An Evaluation of Investment Performance of Private Life Insurance Industry in India

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Abstract
Data Envelopment Analysis (DEA) model is used to provide valuable information on investment efficiency of private life insurance industry in India. This study utilizes two inputs (shareholders’ investments and policyholders’ investments) and two outputs (net returns on investments to the shareholders and net returns on investments to the policyholders). This study focuses upon 20 private life insurance companies operating in India over a period of 4 years from 2010-11 to 2013-14. Since this study attempts to maximize output, an output oriented DEA model is used. The study finds that investment efficiency of private life insurance industry has improved on Banker, Charnes and Cooper (BCC) model and Charnes, Cooper and Rhodes (CCR) model. The study further highlights that during all years under study, 15% to 40% life insurance companies have been found on the CRS frontier and 40% to 60% life insurance companies have been found on the VRS frontier. With regard to scale efficiency issues, 15% to 40% companies have been operated at their most productive scale over the study period.

Keywords: Data envelopment analysis; Technical efficiency; Pure technical efficiency; Scale efficiency

Introduction
Insurance industry plays crucial part in economic and social development of India through its role as intermediary between investors and industry. Two insurance categories are identified based on the type of risk underwritten: life and general (non-life). The insurance companies provide a source of long-term funds to the government and various industries in the financial markets. The industry has ₹ 20972.75 billion assets under management which represents 36.52% of GDP and 52 companies competed aggressively at the end of 2014. Over the last decade Indian insurance industry has experienced exceptional changes and confronted more difficulties. As an aftermath of deregulation and globalization foreign companies entered in Indian market place. The competitive pressures force many insurance companies to change corporate strategies in order to reduce operating costs while keeping up or improving the quality of their services. Investment activity is a crucial issue of the insurance sector because the ultimate performance of the sector relies upon the return of its investment. Investment returns made by insurance companies constitute a major portion in operating performance and enhance their standing in competitive market place. Investment gains are reflecting financial wellbeing of insurance companies and facilitate designing of pricing and dividend policies. Strong investment returns facilitate insurance companies to offset their underwriting losses and allow them to report overall profitability. As the marketplace continues to evolve at a rapid pace, it is imperative to find a tool to help managers in identifying the companies that are best positioned to thrive in a changing environment. Along these lines, assessing performance in the insurance industry remains an important objective and has always been the subject of considerable interest. This research proposed a DEA model which estimate investment performance of Indian private life insurance industry. The paper successfully provides a comprehensive evaluation for insurance companies. The rest of the paper is organized as follows. Section 2 gives a brief review of investment performance. Section 3 provides the models and methodology utilized in this paper. Section 4 gives the DEA results and further discussion. Finally, our conclusions are presented in Section 5.

Insurance industry performance evaluation
Some work has been done on investment performance evaluation of insurance industry. The most widely acknowledged technique used by insurance companies to benchmark their performance has been the ratio analysis. The well-known ratios used to evaluate investment performance of insurance companies are the ratio of investment income to investment assets or the ratio of investment income to net premiums [1]. Both of the ratios are widely used by industry experts, since investments generate a significant proportion of income for the insurance industry. Ratio analysis provides relatively insignificant amount of information when considering the effects of economies of scale, identification of benchmarking policies and estimation of investment performance measures of firms. As a result, there is an incentive to use more successful strategies in evaluating the investment performance of insurers. Bhawa and Kaur [2] determined technical efficiency, pure technical efficiency and scale efficiency of general companies using DEA over the years from 2002-2003 to 2009-10. For this purpose claim incurred was taken as output and investment income as well as net income were taken as input. Their study declared some improvement in overall efficiency of general insurance companies over the period of study. Hsiao (n.d) determined capital investment efficiency and efficiency changes using DEA and malmquist productivity index over the years from 1998 to 2008. The researcher had also made some hypotheses to test if there is a statistically significant difference among the DEA model and TFI of CAMEL-S model for life insurers. The result of study suggested that insurers should revise their investment strategies to improve company’s overall financial performance.

