CHAPTER II:
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2.1. INTRODUCTION

In this chapter, an effort has been made to provide an overview of various aspects and issues related to this research work through review of earlier literatures both at the national and international level in insurance as well as banking sector. The review of literature leads to draw some significant conclusions and serve as a guide mark for this study. It also gives a fair chance to identify gaps that exists in the area of research. In order to assess the research gap the literature review has been presented in following manners. First we have presented the literature review on general view of financial services sector as well as insurance sector and then literature related to market structure, performance and efficiency both in national and international level. The literatures related to the relationship of market structure and efficiency with performance is presented at the end by dividing into two sections on the basis of international and national scenario. The detailed literature review is given below:

2.2. GENERAL VIEW OF FINANCIAL SERVICE SECTOR

The financial service sector plays a critical role in every modern economy. It provides the fuel that promotes job creation, sustains economic growth and innovation. An efficient financial sector reduces the cost and risk of production as well as trading goods and services, thus makes an important contribution to raising standards of living. Different researchers have given different statement on the role of financial service sector in the growth and development of economy. Some literature mostly the earlier studies suggest significant disagreements on the finance growth nexus. According to them there still exists great dichotomy regarding the role of financial services sector in facilitating sustainable economic growth in the long run (Schumpeter, 1911; Robinson, 1952; Gurley & Shaw, 1955; Mckinnon, 1972 and Goldsmith, 1996). Levine & Zervos, (1996) confirmed the same that financial sector does not promote economic growth rather it develops the real sector of an

Recent literature supports the vital importance of growth and development of financial service sector in facilitating and sustaining economic growth (Hicks, 1969; Levine, 2004; Claessens & Feijen, 2006 and Goyel & Dhankar, 2011). Hicks, (1969) argued that the industrialization process in England was promoted by the development of financial sector, as it provides access to funds to the government and people that were used to finance capital projects for the development of the economy. This view was supported by King & Levine, (1993), according to them financial development fosters economic growth. Further, according to the new growth theorists, a well-developed financial sector facilitates high and sustainable economic growth (Hicks, 1969). Goyel & Dhankar, (2011) in case of emerging economies found importance of financial services in the development of economic growth. Further “it is widely recognized and deliberated upon that the global importance of service sector in terms of its share in GDP has been growing progressively in the economies of the world; this includes financial services, which in most economies are the single largest contributor to economic growth and employment” (Hufbauer & Warren, 1999).

Demetriades & Hussein, (1996) conducted a variety of causality tests between financial sector development and real GDP growth for 16 developing countries. They found a considerable evidence of bidirectional causation between financial sector development and real GDP growth. In a research by Ahmed & Malik, (2009) on the role of financial sector development in economic growth and domestic and foreign capital accumulation for 35 developing countries over the period 1970-2003 used generalized methods of moment’s estimation techniques. They concluded that the development of financial sector affects per capita GDP mainly through its role in efficient resource allocation rather than its effects on capital accumulation. They also confirmed that it is the domestic capital accumulation that helps in increasing per worker output and hence promoting economic growth in the long run.
Fadare, (2010) explored the effect of banking sector reforms on economic growth in Nigeria over the period 1999 - 2009. Using the ordinary least square regression technique, he found that interest rate margins, parallel market premiums, total banking sector credit to the private sector, inflation rate, size of banking sector capital and cash reserve ratios account for a very high proportion of the variation in economic growth in Nigeria. Again Oluitan, (2012), observed that real bank credit Granger causes output growth in case of Nigeria. Further Liang & Reichert, (2012) conducted a panel analysis of developed countries to examine whether policy-related factors in terms of financial sector development have significant impacts in countries with different levels of economic development. The results depicted that the influence of liquid liabilities on economic growth is enhanced when relevant policy-related factors are included. The authors also measured the impact of non-bank financial institutions on economic growth and found that the policy-related variables displayed differential impacts while increasing the explanatory power of the model.

South African Reserve Bank, (2014) examines empirically the nature of the relationship between financial sector development and economic growth with specific reference to the Southern African Development Community (SADC) by using panel data of 14 SADC member states from 1990-2012 with gross domestic product as the dependent variable and various indicators of financial sector development and other explanatory variables as independent variable. The study found that the financial sector development is important for growth. Balago, (2014) examines the relationship between financial sector development and economic growth in Nigeria by using time series data from 1990-2009. He used various econometric techniques such as Augmented Dickey Fuller (ADF) Test, Johansen Multivariate Co-integration Test, Ordinary Least Square Regression and Vector Error Correction Model (VEC). The result showed that development in financial sector variables like banking sector credits; total market capitalization and foreign direct investment positively affect economic growth variables like real gross domestic product.

Thus it can be concluded that development of financial service sector promotes economic growth, except a few cases and provides many functions, such as facilitating transactions in the economy, mobilizing savings, allocating capital funds,
monitoring managers and transforming risk i.e. managing risk. One of the financial institutions that provide risk management is insurance.

