CHAPTER-V

FINDINGS, SUGGESTIONS AND RECOMMENDATIONS

The chapter has been divided into two sections. **Section I** provides information about the major findings emerging from the study as well as its implementations and **section II** makes an attempt to provide some suggestions and recommendations so as to improve the efficiency and financial soundness of the Indian life insurance industry.

SECTION-I

FINDINGS

Insurance is defined as a co-operative device to spread the loss caused by a particular risk over a number of persons who are exposed to it and who agree to ensure themselves against that risk. Every risk involves the loss of one or other kind. The function of insurance is to spread the loss over a large number of persons who have agreed to co-operate each other at the time of loss. Liberalization of insurance industry leading to entry of private life insurance companies has helped in expansion of market during post-liberalized era. The life insurance market has also become healthier due to a number of regulatory initiatives of IRDA. There is a significant improvement in insurance literacy, information dissemination and informed decision making by the consumers. Moreover, product diversification has provided a wider choice to the consumers to select need based products. Increase in the number of trained agents and entry of corporate agents and brokers has provided a new impetus to channel management and distribution leading to life insurance penetration in wider segments of the market. All these developments have been reflected in higher sales and better growth of life insurance business. During the last decade, combinations of these factors along with strong economic growth, have positioned India as a regional insurance hub and now aspire to become an international financial centre.

The present study has particularly been undertaken to gain insight into the efficiency of Indian life insurance companies. In total, thirteen life insurance companies have been selected for the study. Among them, one is Life Insurance Corporation of India and
remaining twelve are those private players who have started their operations till 2002. In this context, CARAMEL parameters were analyzed to study operational efficiency in terms of Capital Adequacy, Asset Quality, Reinsurance and Actuarial issues, Management Soundness, Earnings & Profitability and Liquidity of life insurance companies. It was done to make the study helpful in formulating an effective financial strategy and risk management policy. In addition, the study has embarked the usage of Data Envelopment Analysis for the life insurers using New Cost, New Revenue and New Profit Efficiency models. Therefore, major findings emerging from the study are as under:

**Operational Efficiency of Life Insurance Companies in India: CARAMEL Model**

It includes the use of those quantitative factors which affect the financial position of a life insurance company. Only those parameters which are relevant for the study are shortlisted. The selection is made on the basis of analytical significance, data availability for compilation and calculation. Conclusions emerging from each parameter are summarized below:

**Share Capital to Mathematical Reserves Ratio:**

Uniform maintenance of mathematical reserves out of share capital by life insurance companies is clearly visible as maximum number of companies i.e. five (MAX-LIFE, HSLIC, BAJAJ-ALLIANZ, KOTAK MAHINDRA and TATA-AIA) among the selected twelve have performed consistently throughout the study period. Three life insurance companies namely RELIANCE, MET-LIFE and AVIVA are recognized as inconsistent performer in terms of mathematical reserves to share capital ratio. It is because the coefficient of variation calculated for these companies is the highest among all life insurance players. However, it is concluded that two life insurers namely BAJAJ-ALLIANZ and OM KOTAK have adequate balance of capital as these companies are enjoying consistent high mathematical reserves to share capital ratio throughout the study period.

**Share Capital to Total Assets Ratio:**

One interesting point that comes to light from this ratio is that AVIVA has higher share capital to total assets ratio throughout the study period. This clarifies towards the efficiency of AVIVA life insurance in terms of its capital adequacy to meet the requirement of assets
and hence, stood at top most position in CARAMEL ratings. Four other life insurers (BSLIC, IPLIC, MAX-LIFE and BAJAJ-ALLIANZ) have also reflected consistent behavior in financing their assets out of share capital. So, in total above stated five life insurers behaved consistently. MET-LIFE is the most inconsistent player in terms of share capital to total assets ratio.

**CARAMEL Ratings in Capital Adequacy:**

Share capital to mathematical reserves ratio and share capital to total assets ratio of capital adequacy fitted in CARAMEL framework indicates that AVIVA was at top position followed by BAJAJ-ALLIANZ and RELIANCE. SBI-LIFE stood at the last position due to its poor performance in both ratios.

**Asset Quality Ratio:**

More volatility in asset quality ratio is observed in respect of MET-LIFE insurance company followed by ING-VYSYA and SBI-LIFE. Least fluctuations are found in respect of five life insurers namely BSLIC, IPLIC, MAX LIFE, BAJAJ-ALLIANZ and AVIVA respectively. Again same five insurers which have stability in their operations in terms of share capital to total assets ratio are concluded to be consistent here in this ratio as well. AVIVA life insurance consistently has highest average asset quality ratio with first rank. Therefore, it is concluded to be the best performer in terms of asset quality ratio and hence it can be said that AVIVA is that company which is having sound and quality asset portfolio.

**Risk Retention Ratio:**

Good risk bearing ability of life insurers is highlighted from the risk retention ratio because most of the companies i.e. eight have behaved consistently. These eight companies which are found to be more consistent risk bearers than other insurers are LIC, BSLIC, IPLIC, MAX-LIFE, ING-VYSYA, BAJAJ-ALLIANZ, SBI-LIFE and AVIVA. Among the above said eight companies, LIC along with five other private sector life insurance companies namely IPLIC, ING-VYSYA, BAJAJ-ALLIANZ, SBI-LIFE and AVIVA are considered as better performer than rest of the companies because these companies have consistently retained more business. As far as rankings of CARAMEL parameter are concerned, first position is
assigned to LIC followed by SBI-LIFE and last to BSLIC. It depicts growing capability of these companies to handle risk efficiently.