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Hsiao and Su [3] employed DEA and malmquist productivity index to measure relative efficiency and investment performance of 24 life insurers in Taiwan from 1998 to 2002. The main findings disclosed that efficiency and investment performance are the main determinants of business performance. Wu et al. [4] developed a new problem-oriented DEA model to simultaneously assess the production and investment performance of insurers, differing from classical DEA models appropriate for independent performance evaluation. The results showed that Canadian L and H insurance companies operated very efficiently for the examined 3-year period (1996-1998). Yang (2006) constructed a two-stage DEA model to provide valuable managerial insights while assessing the dual impacts of operating and business strategies for the Canadian life and health (L and H) insurance industry. The results of study showed that the Canadian L and H insurance industry operated efficiently during the period examined (the year 1998). Adam [5] examined the relationship between investment earning of life insurance firms in New Zealand and their organizational characteristics using a pooled weighted least squares regression model over the period 1988-1993. The empirical result of study indicated that investment earnings are positively associated with size, leverage, underwriting risk and stock companies. Adams and Buckle [6] examined the determinants of corporate (i.e. underwriting and investment related) financial performance in the Bermuda insurance market using panel data for 1993-1997. The study found that highly leveraged, lowly liquid companies, reinsurers and companies with higher underwriting risk have better operational performance. Binay [7] measured the risk-adjusted equity investment performance of all institutional investors in the United States during 1981-2002. The results indicated that institutional investors have been successful in managing client assets and displayed significant stock selection skills during the period. Joo [8] analyzed the impact of various factors on solvency position of non life insurers by applying multiple regression analysis over the period of 2004-05 to 2008-09. The factors taken for analysis were firm size, investment performance and liquidity ratio. The study found that claim ratio and firm size have greater impact on solvency position of non life insurance companies. Kamau [9] evaluated the relationship between underwriting profit and investment income. The result of study presented low correlation between underwriting profit and investment income. Underwriting profit has low correlation with all other selected variables notably admitted assets, admitted liabilities, capital employed, non-life net premium unlike investment income that all other selected variables notably admitted assets, admitted liabilities, capital employed, non-life net premium unlike investment income that have high correlation. Kumar [10] revealed that public sector general insurance companies have higher underwriting loss than private sector general insurance companies, but higher investment income of public sector compensated their high underwriting loss, leading to higher profitability than private sector general insurance companies. Kumari [11] evaluated the financial performance of life insurance industry in India through various financial ratios. These ratios are based on Gart NAIC guidelines and Insurance Regulatory and Development Authority of India (IRDA) norms. Some of these ratios are Total Assets to Earned Premium Ratio, Investment Income to Earned Premium Ratio, Investment Income to Total Investments Ratio, Current Ratio [12]. Overall result of these ratios gives the positive indication of financial soundness. Other important literatures are shown in Table 1.

Mathematical solution

The study adopts both types of envelopment surfaces, BCC and CCR in order to examine scale efficiency issues as given in equation 1 and equation 2. This method provides a convenient way to categorize efficiency as technical efficiency, pure technical efficiency and scale efficiency [14].

**Pure Technical Efficiency (PTE):** In PTE, efficiency is measure relative to variable return to scale (VRS) frontier. It takes into account the variation of efficiency with respect to the scale of operation.

**Scale Efficiency (SE):** Scale efficiency perceives that economy of scale cannot be achieved at all scales of production and there is one most productive scale size, where the scale efficiency is at 100 per cent [15]. The scale efficiency is measured by dividing technical efficiency with the PTE.

**Technical efficiency (TE):** TE can be viewed as the product of PTE and SE. It mirrors the ability of a firm to obtain the maximum output from a given set of input or the efficiency with which inputs are transformed into output or just the output/input ratio. Output orientation (the LP is oriented to maximize outputs) was selected for the investment model, since the management wants to maximize the investment gains [16].

The mathematical solution to implement the conceptual model is given in equation 1 and equation 2. Assume there are data on K inputs and M outputs on each of N DMUs. For ith DMU these are represented by vector of $x_i$ and $y_i$ respectively. The $K \times N$ input matrix, $X$, and the $M \times N$ output matrix, $Y$, represent data of all DMUs. $\lambda$ is a vector of constant.