Insurance is sine-quo-non for development and growth of any economy and it has been recognized from many years. The first conference of United Nations Conference on Trade and Development (UNCTAD, 1964) recognized the importance of insurance by stating that “a sound national insurance and reinsurance market is an essential characteristic of economic growth”. It was also supported by Ward & Zurbruegg, (2000) they said that insurance provide economic transactions through risk transfer and indemnification and also promotes financial intermediation. More specifically, insurance can promote financial stability, mobilize savings, facilitate trade and commerce, enabled risk to be managed more efficiently, encourage loss mitigation, foster efficient capital allocation and generate employment, which contribute to the growth and development of the economy of any country (Skipper, 2001). Though insurance has got many functions which contribute to economic development but compared to the vast literature focusing on bank and stock markets, the insurance sector has hardly been investigated in terms of its role in the development of economic growth (Haiss & Sumegi, 2008).

The few research efforts on the insurance growth nexus indicate a positive relationship between development of insurance sector and economic growth (Holsboer, 1999; Ward & Zurberg, 2000; Arena, 2008 and Han, Li, Moshirian & Tian, 2010). Beenstock, Dickinson, & Khajuria, (1988) applied cross section data covering 12 countries from 1970–1981 to analyze the relationship of insurance sector development and growth of economy. They regressed premiums for Property Liability Insurance (PLI) with Gross National Product (GNP), income and interest rate. They found that premiums are correlated to interest rate and GNP. A similar result is established by Outreville, (1990) in case of 55 developing countries. The research identified a link between an economy’s financial development and insurance market development. Browne & Kim, (1993) conducted a cross-sectional analysis of life insurance consumption per capita for 45 countries for the years 1980 and 1987. They found that income, dependency and social security expenses are positively correlated while inflation is negatively correlated and significant in both years. On the other hand Outreville, (1996) could not confirm his earlier findings.
Webb, Grace & Skipper, (2002) carried out another study to investigate the effects of insurance and banking sector on economic growth. They found that both the insurance and the banking sector affect economic growth of a country. Kugler & Ofoghi, (2005) analyzed the long-run relationship and Granger causality between insurance premiums and economic growth for the period 1966–2003. Johansen’s cointegration test showed a long-run relationship between insurance and economic growth and the causality test indicated that insurance inducing growth for the majority of the insurance products but Life, liability and pecuniary loss insurance do not cause economic growth in the short run. Arena, (2008) tested whether there is a causal relationship between insurance market activity (life and nonlife insurance) and economic growth by using the generalized method of moments (GMM) for dynamic models of panel data from 55 countries between 1976 to 2004. The result proved robust evidence for this relationship. In a study on insurance sector development and economic growth in transition countries by Curak, Loncar & Paposki, (2009) empirically examined the relationship between insurance sector development and economic growth in case of both life and non life insurance in 10 transition European Union member countries, during the period from 1992 to 2007. They applied fixed effects panel model and controlled for other relevant determinants of economic growth and endogeneity. According to their findings, insurance sector development positively and significantly affects economic growth.

Michael, (2012) examined the causal relationship between GDP and insurance sector growth of Nigeria and ascertained a long-run relationship between growth of general insurance and GDP. Hou & Yu, (2012) investigated the impact of financial institutions and GDP in 12 Euro Countries. They found evidences from cross country that life insurance penetration and banking development do not have any significant impact on GDP contradicting the result of Michael, (2012). Lee, Han & Tian, (2013) also inspected the long run and short run relationship between the GDP and real life insurance premium of 41 countries. It was found that in the long run one unit increment in the real life premium will raise the GDP by 0.06 units. They established significant relationship between life insurance markets development and economic growth both in the long and short run, bidirectional causalities were found between them. Chang, Lee, Chien & chang, (2013) investigated the causal relationship between the insurance activities and GDP, using a data set of 10 OECD
countries. The result concluded that there was a significant positive relationship between the overall insurance growth and economic development for 5 countries out of 10 OECD countries.

Thus from the above literature one can understand the importance of the growth of insurance in the development of a country’s economy. Haiss & Sumegi, (2008) argued that the insurance sector needs to be paid more attention in financial sector analysis and macroeconomic policy making. Thus the analysis of performance and efficiency of insurance sector has got importance among the researchers. As a result a large number of studies have been conducted dealing with different aspects of insurance like market structure, performance efficiency and SCP relationship which are discussed below-

2.3. STUDIES RELATED TO MARKET STRUCTURE

Market structure is mainly analyzed by measuring competition and competition in any sector fetches well differentiate, innovative products with increased customer services and reduced price. It is of immense importance in case of financial sector as it shows the efficiency of financial services, the quality of financial services and degree of innovation in the sector (Claessens, 2009). In early age, competition was measured by using structural approach only. Structural measure infers the nature of competition in an industry from its structural characteristics, such as the number of firms in the market and their size distribution, concentration, market share etc. (White, 1982). The main approaches of structural measures includes the method like Structure Conduct Performance (SCP) (Bain, 1951) hypothesis, efficient structure (ES) hypothesis (Demsetz, 1973), Concentration ratio, Herfindahl Hirschman Index (HHI), Entropy Index (EI), Hall Tideman Index, Comprehensive Industrial Concentration Index, Rosenbluthe Index etc. (Bikker & Haaf, 2002).