**Mathematical Reserves to Average of Net Premium Received in Last Three Years Ratio:**
It is found that most of the companies (eight out of thirteen) are maintaining consistent reserves. Those eight insurers are LIC, BSLIC, MAX-LIFE, HSLIC, ING-VYSYA, RELIANCE, SBI-LIFE and MET-LIFE whereas the most inconsistent reserves are maintained by BAJAJ-ALLIANZ. An important point to be noted here is that five life insurers namely RELIANCE, SBI-LIFE, MET-LIFE, HSLIC and BSLIC has maintained higher average ratio (having higher ranks from one to five as well) with consistency throughout the study period. This indicates towards good position of reserves with these companies in order to meet unforeseen claims. KOTAK MAHINDRA maintained lowest average ratio of mathematical reserve to average of net premium received in last three years and that too in a non uniform pattern.

**CARAMEL Ratings in Reinsurance and Acturial Issues:**
CARAMEL ratings in respect of reinsurance and acturial issues of Indian life insurance companies highlighted SBI-LIFE as the top most performers, followed by RELIANCE, IPLIC and LIC respectively. This highlights that these companies are having enough reserves and therefore are able to handle risk more efficiently. KOTAK- MAHINDRA positioned at last in respect of reinsurance and acturial issues followed by TATA-AIA.

**Management Soundness Ratio:**
Management Soundness ratio is observed to be consistent in respect of two life insurers i.e. LIC and BSLIC whereas inconsistency in the ratio is observed for five life insurers. The name of those five life insurers are ING-VYSYA, RELIANCE, BAJAJ-ALLIANZ, MET-LIFE and AVIVA. In total, it can be concluded that LIC consistently incurred minimum operating expenses to earn premium and hence has low management soundness ratio with rank first in CARAMEL ratings. Along with LIC, the same picture is observed for BSLIC which is a private player. This reveals that these companies are managing their operations effectively along with proper utilization of funds.
Operating Expenses to Net Premium Ratio:

Four life insurance companies have incurred uniform operating expenses in order to earn net premium. The names of those four companies are LIC, BSLIC, IPLIC and TATA AIA. The important point observed here is that, LIC is having minimum operating expenses to net premium ratio with low coefficient of variation. This highlights towards the cost-effective operations of Life Insurance Corporation of India. As far as, the most inconsistent players are concerned these are RELIANCE, MET-LIFE and AVIVA. The above listed three players have also incurred higher expenses along with inconsistency.

Commission to Net Premium Ratio:

The only life insurer which is found to be the most consistent performer in context of commission to net premium ratio is LIC. As far as consistency for private sector is concerned, it is observed in respect of BSLIC, MAX LIFE, HSLIC and SBI-LIFE insurance company. Three life insurers the performance of which fluctuate the most in terms of commission to net premium ratio are RELIANCE and MET-LIFE and AVIVA.

Other Expenses to net Premium Ratio:

More Stability in other expenses to net premium ratio is reported in respect of four life insurers i.e. BSLIC, MAX-LIFE, BAJAJ-ALLIANZ and TATA-AIA. Among the above listed four life insurers, three companies also have minimum average ratio as well. This is the indicator of cost-effective operations of these three life insurance players namely BSLIC, BAJAJ-ALLIANZ and TATA-AIA. More fluctuations in ratio are observed for three life insurers namely HSLIC, RELIANCE and MET-LIFE. Among all, RELIANCE is found to be least cost effective, as it incurred higher expenses and that too, in a volatile manner.

Expenses Ratio:

LIC and BSLIC have proved themselves to be the consistent performer in terms of expense ratio, LIC positioned at first rank in CARAMEL ratings as well. These companies incurred minimum expenses with least variability. It highlights towards the financial soundness of the above stated two life insurers. Five out of thirteen life insurers are having high level of variations which highlight towards their non uniform pattern of cost control. These five
insurers are ING-VYSYA, RELIANCE, BAJAJ-ALLIANZ, MET-LIFE and AVIVA. RELIANCE, MET-LIFE and AVIVA have also incurred heavily with thirteenth, twelfth and eleventh rank respectively. Rest of the insurers have incurred moderate expenses in order to generate premium. In total, analysis of expense ratio reveals that higher costs are incurred in initial years attributed to costs incurred on establishing business and networks whereas a stable tendency is seen as study progressed further.

**Return on Policyholder’s Investments:**

Least variations in returns from policyholder’s investments are observed in case of five life insurers namely LIC, MAX-LIFE, BSLIC, KOTAK-MAHINDRA and AVIVA. Two private sector companies which earned most inconsistent return on policyholder’s investment are RELIANCE and MET-LIFE. Two private sector companies are concluded to be the best performers in terms of policyholder’s investments return and those two companies are BSLIC and AVIVA. It is because these two companies have earned maximum average return on policyholder’s investments with least volatility.

