CHAPTER II
REVIEW OF LITERATURE

2.1 INTRODUCTION

The Review of literature presented for both national and international level. These reviews considered in practice efficiency of productivity, efficiency of financial performance, profitability of the insurance sector, growth of insurance sector, ratio analysis and other factors relating to this study. It also identifies the research gap.

2.2 REVIEW OF LITERATURE

Ade Ibiwoye (2010)\(^1\) in his paper entitled “Evaluating Financial Services Productivity: A comparison of Ratios, Index numbers and Frontier Methods” compares the financial performance of the select insurance companies and to determine the direction to go by way of efficient operators. In this study when only one output is used to find out the single productivity and multiple outputs are used to measure multiple productivity. Four main types financial ratios are analyzed like liquidity, leverage, activity and profitability ratios are measured to make financial performance comparisons.

Ade Ibiwoye, Joseph O, Ideji, Babatunde O. Oke (2010)\(^2\) in their study entitled “The determinants of Life Insurance Consumption in Nigeria: a co-integration approach” examine the determinant of life insurance consumption in Nigeria during the period 1970 – 2005 within an error correction framework. Co-integration technique revealed that Real Gross Domestic Product (RGDP) and SAP positively and significantly influence Life Insurance Consumption (LIC) in Nigeria while indigenization policy and Domestic Interest Rate (DIR) are statistically significant but inversely related to Life Insurance Consumption (LIC). On the other hand, the authors discover that the Return On Investment (ROI), Inflation Rate (IR), openness of the economy (OPEN) and political instability are insignificant predictors of Life Insurance Consumption (LIC) in Nigeria. In addition, the results of this study indicate a well defined error correction term which is significant at 1 percent with a feedback effect of about 58 percent. The explanatory power of the independent variables is also strong at about 94 percent. The Durbin Watson statistics of 1.89 indicates the presence of very little form of auto-correlation.
Anders Grosen, Peter L.Chte, J.Rgensen (2002)\textsuperscript{3} in their paper titled “Life insurance Liabilities at Market value: an Analysis of Insolvency risk, bonus policy, and Regulatory Intervention rules in a barrier option framework” discuss a contingent claim approach to the market valuation of equity and liabilities in life insurance companies. The formulas are useful from two perspectives. Firstly, they can be implemented to determine the set of parameters that characterizes initially fair contracts in the sense that the model's valuation of the contingent contract corresponds to the initial premium. Secondly, the model can be used for fair market valuation of the equity and liability entries of the company's balance sheet after the inception of the contracts.

Anoop Rai (1996)\textsuperscript{4} in his article “Cost Efficiency of International Insurance Firms” discussed the cost efficiency of insurance firms located in 11 different countries over a five-year period, 1988-1992 is examined by estimating firm level X-inefficiencies. In his article two methods of measuring x-inefficiency are used. One is the stochastic cost frontier model, which assumes a half-normal error, and the other is distribution-free model, which assumes that the errors will average to zero over time. The result shows that x-inefficiencies not only vary by country but by size and specialization. Firms in Finland and France have the lowest x-inefficiency, while firms in the United Kingdom have the highest. On average, small firms are more cost efficient than large firms worldwide.

Carole Bernard and Christiane Lemieux (2008)\textsuperscript{5} in their paper entitled “Fast Simulation of Equity-Linked life insurance Contracts with a Surrender option” discussed equity-linked life insurance contracts that give their holder to the possibility to surrender their policy before maturity. In this type of policies are valued using simulation methods proposed for the pricing of American options, but the mortality risk must also be taken into account when pricing such contracts. In this paper the authors used the least-squares Monte Carlo approach of Long staff and Schwartz coupled with quasi-Monte Carlo sampling and a control variety in order to construct efficient estimators for the value of such contracts.

Charlas L.J (2009)\textsuperscript{6} in his paper “Investors choice – LIC Vs Private Insurance Companies” concludes that in the post-liberalization era in India, there has been a phenomenal growth in the insurance sector with a population of over one billion, national
and international Life Insurance Companies, see India as a land of opportunities and a market for big business. Until 1999, the business of life insurance in India was the monopoly of Life Insurance Corporation of India (LIC). However, now consistent growth has been observed in the private insurance markets. The life insurance market in India is emerging and growing at the rate of 32-34 per cent in the year 2009.