Equation 1 represents output oriented CCR DEA model and Equation 2 represents output oriented BCC DEA model.

$$\begin{align*}
\text{max}_\lambda, \Phi & \quad \lambda Y \geq \Phi y_i, \\
\lambda X & \leq x_i, \\
\lambda & \geq 0
\end{align*}$$

(1)

Performing a DEA analysis requires the solution of n linear programming problems of the above form, one for each DMU [17]. In the study, there are data on twenty life insurance companies for 4 years; hence there are twenty linear programming problems for CRS DEA to be solved in a particular year. The CRS linear programming can be

![Image](https://via.placeholder.com/300)

**Figure 1: Investment Model.**
Data of private life insurance companies. Audited and accounting data problems for VRS DEA to be solved in a particular year [19].

Companies for 4 years; hence there are twenty linear programming equal to those obtained using the CRS model [18].

Hull and thus provide technical efficiency score which is greater than or intersecting plans which envelope the data point more tightly than CRS.

\[N1'\lambda = 1\text{ to equation 1 to provide:}
\]

\[
\begin{align*}
\max_{\lambda} \Phi, \\
\lambda Y &\geq \Phi Y, \\
\lambda X &\leq x_i \\
N1'\lambda & = 1 \\
\lambda &\geq 0
\end{align*}
\]

N1 is \(N^*\) 1 vector of ones. The approach forms a convex hull of intersecting plans which envelope the data point more tightly than CRS hull and thus provide technical efficiency score which is greater than or equal to those obtained using the CRS model [18].

Note that the linear programming problem given in equation 2 must be solved \(N\) times, once for each DMU in the sample for a particular year. In the study, there are data on twenty life insurance companies for 4 years; hence there are twenty linear programming problems for VRS DEA to be solved in a particular year [19].

Data

The empirical results of the study are primarily based on financial data of private life insurance companies. Audited and accounting data for 2010-11 to 2013-14 (denominated in Rs.) were obtained for 20 major private life insurers from IRDA annual reports and annual reports of respective companies [20]. Some firms eliminated from the sample because of data problems such as companies come into existence after sample account for about 90% of premium volume in the private life insurance market in each year of the sample period [21]. The data is from annual balance sheets, policyholders account and shareholders insurance market in each year of the sample period [21]. The data is from annual balance sheets, policyholders account and shareholders insurance market in each year of the sample period [21]. Some firms eliminated from the sample because of data problems such as companies come into existence after sample account for about 90% of premium volume in the private life insurance market in each year of the sample period [21]. The data is from annual balance sheets, policyholders account and shareholders insurance market in each year of the sample period [21]. Some firms eliminated from the sample because of data problems such as companies come into existence after sample account for about 90% of premium volume in the private life insurance market in each year of the sample period [21].