**Return on Shareholder’s Investments:**

Highest volatility in return on shareholder’s investment is observed in respect of ING-VYSYA. It depicts the inconsistent pattern of returns earned by ING-VYSYA on shareholder’s funds. In spite of low returns, uniformity in earning from shareholders investments is observed in case of four life insurance companies namely LIC, BSLIC, MAX-LIFE and SBI-LIFE. Comparatively more fluctuations in return from shareholders investment for rest of the life insurers are observed.

**Return on Total Investments:**

Investment income has always been a major source of income for insurers to write off underwriting losses. It used to be quite good in quantum earlier but now a marginal decrease is witnessed in it. Hence, focus on profitability of life insurers is required. LIC is the only consistent player in terms of return on investment among all life insurers. However, average return earned by LIC is low, but it is uniform as well because four life insurers namely IPLIC, RELIANCE, BAJAJ-ALLIANZ and MET-LIFE are observed to be the most inconsistent earners of return on investments. Along with earning highest average return on
investment, RELIANCE is also having highest volatility which signifies its higher but inconsistent returns. As far as CARAMEL ratings are concerned, BSLIC is placed at first rank followed by AVIVA whereas last position is acquired by LIC.

**Return on Equity:**

Least variations in return on equity for seven out of thirteen companies are observed whereas volatility is highest in respect of BAJAJ-ALLIANZ. Therefore, it can be said that BAJAJ-ALLIANZ not only earned maximum in terms of return on equity but it has most inconsistent returns as well. The important point observed in respect of return on equity is the performance of SBI-LIFE. It is the only insurer enjoying high average return with less fluctuations and second rank in CARAMEL ratings as well. As far as the performance of LIC is concerned, it is also good as it is earning high average return on equity throughout the study period with first position.

**CARAMEL Ratings in Earning and Profitability:**

LIC along with BSLIC stood at first position in terms of earning and profitability. Among private players second place is held by HSLIC, BAJAJ-ALLIANZ and SBI-LIFE insurance company. MET-LIFE stood at last position holding eighth rank followed by RELIANCE and TATA-AIA on seventh rank. This indicates that these companies are earning less as compared to other insurers.

**Liquidity Ratio:**

Companies having highest average liquidity ratio are more volatile as well. This high volatility creates doubt for their liquidity status. It highlights that, although the margin between current assets and current liabilities is low but is inconsistent as well. Eight out of thirteen life insurers are enjoying the uniform liquidity status throughout the study period. Out of above said eight companies, two life insurers namely LIC and KOTAK-MAHINDRA are having better average liquidity ratio as well holding first and second rank. So, all in all, it can be said that these two companies are enjoying the status of being highly liquid.

**Solvency Ratio:**

LIC and MET-LIFE have low solvency ratio along with consistency. Therefore, these two companies are concluded to be solvent throughout the study period. Least volatility is
observed for three life insures namely LIC, TATA-AIA and MET-LIFE where as it is maximum in respect of five life insurance players i.e. IPLIC, MAX-LIFE, RELIANCE, BAJAJ-ALLIANZ and SBI-LIFE.

**Overall Performance: Composite Ranking from CARAMEL Model:**

Composite ranking from CARAMEL model reveals that AVIVA holds topmost position in capital adequacy and SBI- LIFE is at last position. AVIVA again is observed to be at top most position with SBI-LIFE at lower most position in asset quality. The picture of SBI-LIFE is completely reversed in reinsurance and acturial issues. Here, it occupies higher most place. First position is acquired by LIC with highest average management soundness ratio followed by SBI-LIFE and IPLIC respectively. As far as earning & profitability ratios are concerned, first position is held by LIC and BSLIC and MET-LIFE is at last position. Considering liquidity status, LIC again is found to be at first place followed by KOTAK MAHINDRA. At last, from the average ratio of all parameters, it is concluded that, LIC is at top most position in the Indian life insurance industry. Among private sector life insurance companies AVIVA stood at first position holding second rank followed by SBI-LIFE and BSLIC. MET-LIFE is at bottom most position holding eleventh rank followed by MAX-LIFE.

**Revenue Efficiency of Life Insurance Companies in India:**

Revenue efficiency is computed as the ratio of the revenues of a given decision making unit to the revenues of a fully efficient decision making unit with the same input vector and output prices. Revenue efficiency of life insurance companies is calculated for seven years (from 2005-06 to 2011-12) using New Revenue (V) Approach of DEA. The variables selected for computing Revenue Efficiency are Commission and Operating expenses as inputs, Number of polices as output and Sum assured per policy as Price. Revenue efficiency scores so arrived, are further categorized in two four parts: Highly Efficient (0.75 to 1), Efficient (0.50 to 0.75), Low Efficient (0.25 to 0.50) and Least Efficient (Up to 0.25). On the basis of above mentioned categories, following results are drawn:

During the year **2005-06**, LIC, RELIANCE, KOTAK- MAHINDRA, IPLIC, MAX- LIFE and HSLIC are found to be highly efficient having efficiency score in the higher most range
and efficiency score of four life insurers namely BSLIC, SBI-LIFE, TATA-AIA and MET-LIFE ranges between 0.50 to 0.75 & hence are termed as efficient companies. Therefore, it can be said that, ten among thirteen life insurers are revenue efficient during the year 2005-06. The number of companies having low level of revenue efficiency is only three namely ING-VYSYA, BAJAJ-ALLIANZ and AVIVA. Overall, revenue efficiency is high during this year.