Cheng-Ping Chang (2006) in his article titled “Establishing a Performance Prediction Model for Insurance Companies” discussed the solvency and continuous growth of insurance companies in Taiwan. The author selected 20 insurance companies in Taiwan and used them to try to separate 19 items of financial ratio operation indicators to be the performance evaluation variables of insurance companies. The five indicators like a Capital Structure, Profitability, Solvency, Management Efficiency, and Capital Operational Capability. Result indicated that both return on assets and sign of profitability influence a heavier financial ratio as well as index on performance. The results also indicated that the overall continuance of performance of insurance was significant in the short run during the period 2000-2002.

Cummins (1996) in this paper examined technical efficiency and productivity growth in the Italian Insurance market. The study measured technical efficiency and productivity growth by estimating production frontier based on a sample of 94 Italian insurance companies for the period 1985. To analyze these input-oriented distance functions, DEA was used and productivity growth was measured using Malmquist indices which were decomposed into technical efficiency change and technical change. The study used benefits plus changes in reserves as output in life insurance and incurred losses plus invested assets as output in non-life insurance. The inputs used were acquisition labour expense, administrative labour expense, fixed capital and equity capital. The research concluded that technical efficiency in the Italian insurance industry ranged from 70 to 78 per cent during the study period. However, productivity declined significantly over the sample period, with a cumulative decline of about 25 per cent. It was implied that the insurers needed more inputs to produce their outputs at the end of the period than at the beginning. It was observed that in a dynamically changing environment many insurers might be adopting new approaches to produce their outputs. This provides more opportunities for firms to make mistakes in the choice of technology,
perhaps leading to excessive consumption of inputs even by the "best practice" firms. An increase in the complexity of insurance products and markets could have a similar effect. The research concluded that the firms that fail to improve are likely to be penalized by the market.

**Cummins and Weiss (1998)** in their paper entitled, “Analyzing Firm Performance in the Insurance Industry using Frontier Efficiency Method” explained modern frontier efficiency methodologies which were rapidly becoming the dominant approach for measuring a firm's performance. These methodologies estimate efficient technical, cost, revenue and profit frontiers by comparing each firm in the industry to a reference set consisting of all other firms. The econometric approach involved estimating a cost, revenue or profit function, while the mathematical programming approach is usually implemented using linear programming. The implementation that is used most frequently is Data Envelopment Analysis (DEA). The authors concluded that frontier efficiency methods dominate traditional techniques in terms of developing meaningful and reliable measures of insurance firm performance.

**David Cummins . J and Mary A. Weis (2010)** in their paper “Systemic Risk and the U.S. Insurance Sector” examines the potential for the U.S. insurance industry to cause systemic risk events that spill over to other segments of the economy. The authors examine primary indicators that determine whether institutions are systemically risky as well as contributing factors that exacerbate vulnerability to systemic events. Evaluation of systemic risk is based on a detailed financial analysis of the insurance industry, its role in the economy, and the interconnectedness of insurers.

**David Cummins, Mary Weiss, and Hongmin Zi (2003)** in their paper “Economies of Scope in Financial Services: A DEA Bootstrapping Analysis of the US Insurance Industry” This paper investigates economies of scope in the U.S. insurance industry over the period 1993-1997. In their paper test for economies of scope by estimating technical, cost, and revenue efficiency utilizing data envelopment analysis (DEA). The result shows only weak evidence for the existence of economies of scope in the U.S. insurance industry. Although diversified firms dominate specialists in the production of diversified firm output vectors in terms of revenue efficiency for both
life-health and property-liability insurance, specialist firms dominate diversified firms for the production of specialist output vectors in revenue efficiency and also dominate diversified firms in cost efficiency for property-liability output vectors.

**Garg and Deepti (2008)** in their paper, "Efficiency of General Insurance Industry in India in the Post- Liberalization Era: A Data Envelopment Approach" compared the technical and scale efficiency of twelve general insurance companies in India for the period 2002-03 to 2005-06 by using output-oriented Data Envelopment Analysis (DEA). Three models of input and output were used. Model I represents output as net premium income and input as number of agents, operating expense; Model II represents output as operating income and inputs as number of agents, operating expenses and equity capital. The results showed that among the public sector general insurance companies, New India is the only company which turned out to be technically efficient on both constant returns to scale and variable returns to scale for the whole period of study. Among the private insurers, HDFC Chubb managed to retain 100 per cent efficiency for the last three years on both VRS & CRS. Average efficiency results indicated that though private insurers lag behind public insurers, they are fast catching up and the efficiency scores of private insurers seem to improve.