### Table 1: Table from past Literature

| Authors                   | Countries       | No. of DMUs | Sample period | Input                                                                 | Output                                                                 |
|---------------------------|-----------------|-------------|---------------|----------------------------------------------------------------------|------------------------------------------------------------------------|
| Ahmad [12]                | India           | 94          | 1985-1993     | Share capital including the reserves and surpluses                   | Shareholders’ investment                                               |
| Barosa and Obijaku [13]  | Nigeria         | 100         | 2001-2005     | Capital, operative costs, number of employees, total investments     | Profits, net premiums, settled claims, outstanding claims, investment income |
| Bawa and Kaur [2]         | India           | 770-970     | 1993-1998     | Labor (acquisition, admin.), fixed capital expense, equity capital    | Life: sum of life insurance benefits, changes in reserves, invested assets. Non-life: Losses incurred, invested assets |
| Cummins et al. [16]      | Italy           | 1550        | 1994-2003     | Labor (admin., agent), materials and business services, financial equity capital | Present value of losses incurred, real invested assets                |
| Fuku and Chou [19]       | Taiwan          | 26          | 1977-1999     | Labor, physical capital, claim                                      | Premiums, investment                                                  |
| Hwang and Gao [21]       | Ireland         | 100         | 1991-2000     | Labor (admin., agent), financial capital                             | Insurance benefits, investible funds                                  |
| Kumpes [22]              | UK              | 40          | 1994-1999     | Labor (home office, agent), business services, financial capital     | Claims, real invested assets                                          |
| Mahlberg and Ufl [23]    | Austria         | 70          | 1992-1999     | Expenditures on labor, material, energy, depreciation, marketing, commissions (1 input); capital management cost (1 input) | Claims, net change in provisions, allocated investment returns, bonuses and returned premia |
| Noulas et al. [24]       | Greece          | 16          | 1981-1996     | Salaries and expenses (1 Input) and payment to insurers and expenses incurred in the production of services (1 input) | Premium income, revenue from investment activities                     |
| Diaocon et al. [17]      | 15 European countries | 454 | 1996-1999 | Total operating expenses, total capital, total technical reserves, total borrowings from creditors | Net earned premiums (general, long-term), total investment income |
| Qiu and Chen [25]        | China           | 14-32       | 2000-2003     | Labor, equity capital, Benefit payments, additions to reserve, yield of investment |
| Wu et al. [4]            | Canada          | 71-78       | 1996-1998     | Prod: Labor expenses, general operating expenses, capital equity, claims incurred Inv: Net actuarial reserves, investment expenses, total investments, total segregated funds | Prod: Net premiums written, net income Inv: Investment gains in bonds and mortgages, investment gains in equities and real estate |
| Yang [26]                | Canada          | 72          | 1998          | Prod: Labor expenses, general operating expenses, capital equity, claims incurred Inv: Net actuarial reserves, investment expenses, total investments, total segregated funds | Prod: Net premiums written, net income Inv: Investment gains in bonds and mortgages, investment gains in equities and real estate |
| Yao et al. [27]          | China           | 22          | 1999-2004     | Labor, capital, payment and benefits                                 | Premiums, investment income                                           |

1. Aegon Religare Life Insurance Company Ltd.
2. Aviva Life Insurance Company Ltd.
3. Bajaj Allianz Life Insurance Company Ltd.
4. Bharti AXA Life Insurance Company Ltd.
5. Birla Sunlife Insurance Company Ltd.
6. DLF Pramerica Life Insurance Company Ltd.
7. Future Generali Life Insurance Company Ltd.
8. HDFC Standard Life Insurance Company Ltd.
9. ICICI Prudential Life Insurance Company Ltd.
10. IDBI Federal Life Insurance Company Ltd.
Table 2: Efficiency Score at Constant Return to Scale i.e. Overall Technical Efficiency

| DMUs         | 2010-11 | 2011-12 | 2012-13 | 2013-14 | Mean  |
|--------------|---------|---------|---------|---------|-------|
| Aegon Life   | 0.920   | 1.000   | 1.000   | 1.000   | 0.98  |
| Aviva Life   | 0.699   | 0.937   | 0.925   | 0.868   | 0.85  |
| Bajaj Life   | 1.000   | 1.000   | 1.000   | 1.000   | 1.00  |
| Birla Life   | 0.772   | 0.947   | 0.920   | 0.879   | 0.87  |
| DLF Life     | 1.000   | 1.000   | 1.000   | 1.000   | 1.00  |
| Future Life  | 1.000   | 0.902   | 0.874   | 1.000   | 0.94  |
| HDFC Life    | 1.000   | 0.946   | 1.000   | 1.000   | 0.98  |
| ICICI Life   | 1.000   | 1.000   | 1.000   | 1.000   | 1.00  |
| IDBI Life    | 0.645   | 0.939   | 1.000   | 0.959   | 0.88  |
| ICICIFirst Life | 1.000 | 1.000   | 0.857   | 0.725   | 0.89  |
| Exide Life   | 1.000   | 0.974   | 1.000   | 0.744   | 0.84  |
| Kotek Life   | 0.878   | 0.905   | 1.000   | 0.822   | 0.90  |
| Max Life     | 1.000   | 1.000   | 0.936   | 0.880   | 0.95  |
| Met Life     | 1.000   | 1.000   | 0.977   | 0.887   | 0.96  |
| Reliance Life | 1.000  | 0.681   | 1.000   | 1.000   | 0.92  |
| SBI Life     | 0.483   | 0.918   | 1.000   | 1.000   | 0.85  |
| Srim Life    | 0.747   | 0.855   | 1.000   | 1.000   | 0.90  |
| Star Life    | 1.000   | 1.000   | 0.923   | 1.000   | 0.98  |
| TATA Life    | 0.773   | 0.834   | 0.988   | 1.000   | 0.89  |
| Mean         | 0.879   | 0.935   | 0.937   | 0.970   | 0.938 |