The need of non-structural approach was felt when it was found that the structural approach can not clearly explain the competitiveness of an industry because it ignores the relationship between market contestability and revenue behavior at the firm level (Bikker & Haaf, 2002). The main non-structural measures include Lerner Index (Lerner, 1934), Iwata model (Iwata, 1974), Bresnahan model (Bresnahan, 1982), Panzar and Rosse (P-R) model (Panzar & Rosse, 1987) and Boone Index (Boone, 2008). These non-structural measures are based on New Empirical
Industrial Organization (NEIO) and emphasized the analysis of competitive conduct of firms without using explicit information about the structure of the market (Leon, 2014). They measured competition directly by observing behavior of firms in the market (Bikker & Haaf, 2002; Carbo, Humphrey, Maudos, & Molynieux, 2006 and Leon, 2014). Though structural and non-structural approaches have its own practical and theoretical advantages as well as limitations (Leon, 2014), the P-R model is less stringent in terms of data requirements and can be applied with less number of observation unlike other non structural measures (Coccorese, 2012 and Leon, 2014).

The analysis of degree and pattern of competition in financial services specially in banking sector and insurance sector both in national and international level has become very pertinent topic for research in current scenario due to the completion of reform process all over the world. Most of the studies on competition both in international and national level were found mainly in banking sector (Cetorelli, 2001; Bikker & Haaf, 2002; Claessens & Laeven, 2004; Rozas, 2007; Claessens, 2009; Mensi & Zouari, 2011; Pawlowska, 2012; Ansari, 2013 and Mirzaei & Moore, 2014,) where structural and non-structural measures of competition were used.

2.3.1. International Scenario

The structural approaches like SCP and ES hypotheses were used in different foreign countries but they found a mixed result and could not indicate the superiority of one hypothesis than the other (Heggestad & Mingo, 1977; Brozen, 1982; Smirlock, 1985; Jackson, 1992 and Evanoff & Fortier, 1998). While using non-structural approach like P-R model researchers, mostly in European countries revealed monopolistic competition (Lyod-Williams, Molyneux & Thornton, 1994; Bikker & Groeneveld, 2000 and Bikker & Haaf, 2002).

Claessens & Laeven, (2004) have analyzed the degree of competition for 40 banks in Poland using H-Statistics during 1994-2001. The study observed monopolistic competitive environment in the market. Another research conducted by Rozas, (2007) analyzed the degree of competition in Spanish banking sector during 1986-2005. The results suggest that large banks are operating in nearly perfect competition and there is no apparent relationship between competition and market structure in terms of concentration and instability. Pawlowska, (2012) had carried out a study to investigate the level of competition in Polish banking sector for the period of 1997 to
2009. The result showed that there is a decrease in competition due to financial crisis during the period 2008-2009, but there is a slight increase in the competition during the period. They confirmed a monopolistic competition in case of Polish banks.

The study of market structure through competition is pivotal as it drives social welfare by reducing price, increasing customer services and also helping in policy making for the wellbeing of the sector as well as the society. In case of insurance sector also this type of research is pertinent as it shows the implication of changes due to deregulation occurred in last two decades and brought enormous structural changes in insurance markets around the world. As a result some studies on market structure was done in international level mainly in United State they used SCP and ES hypothesis for analyzing market structure and found different results for different insurance lines (Carrol, 1993; Chidambaram, Pugel & Saunders, 1997; Bejtelsmit & Bouzouita, 1998; Choi & Weiss, 2005 and Weiss & Choi, 2008).

There are a few studies in insurance sector where HHI, EI, Concentration ratio were used and a very few studies where H- Statistics was used to measure the degree of competition at different countries. Nissan, (1996) analyzed the degree of concentration amongst the largest 200 property liability insurance companies of US by using Theil’s Entropy Index over a period from 1985 to 1993. It revealed an increase of concentration in US property liability insurance due to substantial number of mergers and acquisitions. Again Nissan & Caveny, (2001) also observed a similar result in terms of lines of US property liability insurance industry by using HHI for a period between 1989 and 1995. They found increase in concentration for almost all the lines of insurance and the most concentrated line was homeowners followed by private passenger auto physical damage and the least concentrated line was commercial auto physical damage. Sukpaiboonwat, Piputsitee & Punyasavatsut, (2014) investigated market structure of life insurance and non-life insurance industry over a period of 2006-2011 in Thailand by using CR and HHI. They concluded higher concentration in life insurance industry than the non life insurance. In both segments of the insurance market, as well as in the overall insurance sector, they established a downward trend in market concentration which is contradicting the result found by Nissan, (1996) and Nissan & Caveny, (2001) in case of US property liability insurance.
Murat, Tonkin & Juttner, (2002) were the first group of researchers to apply P-R model followed by Kasman & Turgtlu, (2008); Coccors, (2012) and Todorov, (2016) in case of general insurance sector in abroad. Murat, Tonkin & Juttner, (2002) applied P-R model to a cross sectional data set of 58 Australian general insurance companies for the year 1998. They applied two models for two dependent variables and same independent variables which include four input price and two control variables. The result indicated a less than perfect competition as the estimated H-statistics are 0.75 from Model 1 and 0.83 from Model 2. The second study was conducted by Kasman & Turgtlu, (2008) over a period 1996-2004 with a sample of 39 companies. They investigated the evolution of market structure in Turkish non-life insurance sector by using P-R fixed effect model and found that the market concentration is not significantly related with competitive conduct. Coccorsese, (2012) evaluated the degree of competition in case of Italian car insurance market where considerable fine was imposed by the Antitrust Authority in 2000 on 39 companies for their anti-competitive behavior. The panel regression with fixed effect model for a period from 1998 to 2003 established that the fined companies were operating in monopolistic competitive environment with collusive behavior while non fined companies were operating in less than competitive environment. Recently Todorov, (2016) examined the competitive behavior in Bulgarian general insurance industry by calculating H-statistic for a period 2005-2014 through fixed effect panel model for 33 companies. The result revealed a monopoly situation or collusive oligopoly behavior in Bulgaria.