**Hanifehzadeh Latif (2011)** in the paper entitled “Studying the Structure of Ownership and Efficiency of Insurance Companies in Iran” The purpose of this study is determining the suitable structure of ownership to increase the efficiency of insurance companies. This study evaluated the comparison between the governmental companies and the other private companies with legal block structures. The Data Envelopment Analysis (DEA) and Financial ratios like 1. Liquidity ratios 2. Leverage ratios 3. Activity ratios 4. Profitability ratios 5. Market ratios. are used in organizations to analyze the financial state of companies.

**Hao (2007)** in his article titled “Efficiency Test on Taiwan Life Insurance Industry using X-efficiency Approach” investigated the cost efficiency of 26 life insurance firms operating in Taiwan using Distribution Free Approach (DFA) to measure the relative efficiency of insurers. His findings reveal that larger market share reduced inefficiency, hence increased profitability. The result is consistent with market power
theory which explains that a larger market share tends to be cost efficient and eventually more profits gained in life insurance industry. In this study it is proved that there is a relationship between efficiency and profitability of life insurance holding in the market.

Hifza Malik (2011)\textsuperscript{15} in this paper entitled “Determinants of Insurance Companies Profitability: An Analysis of Insurance Sector of Pakistan” investigated the determinants of profitability in insurance companies of Pakistan. This paper examine the effects of firm specific factors like age of company, size of company, volume of capital, leverage ratio and loss ratio on profitability proxies by ROA. The sample in this study includes 35 listed life and non-life insurance companies which cover the period of 2005-2009. The findings show that there is no relationship between profitability and age of the company and there is significantly positive association between size of the company and profitability. The result also shows that the volume of capital is significantly and positively related to profitability. Loss ratio and leverage ratio showed negative but significant relationship with profitability.

Hsiao & Su (2006)\textsuperscript{16} in their paper “An Evaluation of Investment Performance and Financial Standing of Life insurers in Taiwan” analyzed 24 life insurers in Taiwan from year 1998 to 2002. The author applied Data Envelopment Analysis (DEA) and Malmquist Productivity Index (MPI) to measure relative efficiency and investment performance. The main findings prove that efficiency and investment performance are the main determinants of business performance. It is doubtful that there is any significant relationship between efficiency and investment performance. Thus, it is appropriate to investigate these relationships in two different organization forms in Malaysia.

James C. Hao (2007)\textsuperscript{17} in his paper “Efficiency Test on Taiwan's Life Insurance Industry-Using X-Efficiency Approach” Using twenty-three years of data, 1981-2003, the author was estimating transom cost function for 26 life insurance companies. Distribution free analysis (DFA) was applied to determine the relative efficiency of insurers in the sample. The author tested the constants to see if they were related to the so-called X-efficiencies because of market share, diversification products strategy, scale efficiency and market growth ratio. The results show that firms with large market share tend to be cost efficient.
Jean-Claude Triches (2005) in this Journal, Financial Stability and the Insurance sector” focuses on the relevance of the insurance sector for the overall stability of the financial system by outlining the sources of risk and vulnerability facing the industry. The growing inters linkage between insurers and banks are analyzed. The paper concludes by identifying some key challenges for the insurance sector.

Jeng & Lai (2005) in their paper “Ownership structure, agency costs, specialization and efficiency: An analysis of Keiretsu and Independent insurers in the Japanese non-life insurance industry” examined three unique organizational forms of Japanese non-life insurance industry namely Keiretsu firms, non-specialized independent firms (NSIF) and specialized independent firms (SIF). The authors attempt to examine the efficiency differences among organizational form by using cross frontier method the results found that Keiretsu and independent firms are equally efficient. The Keiretsu cost frontier dominates the NSIF cost frontier for both Keiretsu and NSIF outputs. This implies NSIF to be less successful than Keiretsu in choosing the cost combination of inputs.

Kaman & Turgutlu (2009) in their article entitled “Cost Efficiency and Scale Economies in the Turkish Insurance Industry” examined the cost efficiency and scale economies of 85 Turkish insurance firms for a period of 15 years using stochastic frontier model. It is found that small firms are more efficient than larger firms, confirming a significant relationship between size and inefficiency.

Kamatla Sheeba (2009) LIC continues to be the dominant life insurer even in the post-liberalization phase of the Indian insurance industry. It is a new growth trajectory surpassing its own past records. The average premium growth so far has been 20% with the targeted Rs.1, 75,000 crores total premium by the end of current fiscal, the life insurance giant is looking at a market share of about 75 percent.