Source: Computed through DEAP version 2.1

Table 3: Efficiency Score at Variable Return to Scale i.e. Pure Technical Efficiency

EXIDE Life, MAX Life and TATA Life have not shown efficiency score of 1 in any years from 2010 to 2014. DLF Life scored highest rank in overall technical efficiency with mean efficiency score estimated to be 1 and SBI Life has scored lowest rank in overall technical efficiency with mean efficiency stood at 0.75. Investment efficiency of private life insurance industry has shown an increasing trend from 2010-11 to 2013-14. Average efficiency has increased from 0.857 in 2010-11 to 0.908 in 2013-14. Notably, in the year 2012-13 insurance industry found to be highly efficient as mean efficiency stood at 0.948. The study further highlighted that least number of companies found to be efficient on constant return to scale during 2011-12 which is mainly due to the decline in income from investment. This decline in income from investments was a reflection of the condition prevailing in stock market and a decline in the unit linked business for life insurance industry (Table 3).

Table 3 evinces technical efficiency (pure technical efficiency) of private life insurers calculated at variable return to scale. Table reveals that during all years under study, 8 (40%) to 12 (60%) life insurance companies have been found on the frontier. DLF Life has efficient maximum number of times in twelve years; while Aviva Life, BIRLA Life, IDBI Life, ICICI Life have efficient maximum number of times in twelve years; while Aviva Life, BIRLA Life, IDBI Life, SBI Life, Srim Life, Star Life, TATA Life has scored highest rank in overall technical efficiency with mean efficiency stood at 0.84. Investment efficiency of private life insurance industry has shown an increasing trend from 2010-11 to 2013-14. Average efficiency has increased from 0.879 in 2010-11 to 0.938 in 2013-14. Notably, in the year 2012-13 insurance industry found to be highly efficient as mean efficiency stood at 0.970. The study further highlighted that least number of companies found to be efficient on variable return to scale during 2011-12 which is mainly due to the decline in income from investment. This decline in income from investments was a reflection of the condition prevailing in stock market and a decline in the unit linked business for life insurance industry (Table 4).
that in year 2013-14, 7 (35%) insurers depicted constant return to scale than proportionate increase in input. However it is important to note Decreasing return to scale reveals that increase in output has been less and 2012-13 most of insurers have marked decreasing return to scale.

The above table shows in the year 2010-11 most of insurers have marked increasing return to scale which reveals increase in output has been more than proportionate increase in input. In the year 2011-12 and 2012-13 most of insurers have marked decreasing return to scale. Decreasing return to scale reveals that increase in output has been less than proportionate increase in input. However it is important to note that in year 2013-14, 7 (35%) insurers depicted constant return to scale and 7 (35%) insurers exhibited decreasing return to scale.

**Conclusion**

The deepening of insurance market makes a positive contribution to the economic growth. Insurance companies earn their profits through underwriting of premium from various policies and investing in various securities as prescribed by the regulatory body [23]. Investment activity is an essential issue of insurance sector because the ultimate performance of the sector depends on the return of its investment whether it is life or general insurance. Thus, an attempt has been made to estimate investment efficiency of 20 private life insurers over the period from 2011-14 using DEA [24]. The study finds that during all years under study, 15% to 40% life insurance companies have been found on the CRS frontier and 40% to 60% life insurance companies have been found on the VRS frontier [25]. With regard to scale efficiency issues, 15% to 40% companies have been operated at their most productive scale over the study period. The study also reveals that investment efficiency of private life insurance industry has improved on both BCC and CCR model [26]. The study further highlighted that least number of companies found to be efficient during 2011-12 which is mainly due to the decline in income from investment [27]. This decline in income from investments was a reflection of the condition prevailing in stock market and a decline in the unit linked business for life insurance industry.