During 2006-07, least efficiency of AVIVA is highlighted as this DMU’s falls in the minimum range of up to 0.25 of revenue efficiency score. Five life insurance players naming LIC, MAX- LIFE, HSLIC, KOTAK-MAHINDRA and MET-LIFE are more efficient than other private sector life insurance companies as these are lying in the uppermost range of efficiency level which is Highly Efficient. Other efficient insurers are BSLIC, IPLIC, ING-VYSYA, SBI-LIFE and TATA-AIA. In total, ten life insurers are observed to be revenue efficient who are having efficiency score greater than 0.50.

Eight life insurers out of selected thirteen are found to be highly efficient during the financial year 2007-2008. These eight DMU’s include LIC, BSLIC, IPLIC, MAX-LIFE, HSLIC, ING-VYSYA, KOTAK-MAHINDRA, and TATA-AIA. Four more life insurers have emerged as efficient insurers including BAJAJ-ALLINAZ, SBI-LIFE, MET-LIFE and AVIVA. All in all, twelve companies have reported their status of being revenue efficient during 2007-08. Only RELIANCE is observed to have low efficiency level and not even a single life insurer is found to be least efficient during this year.

Maximum number of companies are found to be highly revenue efficient during the year 2008-2009. The list of highly efficient life insurers includes the name of nine life insurance companies i.e. LIC, BSLIC, IPLIC, MAX-LIFE, ING-VYSYA, SBI-LIFE, KOTAK-MAHINDRA, TATA-AIA and AVIVA. However, the score of three life insurance companies has a range of 0.50 to 0.75 which indicates that these companies are efficient. The names of those three companies are HSLIC, BAJAJ-ALLIANZ and MET-LIFE. Therefore, it would be right to say that the revenue efficiency level of the industry was high during 2008-09 as only RELIANCE life insurance company was found to be least revenue efficient during
the financial year 2008-09. Efficiency level of RELIANCE has decreased during this year to Least Efficient from Low Efficient in the previous year.

Most of the life insurance companies i.e. ten among thirteen are found to be highly efficient during 2009-10 as their efficiency score lies in the range of 0.75 and above. Among ten highly efficient companies, nine belong to private sector and one is LIC. Two more companies namely SBI-LIFE and MET-LIFE are observed to be efficient during this year. Total number of revenue efficient companies continued to remain twelve in the year 2009-10. Efficiency level of RELIANCE has also raised and reached at low. Not even a single life insurer was observed to have score in the range of least efficiency score.

In the year 2010-11, nine life insurance companies lie in the range of 0.75 and above, which indicates that these companies are highly efficient. Three efficient life insures whose score has a range of 0.50 to 0.75 are MAX LIFE, HSLIC and TATA-AIA. Therefore, total revenue efficient companies are twelve during this year too. No life insurer is found to be least efficient whereas low efficiency level is observed in respect of RELIANCE.

LIC, BSLIC, IPLIC, HSLIC, ING-VYSYA, BAJAJ-ALLIANZ, KOTAK- MAHINDRA, MET-LIFE and AVIVA are those nine life insurers which are found to have high efficiency level during financial year 2011-12. Along with these nine players, three more players are observed to be efficient. These are MAX LIFE, SBI-LIFE and TATA-AIA. RELIANCE continued to have low level of efficiency. As far as the revenue efficiency score below 0.25 is concerned, none of the insurer is observed to have the same.

**Overall Performance of Life Insurers Based on Revenue Efficiency Scores:**

Among all life insurance players, Life Insurance Corporation of India stabilized itself at revenue efficiency score of one during seven years of study and became the only player who performed consistently. Performance of rest of the life insurers fluctuated and recorded as Improved, Consistent and Deteriorated. Out of twelve private life insurance companies, three (BAJAJ-ALLIANZ, MET-LIFE, AVIVA) registered a rise in revenue efficiency score for more than three years and signified themselves as those players whose performance has improved. As far as deteriorate performers are concerned, three life insurers come under this list. BSLIC, MAX-LIFE and RELIANCE are those companies whose performance went
down. Remaining six life insurers performed consistently and are expected to grow over the years.

**To sum up,** in order to analyze the revenue efficient companies, new revenue efficiency model of DEA is applied to data set and thus the score is calculated. Considering year to year performance in terms of revenue efficiency score and starting from the first year i.e. 2005-06, six life insurers namely LIC, RELIANCE, KOTAK MAHINDRA, IPLIC, MAX LIFE and HSLIC have recorded their status of being highly efficient as the revenue efficiency score for all the companies have a range of 0.75 to one. In the next consecutive year (2006-07), the number decreased to five and includes LIC, RELIANCE, KOTAK MAHINDRA, IPLIC, MAX LIFE and HSLIC life insurers. The number of revenue efficient companies remains the same in the next year (2007-08). The names of companies were also the same but MET-LIFE replaced RELIANCE. The number leapt to nine by the end of next financial year. Those nine life insurers are LIC, BSLIC, IPLIC, MAX LIFE, ING-VYSYA, SBI-LIFE, KOTAK MAHINDRA, TATA-AIA and AVIVA. The number further increased to ten by 2009-10 with the addition of HSLIC, BAJAJ-ALLIANZ and drop of SBI-LIFE from this range of cost-efficiency score. A slight dip in the number of revenue efficient companies is observed in next financial year i.e. 2010-11. The number dropped to nine in this year. The number continued to remain nine in the year 2011-12. Therefore, it can be said that, although a large number of companies were observed to be lying in the upper range of revenue efficiency score but only two life insurers namely LIC and KOTAK MAHINDRA consistently remained in the slab of highly efficient companies. Two more companies i.e. BSLIC and IPLIC were also observed to be in same range except first two years of study period.