Karim, Mohd Zaini Abd Jhantasana, Chanta (2005) in this study entitled “Cost Efficiency and Profitability in Thailand’s Life Insurance Industry: a Stochastic Cost Frontier approach” evaluate the cost efficiency and its relationship with profitability in Thailand’s life insurance firms during the period 1997-2002 using the stochastic cost frontier approach. The authors find that the industry is on average of 82 to 140 percent inefficient. There is no significant relationship between inefficiency and age. But, the
mean inefficiency is negatively correlated with size suggesting the need for rationalization in the insurance industry in Thailand. Consolidating the large number of smaller insurers should be high on the government’s agenda, and the capital requirements for life insurers need to be increased. In this paper the authors show that inefficiency is negatively correlated with ROE and ROA ratios. This shows that efficient firms, on average, have higher return on equity and on assets. This indicates that inefficiency has substantial effect on the profitability of life insurance companies.

**Klumpes (2004)**[^23] in his paper “Performance benchmarking in financial services: Evidence from the UK Life Insurance Industry” investigated 40 Life Insurance Companies in UK over the period 1994 to 1999. The authors employed standard Fourier flexible form economic approach to estimate the cost and profit efficiency. The results indicate no evidence that mutual form has higher cost inefficiencies than stock form.

**Li-Ying Huang, Tzy-yih Hsiao, and Gene C. Lai (2007)**[^24] in their paper entitled “Does Corporate Governance and Ownership Structure Influence Performance? Evidence from Taiwan Life Insurance Companies” examine the relation between corporate governance and performance and the relationship between ownership structure and performance in the Taiwanese life insurance industry. This study uses the value-added approach of data envelopment analysis (DEA) to measure performance. In this study two performance measures were used with the premium income as the output variable and claim benefit value-added approach.

**Mahmoud (2008)**[^25] in his study entitled "A Multivariate Model for Predicting the Efficiency of Financial Performance for Property and Liability Egyptian Insurance Companies" 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.
Manjit Singh and Rohit Kumar (2009) in their paper entitled “Emerging trends in Financial performance of General insurance industry in India” reveal that the private sector general insurance companies’ results present better efficiency in terms of expenses of management ratio, combined ratio, underwriting results ratio and they are increasing their market share year by year, whereas the performance of public sector General Insurance Companies in terms of net earnings, and return on net worth ratio is better than that of private sector General insurance companies.

Mansor and Radam (2000) in their study "Productivity and Efficiency Performance of the Malaysian Life Insurance Industry" measured the productivity of life insurance industry in Malaysia by employing the non-parametric Malmquist index approach. The study employed data envelopment analysis (DEA) to measure technical efficiency, technical changes and factor productivity. The data of 12 Malaysian insurance companies over the period 1987 to 1997 was taken. Three variables were used as output, namely, new policy issued, premium and policy in force and five inputs were used namely claims, commission, salaries, expenses and other cost. The results indicated that despite the productivity growth in the insurance industry, it was relatively low compared to the real economic growth experienced by Malaysia. The study found that like the manufacturing sector the future growth of the insurance industry would depend on its ability to compete efficiently. Being able to provide service in an efficient way would be an important source of comparative advantage under the era of globalization. The results also suggested that both technical efficiency and technical progress contribute to the overall productivity growth of the industry.

Mariappan R (2011) in his paper “Growth & productivity of the Unorganized Manufacturing Sector in India” attempts to estimate the economic returns to scale, marginal productivities of labour and capital inputs for two-digit level industries in India’s unorganized manufacturing sector. The results show that the elasticity of output with respect to labour and capital has increased and significantly contributed to the output growth during the post-reform period compared with pre-reform period.

Marietta Janowicz-Lomot (2011) in the article “Investment activity of non-life insurance companies in Poland” examines insurers’ investment activity in non-life sector
in Poland in the years 2006-2010. The main aim of this insurance company’s activity is selling protection to their customers. But insurers also hold investments to cover future claims or benefits, administrative expenses and profits to shareholders. The role of insurance investment management is to manage the funds generated by the insurance business, maximizing risk adjusted returns while meeting regulatory requirements on its assets and other financial constraints. Insurance investment management must ensure that investment returns preserve the solvency, both regulatory and economic, of the insurance company, earn the return commensurate with the use of its capital and enable it to continue to underwrite profitable insurance business.