**References**

1. Das US, Davies N, Podpiera R (2003) Insurance and Issues in Financial Soundness. Working paper no. WP/03/138.
2. Bhawa SK, Kaur N (2011) Performance measurement using the frontier efficiency methodology: A study of Indian general insurance sector. Journal of Banking Financial Services and Insurance Research 1: 49-75.
3. Hsiao SH, Su SH (2006) An evaluation of investment performance and financial standing of life insurers in Taiwan. The Journal of American Academy of Insurance Medicine 34: 127-152.
4. Wu D, Yang Z, Vela S, Liang L (2007) Simultaneous analysis of production and investment performance of Canadian life and health insurance companies using data envelopment analysis. Computers & Operations Research 34: 180-198.
5. Adams M (1996) Investment earnings and the characteristics of the life insurance firms: New Zealand evidence. Australian Journal of Management 21: 41-55.
6. Adams M, Buckle M (2003) The determinants of corporate financial performance in the Bermuda insurance market. Applied Financial Economics 13: 133-143.
7. Binay M (2005) Performance attribution of US institutional investors. Financial Management 34: 127-152.
8. Joo BA (2013) Analysis of financial stability of Indian non-life insurance companies. Asian Journal of Finance & Accounting 5: 306-319.
9. Kamau MH (2013) The relationship between underwriting profit and investment income for the general insurance industry in Kenya (Master thesis). University Of Nairobi, Kenya.
10. Kumar, Rohit (2010) Performance evaluation of general insurance companies: A study of post reform period. Punjabi University, Patiala.
11. Kumar TH (2013) Performance evaluation of Indian life insurance industry in post liberalization. International Journal of Social Sciences Arts and Humanities 1: 7-16.
12. Ahmad MU (2010) Has privatization of general insurance sector in India served the purpose. The Asian Economic Review 52: 287-296.
13. Barros PC, Obijiaku EL (2007) Technical efficiency of Nigerian insurance companies. Carlos Pestana Barros and Echika Lemechi Obijiaku, Workingpapers.
14. Cummins JD, Nini GP (2002) Optimal capital utilization by financial firms: evidence from the property-liability insurance industry. Journal of Financial Services Research 21: 15-53.
15. Cummins JD, Xie X (2008) Mergers and acquisitions in the US property-liability insurance industry.
insurance industry: productivity and efficiency effects. Journal of Banking and Finance 32: 30-55.

16. Cummins JD, Turchetti G, Weiss MA (1996) Productivity and technical efficiency Italian insurance industry. Financial Institutions Center, The Wharton School University of Pennsylvania 96-10.

17. Diacon SR, Starkey K, O'Brien C (2002) Size and efficiency in European long-term insurance companies: An international comparison. The Geneva Papers on Risk and Insurance 27: 444-466.

18. Fukuyama H, Weber WL (2001) Efficiency and productivity change of non-life insurance companies in Japan. Pacific Economic Review 6: 129-146.

19. Hao JCY, Chou LY (2005) The estimation of efficiency for life insurance industry: The case in Taiwan. Journal of Asian Economics 16: 847-860.

20. Hsiao SH (2001) A study of investment performance and overall financial performance for life insurers in Taiwan.

21. Hwang T, Gao SS (2005) An empirical study of cost efficiency in the Irish life insurance industry. International Journal of Accounting Auditing and Performance Evaluation 2: 264-280.

22. Klumpes PJM (2004) Performance benchmarking in financial services: Evidence from the UK life insurance industry. The Journal of Business 77: 257-274.

23. Mahlberg B, Uri T (2003) Effects of the single market on the Austrian insurance industry. Empirical Economics 28: 813-838.

24. Noulas AG, Hatzigayios T, Lazaridis J, Lyroudi K (2001) Non-parametric production frontier approach to the study of efficiency of non-life insurance companies in Greece. Journal of Financial Management and Analysis 14: 19-26.

25. Qiu S, Chen B (2006) Efficiencies of life insurers in China An application of data envelopment analysis.

26. Yang Z (2006) A two-stage DEA model to evaluate the overall performance of Canadian life and health insurance companies. Mathematical and Computer Modelling 43: 910-919.

27. Yao S, Han Z, Feng G (2007) On the technical efficiency of China’s insurance industry after WTO accession. China Economic Review 18: 66-86.