2.3.2 National Scenario

In case of India also Sathye & Sathye, (2004) conducted a research by using SCP approach in banking sector covering a period of 1997 to 1998 with 2,700 branches of State banks operating in seven-states. The result suggests that Indian banking market is competitive and efficient. Sharma & Bal, (2012) found a similar result by using different structural index i.e. concentration ratio, HHI, EI and Gini Index in case of banking sector. Prasad & Ghosh, (2007) also analyzed competition in case of Indian public sector banks using H-statistic for two sub periods 1996-1999 and 2000-2004. They established a monopolistic competition in Indian banking system during that period. Arrawatia & Misra, (2012) also used P-R model to measure the competition of Indian banking sector during 1994-2009 and found similar result with Prasad &

In India the market structure of general insurance sector has experienced a total transformation over a period of 150 years. It crossed a round journey starting from competitive market then monopoly and back to competitive environment again. The aim of all this reform process was to create a competitive environment by enhancing competition so that the players in the insurance sector can use their resources judiciously in order to enhance their financial stability, customer satisfaction, fulfill social needs, improve product offerings, transfer knowledge, advance technology; perk up service quality as well as reduce price (Sapina, 2016).

To see the impacts of these reform processes in the competition of insurance sector Subir & Madheswaran, (2006) and Sneha, (2010) in each of their study analyzed the structure of Indian insurance industry after it went through liberalization phase. They carried out econometric analysis to select the best measure of concentration from a set of eight concentration ratios of the largest firms and HHI index. Their research witnessed the domination of the public entities even after five years of liberalization. Sneha’s finding had also shown that entry of large number of private players has changed the structure of the industry with a declining trend in concentration and increased in competition in the life insurance industry. Sastry, (2012) used various concentration and inequality measures like HHI, CRk, EI, Hall- Tideman Index, Bajo-Sales indices for over all insurance sector and found that concentration is slowly decreasing. Recently Sapina, (2016) also confirmed a decreasing trend in the concentration of general insurance market. She analyzed the growth and market structure of Indian general insurance sector by applying structural measures of concentration in post reform era. The result established a monopolistic competition with a decreasing trend prevailing in Indian general insurance market.
2.4. STUDIES RELATED TO PERFORMANCE

2.4.1. International Scenario

Growth of financial service sector specially banking and insurance sector is crucial for the development of a country’s economy. So it is pertinent to check the soundness of performance of both banking and insurance sector in order to develop the country’s economy. Therefore a large number of studies have been carried out on the financial performance of financial service sector specially in banking and insurance sector. In case of banking sector Purohit & Majumdar, (2003) analyzed the performance of banks in Bangladesh with the help of CAMEL Ratings and Balanced Score Board method. Regarding bank performance, Bonin, Hasan & Wachtel, (2005) in case of transition economies and Patti & Hardy, (2005) in banks of Pakistan have observed that state owned banks are less efficient as compared to foreign owned banks. Patti & Hardy (2005) also reported that new private sector banks are performing better than other. Tarawneh, (2006) compare the financial performance of five commercial Omani banks with more than 260 branches by using ratio analysis. The result confirmed that higher total capital, deposits, credits and total assets does not always mean a better profitability performance of a bank. Rahut, Castellanos & Sahoo, (2010) analyzed the financial performance, the development and growth of bank and non banking financial institutions of Bhutan for a period 1999 - 2008 by using both the traditional and parametric (DEA) approach. They found that the ROE of the financial institutions in Bhutan are comparable to the international banks and concluded that financial institutions in Bhutan are efficient. Rahman, (2016) evaluated the performance of scheduled commercial banks of Bangladesh by using cross sectional data and ratio analysis. The result revealed that most of the bank’s market performance is not satisfactory. They are having undervalued market price per share and also shows poor economic performance.