Marijana Curak, Sandra Lončar, & Klime Poposki (2009) in their paper “Insurance Sector Development and Economic Growth in Transition Countries” examine the relationship between insurance sector development and economic growth in 10 transition European Union member countries, in the period from 1992 to 2007. The authors apply fixed-effects panel model and control for other relevant determinants of economic growth and endogeneity. They concluded that insurance sector development positively and significantly affects economic growth. The results are confirmed in terms of life and non-life insurance, as well as, total insurance.

Martin Eling Michael Luhnen (2008), in their paper, “Frontier Efficiency Methodologies to Measure Performance in the Insurance Industry” provide an overview and new empirical evidence on frontier efficiency measurement in this paper. Different methodologies, countries, organizational forms, and company sizes are compared, considering life and non-life insurers in the insurance industry. This paper finds a steady technical and cost efficiency growth in international insurance markets from 2002 to 2006, with large differences across countries.

Mohanasundari M and Balanagagurunathan S (2011) in their paper “The Phases and Changes of Insurance Industry in Indian Economy” provide an outlook for the Indian economy in the light of the extraordinary global financial crisis, that started in the US, but which has now formed into the worst economic downturn since the Great Depression. The Indian economy was also slowing down even before the onset of global crisis and so the timing of this external shock could not have been worse. The analysis
undertaken for this project shows that the global crisis is likely to bring the GDP growth rate down considerably. This paper identified an insurance penetration measure to get the Indian economy back on the path of sustained rapid and inclusive growth.

Monica Billio, Mila Getmansky, Andrew W. Lo, and Loriana Pelizzon (2010) measured five forms of the systemic risk based on statistical relations among the market returns. In this paper they used correlations, cross-autocorrelations, principal components analysis, regime-switching models, and Granger causality tests. In this paper the authors find that all four sectors have become highly interrelated and less liquid over the past decade, increasing the level of systemic risk in the finance and insurance industries. These measures can also identify and quantify financial crisis periods. The results of this paper suggest that while hedge funds can provide early indications of market dislocation, their contributions to systemic risk may not be as significant as those of banks, insurance companies, and brokers who take on risks more appropriate for hedge funds.

Naser Najjar (2011), in his study entitled “Capital Structure of Insurance Companies in Bahrain” attempts to highlight the critical firm characteristics that managers should consider when setting their “optimal” capital structure. This study is based on a multiple linear regression analysis. Each independent variable along with the dependent variable is measured separately for a sample of insurance companies in Bahrain for the period of 2005-2009. This study concluded that a strong relationship between firm characteristics, such as (1) Tangibility of Assets, (2) Profitability, (3) Firm Size, (4) Revenue Growth, and (5) Liquidity, and observed capital structure, as represented by the Debt Ratio, although Profitability and Revenue Growth are not statistically significant.

Nitin Tanted (2006), in the paper entitled “Growth and Survival Strategy for Indian Insurance Companies in the era of emerging global competition” analyzed the impact of opening up India’s insurance sector and the growth and survival strategy of Indian insurance companies. This paper concludes that the development and growth of insurance sector is extremely essential for channeling the investments into the infrastructure sector.
Norashikin Ismail, Syed Othman Alhabshi, Obiyathulla Ismath Bacha (2011)\textsuperscript{36} in their title “Cost Efficiency and Investment Performance: Mutual and Stock Form in Malaysian Insurance Industry” revealed that a significant difference in cost efficiency exists between mutual (takaful operators) and stock forms (insurance firms) in Malaysia. This study will empirically investigate the cost efficiency and investment performance for mutual as well as stock forms. In this article a non parametric approach, Data Envelopment Analysis (DEA) with input orientation using variable return to scale (VRS) assumption is employed to measure the cost efficiency for takaful and insurance industry. A flow approach is applied to select inputs and outputs variable. The Anova and Mann Whitney test are employed to examine any significant difference in cost efficiency between Takaful industry and insurance industry. A Pearson correlation is used to assess any significant relationship between cost efficiency and investment performance. The Anova test is also applied to determine any significant difference in investment performance for both organization forms. The main findings indicate a significant difference in cost efficiency between mutual (takaful) and stock (insurance). A Pearson correlation has proved a substantial significant correlation between efficiency and investment performance. It is found that mutual form has lower and significant return in investment income compared to stock form.

Norma Md Saad, Nur Edzalina Haji Idris (2011)\textsuperscript{37} in their study “Efficiency of Life Insurance Companies in Malaysia and Brunei: A Comparative Analysis” focused on the efficiency of the life insurance industry in Brunei and Malaysia. Data Envelopment Analysis (DEA) is used to explore the contributions of technical and efficiency change to the growth of productivity in the Malaysian and Brunei life insurance industries by applying the generalized output-oriented Malmquist index for the year 2000-2005. This study utilizes two inputs and two outputs, namely, commission and management as well as premium and net investment income, respectively. In the DEA technique, efficiency is measured by the Malmquist index.

