	-6.69	2.84	24.29	38.29	26.88	0.84	0.43	0.71

Source: Compiled from IRDA publications and annual reports of general insurance companies operating in India.

Table VII

Statement showing different ratios indicating collective financial performance of general insurance companies operating in the Public and Private sector during 2003-2013

Year	Expense Ratio			Claims Ratio			Combined Ratio			Underwriting results Ratio			Investment Income Ratio		
	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry
2003-04	38.45	27.78	37.45	79.91	50.97	77.2	118.36	78.75	114.65	-21.48	-5.98	-20.03	36.97	14.48	34.86
2004-05	37.37	27.32	35.98	81.63	51.16	77.42	118.99	78.48	113.40	-23.20	0.14	-19.98	38.95	10.35	35.00
2005-06	40.00	27.35	37.54	89.94	54.47	83.03	129.94	81.82	120.57	-32.65	-1.75	-26.63	47.74	9.48	40.29
2006-07	32.87	27.46	31.44	80.97	53.56	73.73	113.84	81.02	105.17	-18.83	-2.28	-14.46	44.44	8.88	35.04
2007-08	33.07	31.18	32.42	87.47	59.32	77.88	120.54	90.49	110.31	-23.81	-8.37	-18.55	44.92	10.37	33.15
2008-09	34.76	34.39	34.63	85.78	71.25	80.71	120.54	105.64	115.34	-26.59	-12.89	-21.81	30.18	12.82	24.13
2009-10	36.01	31.57	34.44	82.54	73.47	79.33	118.55	105.04	113.76	-25.04	-13.67	-21.01	35.00	13.42	27.36
2010-11	36.53	31.03	34.54	87.85	78.73	84.55	124.38	109.76	119.10	-33.84	-18.97	-28.46	35.14	12.20	26.85

2011-12	30.66	28.10	29.70	80.22	76.37	78.77	110.88	104.47	108.47	-21.01	-17.94	-19.86	26.40	11.81	20.92
2012-13	30.82	26.79	29.21	80.16	69.87	76.04	110.98	96.67	105.26	-16.45	-8.84	-13.40	27.53	14.40	22.28
Mean	35.05	29.30	33.74	83.65	63.92	78.87	118.70	93.21	112.60	-24.29	-9.06	-20.42	36.73	11.82	29.99
Year	Total Expense to Total Income Ratio			Operating Ratio			Net Earning Ratio			Retention Ratio			Return on Equity		
	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry	Public	Private	Industry
2003-04	86.64	69.65	85.29	15.19	8.03	14.52	13.15	6.29	12.51	72.30	47.21	68.88	17.04	5.99	15.68
2004-05	86.05	71.27	84.38	15.55	10.11	14.80	10.54	6.84	10.03	74.37	50.80	69.89	13.05	10.09	12.69
2005-06	88.41	74.83	86.35	13.47	7.77	12.36	11.23	5.43	10.10	73.56	53.00	68.39	13.30	9.22	12.71
2006-07	79.46	74.49	78.41	24.74	6.77	19.99	22.34	4.88	17.72	75.31	54.05	68.22	23.75	9.47	21.41
2007-08	83.73	81.85	83.20	20.16	2.18	14.03	15.91	0.62	10.70	77.81	65.13	72.97	15.98	1.21	12.87
2008-09	92.75	93.62	93.03	3.64	-0.58	2.17	3.13	-1.19	1.63	83.21	69.08	77.67	3.48	-1.96	2.04
2009-10	88.13	91.94	89.34	8.49	-0.27	5.38	7.13	-0.89	4.29	83.03	71.16	78.40	8.57	-1.36	5.58
2010-11	92.69	97.28	94.16	-0.11	-6.81	-2.53	-0.72	-6.79	-2.92	84.45	72.44	79.68	-1.08	-10.75	-4.43
2011-12	88.78	93.30	90.36	4.77	-6.22	0.64	4.13	-6.70	0.06	85.98	74.89	81.44	6.96	-11.12	0.09
2012-13	87.47	84.75	86.46	10.50	4.78	8.21	8.32	3.26	6.30	84.34	74.57	80.14	14.01	5.52	10.63
Mean	87.41	83.30	87.10	11.64	2.58	8.96	9.52	1.18	7.04	79.44	63.23	74.57	11.51	1.63	8.93

Source: Compiled from IRDA publications and annual reports of various companies operating in general insurance sector.

Table VIII
Multiple Correlations and Multiple Regression Analysis of Public Sector General Insurance companies during 2003-2013

Details	a/b	Std. Error	t value	Significance	
Constant (a)	118.780	25.235	4.707	0.003	R=0.932
Claim Ratio (CR)	-1.460	0.334	-4.369	0.005	R ² =0.870
Expense Ratio (ER)	-0.660	0.403	-1.639	0.152	Adj. R ² =0.804
Investment Income Ratio (IR)	1.035	0.179	5.786	0.001	Std. Error of R=3.17851

Table IX
Multiple Correlations and Multiple Regression Analysis of Private Sector General Insurance companies during 2003-2013

Details	a/b	Std. Error	t value	Significance	
Constant (a)	46.020	18.500	2.488	0.047	R=0.883
Claim Ratio (CR)	-0.616	0.173	-3.562	0.012	R ² =0.780
Expense Ratio (ER)	-0.312	0.687	-0.453	0.666	Adj. R ² =0.670
Investment Income Ratio (IR)	0.348	0.845	0.412	0.695	Std. Error of R=4.54482

Table X
Multiple Correlations and Multiple Regression Analysis of General Insurance Sector during 2003-2013

Details	a/b	Std. Error	t value	Significance	
Constant (a)	114.459	18.824	6.081	0.001	R=0.974
Claim Ratio (CR)	-1.593	0.296	-5.387	0.002	R ² =0.950
Expense Ratio (ER)	-0.171	0.427	-0.400	0.703	Adj. R ² =0.924
Investment Income Ratio (IR)	0.861	0.173	4.986	0.002	Std. Error of R=2.17535