In case of life insurance sector Cheng & Wong, (2004) studied the determinants of financial health of Asian insurance companies by using firm and macro level data separately. They concluded that firm size, investment performance, liquidity ratio, surplus growth, combine ratio and operating margin significantly affects the financial health of general insurance. On the other hand firm size, change in asset mix, investment performance and change in product mix influence financial health.
of life insurance. Another study done by Akotey, Sackey, Amoah & Manso, (2013) assessed the financial performance of the life insurance industry and identified the major determinants of the profitability of the life insurance industry of Ghana. They found life insurers are incurring large underwriting losses due to overtrading and price undercutting. They also observed that gross premium income has a positive relation with insurer’s sales profitability and negative relation with investment income. In a study done by Derbali, (2014), examines the impact of firm-specific characteristics like size, leverage, tangibility, risk, growth, liquidity and age on performance measured by ROA of eight life insurance companies in Tunisia from a period 2005 to 2012. The analysis of the results from a regression on panel data indicates that the variables height, age and premium growth are the most important determinants of performance of insurance while leverage, tangibility, liquidity and risk companies does not have significant impact on insurance performance. Adams & Buckle, (2003) in case of Bermudian insurance sector found that highly levered, low liquid insurers have comparatively better operational performance than others contradicting the study of Derbali, (2014). It also confirmed that performance of Bermudian insurance was positively related to underwriting risk but not with size and scope of activities. Ikonic, Arsic & Milosevic, (2011) examined the performance of insurance companies in Serbia by applying the CARMEL method and concluded that the level of capital is the determinant of profitability. Malik, (2011) also confirms the result of Ikonic, Arsic & Milosevic, (2011) in case of Pakistan’s insurance companies in terms of capital. Further the result also concluded that profitability of Pakistan’s insurers is significantly and negatively influenced by loss ratio and leverage but not related to age of the insurer.

insurance sector have found a strong relationship between profitability and efficiency.

2.4.2. National Scenario

In national level also performance is analyzed both in banking and insurance sector which are discussed below-

In case of banking sector most of the studies have used CAMEL model for analyzing performance of Indian banking sector (Prasuna, 2003; Bodla & Verma, 2006; Gupta & Kaur, 2008; Dash & Das, 2009; Kaur, 2010; Mishra & Aspal, 2013 and Rao, Dutta & Gupta, 2014). The reason behind may be because CAMEL rating diagnosis the performance in all perspective which helps the banker’s to take precautionary measures for their sustainability (Siva & Natarajan, 2011).

In case of insurance sector performance has been analyzed mostly on the basis of approaches like ratio analysis, efficiency analysis, CARAMEL parameters, frontier efficiency methodology and other innovative techniques. Garg & Deelpti, (2008) in their work on financial performance analysis of 8 general insurers by collecting secondary data for a period of 1994-95 to 2005-06 , with the help of ratio analysis identified NIICL as the best performer among the public companies and RGICL as the best among the private companies. Gosalia, (2008) analyze the financial performance of Indian general insurance industry for a period of 2003 to 2007 employing financial ratios such as claim ratio and combined ratio. He found a decreasing trend in spread between premium underwritten and premium earned by private companies. The result further concluded that public insurers performed better than private companies. Singh & Kumar, (2009) also studied a sample of top five general insurance companies over a period of six years. They used ratio and trend analysis in order to find the performance and growth of general insurance companies. Again Bawa & Kaur, (2011) examined the performance of 10 Indian general insurance companies through frontier efficiency methodology DEA for a period of 8 years from 2002-03 to 2009-10 and concluded that, among the public companies NICL is the most efficient and the private sector has also started increasing return to scale over the years. Cynthia & Nagarajan, (2011) in their research on performance evaluation of the UIACL used trend analysis of different factors affecting performance like growth rate of premium, claims incurred,
settlements of claims, expenditure etc. On the other hand Darzi, (2011) in his study on financial performance of insurance industry in post liberalization era has applied CARAMEL parameters to analyse the financial performance and associate these parameters with the solvency margin of insurance companies. Charumurti, (2012) tried to identify the factors determining the profitability of Indian life insurance sector by collecting data from all 23 life insurance companies for a period 2008 to 2011. The study used ROA as depended variable and leverage, size, equity capital, premium growth, underwriting risk and liquidity as independent variable. The result shows that size and liquidity are positively influenced the profitability and leverage, equity capital and premium growth negatively influences but underwriting risk and profitability has no relationship. A similar work conducted by Bawa & Chattha, (2013), tried to examine the financial performance of Indian life insurers through financial ratios including liquidity, solvency, profitability and leverage. The sample consists of 18 life insurers including 1 public and 17 private for a period from 2007 to 2012. To measure the impact of liquidity, size, solvency, leverage, equity capital on profitability they used multiple linear regression model. They also found that profitability of life insurers is positively influenced by liquidity and size and negatively related with capital. Further profitability does not show any relationship with solvency and leverage. Kumari, (2013) analyzed the financial performance of life insurance industry through ratio analysis and observed a significant increase in the overall business performance of Indian life insurance industry after globalization. Ansari & Fola, (2014) also investigated financial soundness and performance of Indian life insurance industry by employing CARAMEL model for a period 2008-2013. They showed sound financial performance of Indian life insurance and confirmed significant differences in CARAMEL indicators for both public and private companies. Rani & Shankar, (2014) measured the financial performance of public general insurance companies of India for a period 2003 to 2013 by using two indicators of CARAMEL model i.e. capital adequacy and asset quality. They found NICL as the best performing companies than others. Dar & Bhat, (2015) examined the financial performance and soundness of selected private as well as public life insurance companies of India by calculating three indicators of CARAMEL model i.e. capital adequacy, profitability and earnings and liquidity. They found no significant difference in public and private companies in terms of all the three indicators. In terms of capital adequacy they found private sector performed well and
in terms of earnings, profitability and liquidity public sector companies were performed better than private sector companies. Dar & Thakur, (2015) compared the financial performance of public and private non life insurance by using three indicator of CARAMEL model i.e. capital adequacy, management efficiency and liquidity with the help of ratio analysis. According to them both public and private companies are not maintaining standard liquid position and the underwriting performance of public sector is better than private sector.