Ozlem Ozdemi and Aysegul Balkanl (2011)\textsuperscript{38} in their paper “Liquidity Structure of Turkish Insurance Industry: Ratio Analysis” determine the liquidity risk structure of the Turkish insurance industry. For this purpose, they used “ratio analysis” method where each ratio that explains the liquidity structure is calculated by the authors. During this
study period the liquidity risk faced by life insurance sector has increased, while the non-life insurance companies respond to the crisis period by taking precautions and increasing their liquidity levels. In addition, the vulnerability of smaller insurance companies to the liquidity risk has increased more than that of big insurers.

**Peter Vayanos (2005)** in his paper “Growth and Competitiveness of the Insurance Sector” outlines a set of policy recommendations to be adopted to promote the growth and competitiveness of the insurance sector in the MENA (Middle East and North Africa) region. The author begins by reviewing and assessing the existing state of the insurance sector across the region. Thereafter, the author examines the key enablers that underpin a successful insurance sector before recommending policy changes to promote the growth and competitiveness of the MENA insurance sector.

**Rajesh (2009)** in his paper “The Future of Indian Insurance sector” says that around 12.15% of the central Government outlay has been eaten up the vagaries of weather. According to the Commonwealth secretariats vulnerability index, along with Bangladesh, India ranks among the top five spots. For the insurance industry high vulnerability can be an opportunity with an increasing population rate along with rising purchasing power, India is becoming a potential center for insurance companies all over the world and hence the Indian insurance industry has rich credentials to become a sought-after market in the near future.

**Ram Pratap Sinha (2007)** in this paper “Premium Income of Indian Life Insurance Industry: A Total Factor Productivity Approach” compares 13 life insurance companies for the financial years 2002-03, 2003-04 and 2004-05 in respect of technical efficiency and changes in total factor productivity. For the purpose of computation of technical efficiency and total factor productivity, the net premium income of the observed life insurance companies has been taken as the output, and equity capital and the number of agents of insurance industries have been taken as the inputs. The results suggest that all the life insurers exhibit positive total factor productivity growth during the period.

**Ramakrishna Rao T.S and Samuel babu (2009)** in their paper “Indian insurance inching forward” opine that despite having the second largest population in the world with 1.13 billion people, India has the lowest insurance penetration (Premium as a
percentage of GDP) especially for the property and casualty insurance. Saturation of the insurance markets in many developed economies has made the Indian market more attractive for international insurance players. The raising of FDP limit will give the industry a quantum boost and enable it to grow and reach out to the length and breadth of the country.

Ramanadh Kasturi (2006)\(^4\) in his article entitled “Performance management in Insurance Corporation” examined performance management system in insurance corporations in general based on the principles of performance management in service organizations. The financial performance is understood in terms of various financial ratios that are divided as profit performance measures and investment performance measures. The Non-financial measures include a range of indicators with orientation of customers’ growth, value to the community and societies.

Ran Barniv, John hathorn, Abraham Mehrez and Pougaskline (1999)\(^4\) in their paper “Confidence Intervals for the Probability of Insolvency in the Insurance Industry” examine various measures of the confidence intervals, such as their minimum lengths and minimum upper bounds. Two examples show a substantial improvement reduction in the length and the minimum upper bound of the confidence intervals at the optimal level of the financial accounting variables. A third example depicts a confidence interval for the probability of failure for an insolvent insurer. Implications for researchers and users of financial accounting information are briefly discussed in their study.

Rao G.V (2009)\(^5\) in his paper “Business Trends of Two Non-life Insurance Sector” analyses the growth trend during 2007-08: In 2007-2008, the earned premium rose by Rs.1041 crores. The incurred claims rose by Rs.1587 crores, the claims outstripping the premium rose by Rs.546 crores. The incurred claims rose to 90 per cent up from 85 per cent despite the vociferous and loud complaints that rates are dramatically dropping after degasification; the earned premium growth performance of the PSU insurers in 2007-08 is by far the highest in the last four years.

Rongrong Zhang (2012)\(^6\) in this paper “The Effect of Bank Activity Restriction on Life Insurers’ Efficiency: Evidence from European Markets” examines the relationship between bank entry restrictions into insurance operations and life insurers’
operating efficiency for a sample of 21 European countries over a period of 1995-2003. The insurers operate more efficiently in markets with lower bank entry restrictions. The results suggested that financial deregulation has positive spill-over effect, supporting the deregulation efforts in the global financial markets.