**Cost Efficiency of Life Insurance Companies in India:**

Cost efficiency of a productive enterprise is an important indicator of its performance. The cost efficiency of a firm is defined by the ratio of minimum costs to actual costs for a given output vector and is computed by measuring the distance of its observed (Cost) point from an idealized cost frontier. Inputs used for calculating cost efficiency scores include number of agents and number of offices taking commission expenses and operating expenses as its cost where as sum assured is considered as output. Thereafter, DEA-Solver Pro5.0 / New Cost (V) model is applied to arrive at the results which are in the form of cost efficiency.
score. Cost efficiency score reveals that how efficiently the DMU’s are managing their cost. Higher score represents greater efficiency. This score is categorized in the same manner as is revenue efficiency score. Therefore, the concluded results for the year 2005-06 to 2011-12 are as follows:

During the financial year 2005-06, four life insurance companies namely LIC, RELIANCE, KOTAK-MAHINDRA and MET-LIFE are enjoying the status of being highly efficient decision making units because their cost efficiency score is more than 0.75 whereas score of six life insurers ranges between 0.50 and 0.75, hence are termed as efficient DMU’s. To sum up, ten among thirteen life insurers are emerged as cost efficient during 2005-06. Further, three life insurance players are found to have low efficiency level. These three life insurance players are IPLIC, BAJAJ-ALLIANZ and AVIVA. As far as least efficiency level is concerned, none of the companies is observed to have this level.

In the year 2006-07, four companies i.e. LIC, ING-VYSYA, KOTAK MAHINDRA and MET-LIFE have efficiency score which is greater than 0.75 and hence are highly efficient companies. Along with these four insurers, seven more insurers are observed to have cost efficiency score in the range 0.50 to 0.75 and hence are termed as Efficient. Two life insurance companies i.e. IPLIC and BAJAJ-ALLIANZ were found to have low efficiency level. All in all, the financial year 2006-07 was cost efficient year for the selected life insurance companies as none of the insurer is found to be least efficient and number of efficient players increased to eleven.

During next year 2007-08, six life insurance companies lie in the slab of high efficiency level as their cost efficiency score is more than 0.75. These six companies include LIC, BSLIC, ING-VYSYA, SBI-LIFE, KOTAK-MAHINDRA and MET-LIFE. No life insurance player is found to be least efficient having cost efficiency score of 0.25 or below it. Five companies i.e. MAX- LIFE, HSLIC, BAJAJ-ALLIANZ, TATA-AIA and AVIVA were having score within the range of 0.50 to 0.75 and therefore are classified as efficient life insurance players. Therefore, it can be said that, life insurance sector continued to manage its cost effectively during this year too as the number of efficient life insurers remain eleven.
During 2008-09, it is observed that six life insurance companies are having score in the range of 0.75 and 1 and are highly efficient. These are LIC, ING-VYSYA, BAJAJ-ALLIANZ, SBI-LIFE, KOTAK-MAHINDRA and MET-LIFE. Five life insurers namely BSLIC, IPLIC, MAX- LIFE, TATA-AIA and AVIVA have also performed well and classified as efficient insurers. No company is having efficiency score which is less than 0.25 where as two life insurance companies namely HSLIC and RELIANCE are lying in the range of low efficiency level. To sum up, the picture remains the same during this year too as the number of efficient insurers continuous to be eleven.

The year 2009-10 proved itself to be of immense importance for life insurance companies. This is because eight life insurance companies out of selected thirteen life insurers were found to be highly efficient in terms of their cost and among remaining five, four were observed to have efficiency score in the range of 0.50 to 0.75 and termed as efficient life insurers. In total, twelve life insurers have emerged as cost efficient during this year. Only one life insurer which is found to be having low efficiency level is RELIANCE. None of the insurer is observed to have least cost efficiency level during this year.

RELIANCE is that life insurance company which is having low level of efficiency during the financial year 2010-11. The same picture is also observed in previous years. Seven life insurance players namely LIC, BSLIC, ING-VYSYA, BAJAJ-ALLIANZ, KOTAK-MAHINDRA, MET-LIFE and AVIVA are observed to have high level of efficiency while efficiency is highlighted in respect of IPLIC, MAX-LIFE, HSLIC, SBI-LIFE and TATA-AIA. Hence the number of efficient life insurers continues to remain same during this year also. Any of the life insurers is not found to have least efficiency level.