2.5. STUDIES RELATED TO EFFICIENCY

Efficiency can be assessed by using three main method, ratio analysis, parametric and non parametric method. Efficiency of insurance has often measured by key ratios such as expenses and claims ratios, solvency margin, combine ratio, technical reserve ratio, liquidity ratio, and the return on invested asset. It is the simplest method of analyzing efficiency. It evaluates only a few indicators and cannot influence the overall efficiency of an industry. Thus frontier efficiency techniques are considered superior to traditional financial ratio analysis; since they measure firm performance by incorporating different variables in a single measure that controls for differences among firms (Cummins & Weiss, 2000 and Huang & Eling, 2013). Frontier efficiency analysis includes parametric and non parametric method of analyzing efficiency. Parametric method of efficiency measurement includes Stochastic Frontier Approach (SFA), Thick Frontier Approach (TFA) and Distribution Free Approach (DFA). Nonparametric methods include Data Envelopment Analysis (DEA) and the Free Disposal Hull (FDH). It involves mainly the use of linear programming techniques to analyze the technical efficiency of firms. Though there is no superiority in the methodologies of efficiency but DEA has been used frequently in most of the studies on insurance (Berger & Humphrey, 1997; Cummins & Weiss, 2000; Luhen, 2009 and Huang & Eling, 2013) and also it is non-parametric and hence does not require functional form in advance and can handle small sample size (Iqbal & Awan, 2015). Further in a survey carried on by Luhen, (2009), it is found that out of 93 studies reviewed, DEA has been applied in 54 studies i.e., 58 per cent of the total research done on insurance. This fact indicates DEA’s significance, popularity and relevance in efficiency analyses of insurance industry.
On the basis of these methods specially using frontier techniques many researchers in banking as well as in insurance sector have studied the efficiency in international and national level which are discussed below-

2.5.1. International Scenario

Chen, Skuly & Brown, (2005) calculated the cost, technical and allocative efficiency of 43 Chinese banks over a period 1993 to 2000 by employing DEA to identify the change in Chinese bank’s efficiency due to deregulation. They showed that large state-owned banks and smaller banks are more efficient than medium sized Chinese banks. They concluded that though the technical efficiency consistently dominates the allocative efficiency but due to deregulation technical, allocative and cost efficiency of Chinese bank have improved a lot. Abidin & Cabanda, (2006) assessed the efficiency of bank performance in Indonesia during pre and post financial crisis by using DEA and financial ratios. Both the result calculated by DEA and ratio analysis was robust and consistent. The results revealed that foreign banks were efficient than domestic banks and bigger banks tend to be more efficient than small ones. A similar result was found regarding foreign and domestic banks in case of transitional (Bonin, Hasan & Wachtel, 2005), developing countries like India (Bhattacharyya, Lovell & Sahay, 1997) Turkey (Isik & Hassan, 2002) and developed country like Poland (Havrylchyk, 2006). Arief & Can, (2008) investigate cost and profit efficiency of 28 Chinese commercial banks using a non-parametric technique for data from 1995 to 2004. The study evaluates the influence of ownership type, size, risk profile, profitability and key environmental changes on the bank efficiency using a Tobit regression. The result showed that cost efficiency scores are higher than profit efficiency scores thus suggests that the most important inefficiencies are on the revenue side. They also found that joint stock banks are more efficient than state owned banks. Majeed & Zanib, (2016) analyzed the efficiency of full-fledged Islamic banks, Islamic branches of conventional banks and conventional banks in Pakistan by using DEA from 2007-2014. They found overall, full-fledged Islamic banks are less efficient in terms of total technical efficiency and pure technical efficiency than conventional banks. However, Islamic branches of conventional banks are highly scale-efficient than their counterparts.
Using a cross-country analysis, Vencapa, (2009) used SFA to measure and decompose productivity growth in European insurance over a period 1995-2003. They concluded that life insurers have slightly higher technical efficiency than non life companies and life, non life both companies were generating some growth from scale economies and increase technical efficiency. Hwang & Kao, (2006) utilized the two stage DEA model, measured marketability in the first stage and the profitability in the second stage. The sample size consists of 24 non life insurers of Taiwan for the period 2001-2002. An interesting finding was that company which had efficiency in the traditional one stage could never achieve efficiency both in the marketability and profitability stages. Moreover they found similar efficiency scores between domestic and foreign insurers having different sizes or scales. Huang, (2007) made a investigation on Taiwan life insurance companies using DEA and Tobit regression over the period 1996- 2003. Their findings showed that family controlled was more efficient than foreign branch office. They concluded that proportion of directors and supervisors shareholding generally had positive relation with efficiency but not statistically significant. Eling & Luhnen, (2008) examined 4,372 life and non life insurance companies from 98 countries for the period 2002 to 2006 with the help of both DEA and SFA model. Their result portrayed Denmark and Japan as the highest efficient country while the Philippine was the least efficient. It was also found that mutual companies were more efficient than stock companies.