Sabera (2007)\textsuperscript{47} in his paper, “Privatization of Insurance Industry in India” highlighted that growing insurance industry has recorded a growth of 16 per cent in the financial year 2005-06. Innovative products, better marketing and aggressive distribution have enabled fledgling private companies to sign up Indian customer faster than expected. The private players are mainly concentrating on customer service. For this, they are looking at delivery channels like call centers, internet, telemarketing and direct marketing. The public sector companies are also identifying new ways to satisfy the needs of the customers and will be competing with private players in the near future. There will be a large scope for growth and the industry will become highly competitive.

Saeidy & Kazemipou (2011)\textsuperscript{48} in their paper “the performance of private and Public Insurance companies in Using Date Envelopment Analysis” examine and compare the technical efficiency allocations and economic public and private insurance companies has been in Iron, the linear programming method of data envelopment analysis used for software performance. The results indicate significant differences in average technical efficiency, allocation and economic of public and private insurance companies.

Sankara Muthukumar (2009)\textsuperscript{49} in his paper “Life insurance companies in India: Performance and Prospect” concludes that the life insurance companies in India are active in new product development and in marketing areas. But they need to penetrate into rural areas in a big way since huge market potential lies in rural India. The private life insurers are more dynamic, which is evident from the fact that their premium growth is commendable. LIC, the public sector giant, though it claims that it has the lion’s share, will have to reorient its strategies to show higher premium growth rates, A good performance of life insurance companies in India will result in the growth of the life insurance market in India. And the growth of the life insurance market can be viewed as safe and secured Indians and thus safe and secured India.
Sethu (2007)\textsuperscript{50} in his paper, showed the effect of privatization and globalization on non-life insurance segments. He observed that the current trend in the insurance sector speaks volumes of the unethical practice of insurance and non-maintenance of the principles of insurance prevalent prior to the privatization of insurance in India. The basic principles of insurance are to serve the public for their security without detriment to them. It not only should aim at spreading of insurance all over the country but also promote social security keeping in view the principles of equity and natural justice, in the interests of all the insuring public. In the initial stage of privatization, the private companies were concentrating more on the creamy business and were indulging in unethical practices to grab the business by hook or crook. The PSU (Non-Life) insurers, on the other hand, having the massive strength of manpower, are unable to match with the private players who have minimum staff strength and a huge technology at their disposal.

Shu-Hua Hsiao (2011)\textsuperscript{51} in this paper “Cost Efficiency in the Life Insurance Industry” examined the trend of liberalization and internationalization. Operating efficiency is critical to sustainable operations, and cost efficiency improvements positively affect operating efficiency, since integrated utilization of resources can produce maximal economic benefit. This study covers the period from 1997 to 2007, and adopted the Stochastic Cost Frontier Approach (SCFA) to make cost efficiency and economy-of-scale analyses, and studied cost efficiency factors. Some empirical results are as follows: 1) Variable scales and variable patterns in the life insurers enable different economy-of-scale and cost efficiency values. 2) It is recommended to join a financial holding company or utilize a horizontal alliance to improve cost efficiency.3) Based on the Tobit regression analysis, total asset turnover, fixed asset turnover are positively relative to cost efficiency. However, insurance payment to net written premium ratio is negatively relative to cost efficiency.

Sinha (2006)\textsuperscript{52} in his paper “Operating Efficiency of Life Insurance Companies: A Data Envelopment Approach" attempted to compare the operating efficiency of life insurance companies for the financial year 2004-05 using the DEA. In this paper, operating income and net premium income have been taken as the output and the number of agents employed and equity capital as the inputs. The comparison of the efficiency score showed that the private insurance companies are still lagging behind LIC, in terms
of the net premium income. Not only LIC, but 'SBI Life' also has a technical efficiency score of 1, i.e., these two companies were declared technically efficient (given the inputs utilized they produce the maximum observable output). All other private life insurance companies had the technical efficiency score less than 1, in terms of operating income. No life insurance company except LIC was found technically efficient.

Sinha (2007)\textsuperscript{53} in his paper “Premium income of Indian life insurance industry- A Total Factor productivity Approach” compared thirteen life insurance companies in respect of technical efficiency for the period 2002-03 to 2005-06 using the assurance region approach. In his paper, year to year comparison of mean technical efficiency scores revealed that mean technical efficiency has improved in 2003-04 relative to 2002-03, remained on the same level in 2004-05 and declined in 2005-06. This is likely because of divergence in the performance across the life insurers. In the last two years most of the life insurers have exhibited increasing returns to sale.