In the year 2011-12, six life insurers namely LIC, HSLIC, ING-VYSYA, MET-LIFE, KOTAK-MAHINDRA and AVIVA are observed to be highly efficient decision making units whereas three insure i.e. BSLIC, BAJAJ-ALLIANZ and TATA-AIA are determined as efficient. Four life insurers were found to be at low efficiency level as their cost efficiency score varies between 0.25 and 0.50. These four low efficient life insurers are IPLIC, MAX-LIFE, RELIANCE and SBI-LIFE. Although none of the insurer is found to be least efficient but number of efficient life insurers was reduced to nine during this year. It points towards the extra expenditure incurred by the companies during this year.
**Overall Performance of Life Insurers Based on Cost Efficiency Scores:**

It is observed that six life insurance players have cut down their cost during the period of study in order to become cost efficient. Those six insurers whose performance has improved include IPLIC, HSLIC, ING-VYSYA, BAJAJ-ALLIANZ, TATA-AIA and AVIVA. Five decision making units were found to be consistent during the different years of study. Name of those consistent players are LIC, BSLIC, MAX LIFE, KOTAK MAHINDRA and MET-LIFE. There are only two life insurance players whose performance has slipped back i.e. RELIANCE and SBI-LIFE. Therefore, to conclude, the performance of life insurance companies has been classified in to three categories: Improved, Consistent and Deteriorated.

Two insurers i.e. LIC, ING-VYSYA performed consistently throughout the study period and hence are highly efficient DMU’s. Five Insurers namely IPLIC, HSLIC, BAJAJ-ALLIANZ, TATA-AIA and MET-LIFE have improved their performance over the years and hence, are termed as improved performers. As far as deteriorate performers are concerned, they are RELIANCE and SBI-LIFE.

**To conclude,** Cost efficiency score is calculated for various years of study period to know the performance of life insurance companies. In 2005-06, four companies namely LIC, RELIANCE, KOTAK MAHINDRA and MET-LIFE were observed to be highly cost efficient. During next year again four companies have reported their score in the highly efficient range but this time, it was ING-VYSYA instead of RELIANCE. Coming to the next year 2007-08, number of highly efficient life insurers increased to six. BSLIC and SBI-LIFE were two new entrants. The number of cost efficient companies remained same in 2008-09 but ING-VYSYA replaced BSLIC here. The next year 2009-10 is expected to be the most cost efficient year of the study period because number of highly cost efficient companies jumped to eight during this year. The names of those eight companies are LIC, BSLIC, ING-VYSYA, BAJAJ-ALLIANZ, SBI-LIFE, KOTAK MAHINDRA, MET-LIFE and AVIVA. A slip back in performance of SBI-LIFE is reported in the year 2010-11, leaving the number of cost efficient companies to seven. The number further decreased to six with LIC, HSLIC, ING-VYSYA, KOTAK MAHINDRA, MET-LIFE and AVIVA as cost efficient insurers. All in all, three life insurers namely LIC, KOTAK MAHINDRA and MET-LIFE are concluded
to be highly cost efficient because these companies are consistently maintaining high cost efficiency score during the study period.

**Profit Efficiency of Life Insurance Companies in India:**

Profit Efficiency Model is an extension of Cost Efficiency Model using New Cost and New Revenue Efficiency Models. Here, profit efficiency score is calculated using number of agents and offices as inputs. The cost for these inputs is taken as commission and operating expenses. Number of policies is taken as output and its corresponding price is sum assured per policy. Here again profit efficiency score so arrived is divided in to four levels of efficiency and thus the performance is concluded as under:

In the year **2005-06**, six life insurance companies namely LIC, IPLIC, MAX-LIFE, HSLIC, RELIANCE and KOTAK-MAHINDRA are termed as highly efficient as profit efficiency score of these companies is greater than 0.75. Furthermore, four life insurers (BSLIC, SBI-LIFE, TATA-AIA and MET-LIFE) have emerged as efficient players as their profit efficiency score ranges between 0.50 and 0.75. In total, ten life insurers have reported their status of being efficient. The insurance companies, profit efficiency score of which is more than 0.25 but less than 0.50 are described to have low efficiency level. Therefore, three life insurers were found to be low efficient. Those three insurers are ING-VYSYA, BAJAJ-ALLIANZ and AVIVA. However, there is not even a single life insurance company, which is having an efficiency score less than 0.25.

During the next year **2006-07**, six life insurance companies (LIC,MAX LIFE,HSLIC, KOTAK MAHINDRA,TATA-AIA and MET-LIFE) are found to be highly efficient and while only AVIVA life insurance company was found to be least efficient. Four companies are observed to be efficient having profit efficiency score between 0.50 and 0.75. The names of efficient life insurers are BSLIC, IPLIC, ING-VYSYA and SBI-LIFE. Rest of the two insurers is observed to have low level of efficiency. Overall, ten out of thirteen companies were efficient in terms of their profitability.

The earning capacity of life insurance players has increased in **2007-08**. It is because, ten out of thirteen life insurance companies are having profit efficiency score greater than 0.75 and are determined as highly efficient decision making units. This number was six in the previous
year. Moreover two life insurers i.e. BAJAJ-ALLIANZ and AVIVA are observed to be efficient during this year and total number of efficient insurers increased to twelve during 2007-08. No company is having profit efficiency score which is less than 0.25 and hence is least efficient. Only RELIANCE is having low efficiency level.

The year 2008-09 has proved itself to be a successful year for profitability of life insurance industry as ten among thirteen life insurers are emerged as highly profit efficient and two life insurers are observed to be efficient in terms of profit during this year. Therefore, the number of profit efficient decision making units continued to remain twelve in this year too. Least efficiency level is not observed in case of any life insurance company. However, one life insurer i.e. RELIANCE was found to have low level of efficiency.