2.5.2. National Scenario

So far efficiency analyses are concerned in India most of the works are found in banking sector and a few works are found on insurance sector which are discussed below-

The literature related to efficiency analysis of banking sector mostly employed frontier technique DEA (Das & Ghosh, 2006; Das & Ghosh, 2009 and Singh, 2014) and SFA (Bhattayyacharji & Pal, 2013). While Das & Ghosh, (2006) had found medium size bank to be more efficient Sing, (2014) established small size bank to be more efficient. The researchers also regressed the efficiency score of banks with a set of variables to identify a link between them in order to make the inefficient company efficient (Das & Ghosh, 2009)
In case of insurance sector Sinha, (2007) examined the performance of Indian life insurance companies from 2003 to 2006 by using DEA. He also focused upon the sale of new life insurance policies, market share, market trend and its growth. The results revealed that mean technical efficiency score was showing fluctuating trend during the study period. Bawa & Kaur, (2011) in their work on performance measurement of Indian general insurance sector employed frontier efficiency methodology DEA in order to find performance of public and private general insurance companies of India by examining panel data. For DEA they used claim incurred as output and premium income and investment income as inputs with a sample of 10 general insurance companies for a period of 8 years from 2002-03 to 2009-10. They concluded that in case of general insurance, among the public companies NICL is the most efficient company. Nandi, (2014) studied efficiency of 13 Indian life insurers through DEA from 2002-03 to 2011-12. Results showed that life insurers carrying only life business on an average scored technical efficiency of 82.6 per cent, pure technical efficiency 87.5 per cent and scale efficiency of 94.7 per cent. LIC was showing more pure technical efficiency and scale efficiency than others. Bawa & Bhagat, (2015) tried to determine the efficiency of life insurance companies by examining 13 life insurance companies for a period 2006 to 2013 with the help of state level data. They found LIC to be efficient in all the years and among private life insurance companies Aviva and SBI were found to be efficient in the first four years of the study period. Thus the result supports the findings of Nandi, (2014). Rao & Venkateswarlu, (2014) measured the efficiency of private non-life insurance companies from 2008 to 2013 by using Stochastic Frontier Analysis. Bharati AXA is found to be more efficient than all other companies. It is also found that the mean efficiency score of companies are increasing over the study period.

### 2.6. STUDIES RELATED TO SCP RELATIONSHIP

#### 2.6.1. International Scenario

In international level many studies in banking as well as insurance sector are conducted on SCP relationship specially in United States and European countries and a few in other countries which are reviewed below-

In case of banking sector Gilbert (1984) had done a major survey on the literature of SCP relationship and found, out of 44 studies reviewed on US banking industry, 32
studies have supported for the SCP hypothesis. The researchers who have established SCP hypothesis in banking sector are Heggestad & Mingo (1977), Spellman (1981), and Berger & Hannan, (1998) and ES hypothesis was supported by other researches such as Brozen, (1982); Smirlock, (1985); Jackson, (1992); Berger (1995); Goldberg & Rai (1996); Evanoff & Fortier (1998) and Seelanatha, (2010). Maudos, (1998) in his study of Spanish banking sector for a period 1990-1993 indicated an inclusive result for SCP & ES hypotheses.

Earlier the effect of efficiency on SCP relationship was not considered but recently it has been considered in most of the studies of banking sector. Significant among them are Gilbert, (1984); Smirlock, (1985); Evanoff & Fortier (1988); Lloyd-Williams, Molyneux & Thornton (1994), Molyneux & Forbes, (1995); Berg & Kim, (1994); Berger, (1995); Goldberg & Rai, (1996); Berger & Hannan, (1998); Maudos (1998); Sathye & Sathye, (2004) and Seelanatha, (2010). However these studies differ in efficiency measure, some had estimated directly and other had estimated indirectly i.e. by using proxy variable. In early studies market share was used as a proxy value for efficiency rather than the direct measure of efficiency. Molyneux & Forbes, (1995) and Berger, (1995) have first incorporated direct method of efficiency measure to study the relationship of market structure, efficiency and performance.