Sinha (2009)\textsuperscript{54} in his paper "Technical Efficiency of Indian General Insurance Companies: A Non-radial Approach", compared the technical efficiency of four public sector and six private sector general insurance companies using a non-radial data envelopment analysis. The time period of the study was 2003-04 to 2005-06. The outputs were considered net premium income and operating income; and inputs were considered as operating expenses. The study showed that there was a decline in the mean technical efficiency in 2004-05 relative to 2003-04, but it increased again in 2005-06. Among the observed general insurance companies, Reliance and New India consistently occupied the top two slots for all the years.

Sonika Chaudhary, Priti Kiran (2011)\textsuperscript{55} in their paper “Life Insurance Industry in India - Current Scenario” discussed that life insurance in India’s trend from the year 2005-06 to 2010-2011. During the study period this sector moved upwards from the factors like number of offices, number of agents, new business policies, premium income etc. Further, many new products like ULIPs, pension plans etc. and riders were provided by the life insurers to suit the requirements of various customers. However, the new business of such companies was more skewed in favor of selected states and union territories. This paper concludes that Private life insurers used the new business channels of marketing to a great extent when compared with LIC.
Steven w. Potter (1998) in the paper “Life Insurer Financial Distress, Best's Ratings and Financial Ratios” evaluates the efficiency of Best’s ratings and rating changes compared to financial ratios as predictors of life insurer insolvency. The expected cost of misclassification of using financial ratios, ratings and rating changes, and financial ratios combined with ratings and rating changes is compared over a broad range of relative misclassification costs. This study provides evidence that using ratings, rating changes and total assets combined is more efficient than using financial ratios combined with ratings and rating changes (or financial ratios alone) for some cost ratios in both holdout samples.

Tapan Sinha (2005) in his paper entitled “An analysis of the evaluation of insurance in India” discussed the current state of play and projected future of the industry. And also he examined the overall expenses as a percentage of premium income, rural share of life insurance business value, investment portfolio of the life insurance corporation from the year 1980 – 2000. This paper concludes that India will become an attractive insurance market over the next decades.

Vijayalakshmi (2009) in her paper entitled “Impact of Globalization-An overview of Insurance Industries in India” says that the potential of the Indian insurance market is huge with life insurance and Non-life insurance penetration, the growth rate of insurance premium underwritten. The market share of the life insurance companies, the growth rate of insurance premium, and the number of policies of life insurance companies increased due to the globalization of the insurance sector.

Wadlamannati (2008) in the paper titled “Do insurance sector growth & reforms effect Economic development?” examines the effects of insurance growth and reforms along with other relevant control variables on economic development in India in the period from 1980-2006. Growth of insurance penetration is used as proxies of insurance sector growth. In this study applied ordinary least squares, co-integration analysis and error correction models. This study confirms positive contribution of insurance sector to economic development and a long- run equilibrium relationship between the variables.
Wasimul Rehman, Muhammad Ilyas and Hafeez ur Rehman (2011) in their paper entitled “Intellectual capital performance and its impact on financial returns of companies: An empirical study from insurance sector of Pakistan” examine the performance of intellectual capital (IC) of insurance sector of Pakistan for the year 2009. The aim of this paper is also to explore various determinants of IC and its impact on financial performance of insurance sector of Pakistan. To measure the IC performance of insurance sector and its effect of various constituents on financial performance across sectional data was obtained from 21 listed life and non-life insurance companies. In this study the results revealed that human capital efficiency (HCE) plays a significant role in IC performance of both life and non-life insurance sector of Pakistan. The firm having more efficient people means having better performance of IC.

William H. Greene, and Dan Segal (2004) in their paper entitled “Profitability and Efficiency in the U.S. Life Insurance Industry” discussed the relationship between cost inefficiency and profitability in the U.S. life insurance industry. The life insurance industry is mature and highly competitive, and cost efficiency may be the main driver of profitability. The authors derive cost efficiency using the stochastic frontier (SF) method allowing the mean inefficiency to vary with organizational form and the outputs. In addition, the estimation of the cost efficiency measure takes into account the underlying accounting concepts. This study suggests that cost inefficiency in the life insurance industry is substantial relative to earnings, and that inefficiency is negatively associated with profitability measures such as the return on equity.
References:


   