Most of the companies are termed as highly efficient during 2009-10. This status has been maintained by ten life insurers since previous year. The same picture is observed in respect of insurers lying in the range of 0.50 to 0.75. These were two in number during last year and continued to remain same in current year. All in all, twelve companies are found to be profit efficient during 2009-10 as well. RELIANCE continued to have low efficiency level in this year and no company is observed to have least level of profit efficiency.

Majority of life insurance companies are highly efficient during the year 2010-11. However, the number decreased to nine this year as compared to ten in the previous year whereas the number of profit efficient companies (having profit efficiency score in the range of 0.50 to 0.75) increased to three including MAX LIFE, HSLIC and TATA-AIA. RELIANCE continued to be low efficient as its profit efficiency score is lying in the range of 0.25 to 0.50 and once again, least profit efficiency level is not seen this year.

Ten companies are having high level of efficiency and two companies have reported their score in the range of being efficient during the year 2011-12. So again, twelve companies are found to efficient in terms of their profitability. Only one company (RELIANCE) is lying in the range of low efficiency level as their score is 0.3657 during this financial year.
**Overall Performance of Life Insurers Based on Profit Efficiency Scores:**

In terms of profitability, three life insurers namely BAJAJ-ALLIANZ, TATA-AIA and AVIVA showed improved level of performance during study period. Even if, performance level of few companies has not improved but, it has not decreased as well. These companies include BSLIC, HSLIC, SBI-LIFE and KOTAK MAHINDRA. Life Insurance Corporation has turned up with a non stop high level performer.

**All in all,** profit efficiency of life insurance industry is analyzed in this section using Data Envelopment Analysis. During 2005-06, six companies were found to have high level of efficiency i.e. LIC, IPLIC, MAX LIFE, HSLIC, RELIANCE and KOTAK MAHINDRA. The number continued to remain same during next year (2006-07) whereas TATA-AIA and MET-LIFE insurance company replaced IPLIC and RELIANCE. Year 2007-08 proved itself to be a profitable year for the life insurance industry as number of companies having high level of efficiency climbed up to ten. BSLIC, IPLIC, ING-VYSSA and SBI-LIFE were four new entrants during this year. Number of highly efficient companies remained same in 2008-09 but AVIVA life insurance took the place of MET-LIFE. The status of life insurers did not change in next year as well. A marginal fall in the number of highly efficient companies is observed in the year 2010-11. It decreased to nine because of comparatively low profit efficiency score of TATA-AIA. The number again went up to ten in the next year 2011-12 due to increase in efficiency level of BSLIC. Therefore, it can be concluded that various companies attained a good profit efficiency score during the study period. The companies which consistently remained highly efficient are LIC and KOTAK MAHINDRA, BSLIC, IPLIC, ING-VYSSA and SBI-LIFE also remained in high efficiency level except first two years of study period.

Hence, it is crystal clear from results of all three models namely Cost Efficiency, Revenue Efficiency and Profit Efficiency that LIC and KOTAK MAHINDRA are Highly Efficient Decision Making Units.

**Implications:**

- Sound position of Capital Adequacy in respect of AVIVA, BAJAJ-ALLIANZ and RELIANCE is an indicator of capital available with these companies for further
expansion of insurance business. Hence, these companies should identify new products and new markets for their examination.

- Quality asset portfolio of AVIVA indicates the security of its long term lenders. Therefore, in order to meet the expansion proposals, the company should use its credit worthiness by raising funds from debt along with reserves available with it.

- Efficiency of SBI-LIFE, RELIANCE, IPLIC and LIC in terms of Reinsurance and Acturial Issues reveals sound risk management policies of these companies and these companies should focus on increasing their sale in terms of number of policies as these companies are capable enough to cover the risk of its policyholders.

- High profitability of LIC, BSLIC, HSLIC, BAJAJ-ALLIANZ and SBI-LIFE highlights the wider scope of earnings available with these companies in order to offset the losses relative to capital, asset and insurance business. Hence, these companies should take advantage of their higher earnings by investing their profits in some other profitable projects.

- High liquidity along with revenue, cost and profit efficiency of LIC and KOTAK-MAHINDRA indicates that the companies are having funds to pay for the obligations and these companies are performing their operations efficiently.

**SECTION-II**

**SUGGESTIONS AND RECOMMENDATIONS**

The insurance sector is undergoing fundamental transformation and has an important role in improving country's economic infrastructure. The Insurance Regulatory and Development Authority plays an important role in laying down the golden rules and for the growth and expansion of sector. But the challenge clearly rests with insurers to take the industry to its next level of evolution. The following are the suggestions to make the insurance popular among the people

- The insurance sector will grow steadily rather rapidly. Insurance Regulatory Authority of India should regularly monitor the implementation of existing norms and regulations to ensure financial strength and solvency of insurers. The life insurers should also observe such rules and regulations in order to have better chance of
success in strengthening the market. This may also affect the interest of large numbers of policyholders positively.

- Now the world is changing by leaps and bounds and is in the need of different financial services. Therefore, the financial service providers who are operating in domestic market with a significant market share will now have to grasp the expansion opportunities and are required to enter in to the other market.

- Creating awareness among the consumers about insurance by improving the effort of educating the customer regarding their insurance needs, meeting their needs through product innovation. Moreover, customer should be made enough aware so as to perceive insurance as a saving instrument rather that a risk cover. Professional customer service in terms of quality advice on product choice along with serving policy would work positively.

- Understanding the need of customer will enable life insurance companies to design appropriate products, determine adequate price and to enhance profitability. Since a single policy cannot meet all the objectives of insurance, the insurers should have a portfolio of policies covering all the needs. Companies will need to constantly innovate in terms of product development to meet ever changing consumer needs.

- Multi-product, multi-channel and multi-segment route should also be followed for the growth of industry. Customized insurance products should be provided as per the needs of customers. Innovative products with smart marketing and effective distribution may help the insurers.

- The insurance penetration is low in India which indicates that the volume of business is bound to increase. The rural areas need more focussed effort for this purpose. Therefore in order to increase its penetration life insurance industry needs to design such products which are suitable for rural sector. Life insurers should pay special attention to the characteristics of the rural labour force like the preference for simple products and prevalence of irregular income streams.

- Enhancing reach through cost-effective distribution by formulating and implementing specific strategies are the keys to capture large market share. Moreover, a proper mixture of distribution channels may also be helpful in building strong and effective relationship with consumers along with brand equity and cost effective customer
service. Now a days internet is one of the major source to tap the urban customer and rural customer should also be attracted by the consultative approach.

- Improved service quality will ensure a successful future to life insurance industry. This will help the insurers to generate large volume of business and that too for the long term. Customer service strategies which focus on customer relationship programs can prove to be a helpful tool. Rendering quality services will result in customer acquisition, retention, satisfaction along with employee retention and cost reduction. This would work as a brand building exercise for an insurer.

- Technological advancement will be a key driver towards growth in business of life insurance industry which may also help in performing some important functions like data management, underwriting fund management and actuarial efficiency. Technology may enable the insurers to innovate new products, provide better customer service and wider insurance coverage to them through the help of internet. Insurance companies should give customers a distinct claim id to track online claims, financial reporting, billing and electronic fund transfer for the benefit of customers.

- Entry of new players may facilitate healthy competition which will not only force the insurers to introduce better products and services but will also provide more choice to consumers. Policy portability by the insurance companies will offer the benefit of better return to the policyholders.

- Agents play critical role in the success life insurance sector. They are competent in handling the life insurance business and moreover help to gain advantage over the competitors. Therefore, attracting and retaining agents is a challenge that must be met in order to improve the efficiency of the industry. Implementing range of retention and recruitment policies including raising the retirement age, upgrading staff from temporary to permanent position, hiring more women and outsourcing may prove helpful in meeting the above said challenge.

- In the developed countries several lead generating sites have emerged. These sites allow the potential customers to input information about needs of their insurance policy. For a fee, these sites forward information of the customer to a number of insurance companies in consideration of fee. Thereafter, the insurance companies review the information and if an insurer decides to take on the policy, they contact the
customer with an offer. This practice gives consumers the freedom to accept the best rate. This practice should also be introduced in India.

Recommendations:
In the light of analysis and findings, following recommendations are reproduced in order to improve the efficiency of life insurance industry:

- While calculating capital adequacy ratio, share of Life Insurance Corporation of India is not considered due to low equity share capital held by it. Therefore, LIC needs to restructure its capital portfolio in order to contribute significantly in life insurance industry. Relying merely on reserves position is not beneficial for life insurers in long run as competition is getting stiffer.
- Life insurers such as SBI-LIFE and TATA-AIA are expected to be more dependent on external sources of finance which is a danger single. Therefore, in order to improve the asset quality of such life insurers these companies also need to introduce more of equity share capital.
- BAJAJ-ALLIANZ, MET-LIFE and AVIVA are incurring much in terms of expense ratio. In order to improve efficiency, these companies need to check their expenses properly. For this purpose, unprofitable branches and unproductive work force should be curtailed in order to save a huge amount of management expenses. Furthermore, economical distribution networks need to be adopted and simultaneously expenses incurred on management need to be curtailed for promising and profitable underwriting.
- Return on investment of TATA-AIA, LIC and SBI-LIFE is quite less. These companies can enhance their investment income by having a diversified and risk balanced investment portfolio. This may also help in underwriting losses to a good extent.
- Life insurers are required to underwrite their business as per the capital strength and adequate capital requirement for all companies should be determined in order to take sufficient underwriting business exposures.
- In order to enhance the efficiency of life insurers, FDI cap should be enhanced from 26 to 49 percent. It has its own advantages like more capital flow, more
employment, technical knowhow and in the long run revenue, cost and profit efficiency for insurers.

- Cost efficiency of two life insurers (RELIANCE, SBI-LIFE) have deteriorated over the study period. Therefore, these companies are required to focus upon is new, effective and cost efficient distribution channels so as to restrict growing marketing costs. Moreover, management expenses should be curtailed and assigned a limit and insurers which don’t adhere to the limit should be fined and ultimately legally challenged. This may also help to enhance the revenue efficiency of low and least efficient life insurers.

- The companies having low profitability level are required adopt of cost effective distribution system. Such a cost effective distribution system can have immediate impact in the shape of decreasing costs and hence increased profit margins leading to profit efficient life insurance industry.

- New regulations in the areas of risk evaluation and product pricing may also be helpful in product pricing. Otherwise in the coming time, insurance industry will be facing insolvencies of some key insurance players, which may damage customer trust and consequently the sector will remain untapped.