In case of insurance sector most of the studies on SCP relationship have been carried out in United State (US) but they found different results for different insurance lines. Carrol, (1993) observed no support for both the SCP and ES hypotheses in case of workers compensation insurance of US. Chidambaram, Pugel & Saunders, (1997) in their study of performance of US property liability insurance industry concluded that concentration ratio for the line and the share of direct writers in the line are both significant determinants of performance. Bejtelsmit & Bouzouita, (1998) in case of US private passenger automobile insurance industry determined a strong positive relationship between profitability and concentration. Choi & Weiss, (2005) in their research of US property liability insurance industry confirmed a positive support for ES hypothesis. Again Weiss & Choi, (2008) for US auto insurance could not establish a positive support for SCP and ES hypotheses but they established positive support for RMP hypothesis in competitive and non stringently regulated states. Another work undertaken by Liebenberg & Kamerschen, (2008) to investigate the relationship among structure, conduct and performance of South African auto
insurance market for a period of 1980-2000. They also could not ascertain a positive support for SCP hypothesis. Pope & Ma, (2008) in a research on market structure and performance relationship in the international insurance sector determined that the effect of market concentration on insurance market profitability varies depending on the level of market liberalization. They also found that high barriers to entry for foreign competitors facilitate more concentrated market and indulge in collusive behavior. Berry-Stolzle, Weiss & Wende, (2011) in their work on efficiency, structure and performance relationship of European property-liability insurance established a strong support for efficient structure hypothesis, and extremely little or no support for the SCP and RMP hypotheses. On the other hand Njegomir & Stojic, (2011) analyzed non-life insurers of Eastern European countries from 2004 to 2008 and discovered prevailing of SCP hypothesis in general insurance industry of Eastern European countries. Kaonga, 2015 studied Zambia insurance industry by using simultaneous equation and found no support for SCP hypothesis. Alhassan, Addisson & Aswamoah, (2015) tested SCP relationship for both life and non life insurance of Ghana and determined supports for ES hypothesis both for life and non life insurance market of Ghana.

In the context of the SCP & ES hypotheses in insurance sector Carrol, (1993) in his study of private worker’s compensation market collected panel data for a period of 8 years, covering 29 different states of US by applying the regression model developed by Clark & Device tested SCP and ES hypotheses. Bejtelsmit & Bouzouita, (1998) examined the relationship between profitability and concentration of US private passenger automobile insurance by analyzing the data aggregated to state level over a period of 1984-1992 with a sample size covering 50 US states, selected on the basis of non random convenience sampling technique by using multiple regression models. Carrol, (1993) and Bejtelsmit & Bouzouita, (1998) were the first to introduce the effect of efficiency on performance in case of insurance sector. However, they employed an indirect measure of efficiency. They applied direct writer market share as a proxy for efficiency. Lai & Limpaphayom, (2003) applied a number of multiple regression models to examine the relationship between organizational structure and firm’s financial behavior on a sample size consists of 26 nonlife insurers of Japan for the period of 1983 to 1994. Choi & Weiss, (2005) in their work on US property liability insurance used multiple regression model and a

2.6.2. National Scenario

In national level we found a very few literature only in banking sector that have been conducted to analyze the relationship among market structure, performance and efficiency which are explained below-

Sathye & Sathye, (2004) has conducted a study on structure, conduct and performance relationship in case of Indian banking sector by applying direct measure of efficiency. They employed a multiple regression model and calculated efficiency by using DEA. They found a positive relationship between efficiency and performance in Indian banking sector and rejected the traditional SCP hypothesis. Verma & Sainir, (2010) also ascertained a similar result in the context of Indian banking sector by strongly contradicting the traditional SCP hypothesis and

2.7. CONCLUSION

Research studies across various economies indicate a positive relationship between development of insurance sector and economic growth. But particularly very few studies are conducted in the context of Indian insurance sector where the recent metamorphosis has posed open challenges to the insurance companies in maintaining their growth and market structure. Further in case of Indian general insurance no study is found where both structural and non structural methods were used for measuring market structure. From the above review it can be concluded that studies those applied P-R model have a prevailing outcome of monopolistic competition both in case of banking and insurance sector. The P-R model has been extensively used in banking sector but scantily applied in general insurance sector, and most of them are from abroad. All the literature in general insurance have used almost similar variables, both depended and independent.

Again, though a large number of studies have analyzed the performance of banking and insurance sector in national and international level a few research identified the determines of profitability of banking as well as life insurance sector but no literature is found which has determined the influence of CARAMEL indicators on market share in case of general insurance sector of India.
In the international level though a large number of research have been carried out on the relationship among market structure, efficiency and performance based on the hypotheses SCP, RMP and ES specially in case of banking and insurance sector but in national level only a few are found in banking sector. No literature is found in case of general insurance sector of India testing the relationships among market structure, efficiency and performance, which indicates a geographical gap in the extant literature. The review of this literature also indicates inconsistency in findings, application of methodology such as DEA, SFA, multiple regression, simple regression etc. and use of variables like proxy value or direct measure.
Reference:


