Chapter V

Findings, Conclusion of the Financial Risk Tolerance of Portfolio Investors Using Data Envelopment Analysis
CHAPTER – V
FINDINGS, CONCLUSION, OF THE FINANCIAL RISK TOLERANCE OF PORTFOLIO INVESTORS USING DATA ENVELOPMENT ANALYSIS

Introduction
Having Data Envelopment Analysis it with the analysis and interpretation of the data on the Assessing Financial Risk Tolerance of Portfolio investors using Data Envelopment Analysis, this chapter is presented to highlight the major findings, and the conclusions.

Findings
Financial Goals
1. It is ascertained that the concept that Investment in their Financial Goals is a reason for neutrally interested in their long-term growth potential.
2. It is inferred that the concept that Large Expenses in their Financial Goals is a reason for accepting, set aside savings to cover large expenses like purchasing a home, college tuition fees or a financial emergency.
3. It is found that the concept that Inflation in their Financial Goals is a reason for accepting concerned about the effects of inflation on their investments.
4. It is observed that the concept that Wrong financial goals in there is somewhat uneasily, to adapt when things go wrong financially.
5. It is found out that the concept that Risky Investment in their Financial Goals is a reason for Yes, Somewhat rarely, invested a large sum in a risky investment mainly for the “thrill” of seeing whether it goes up or down in value.
6. It is ascertained that the concept that Borrowed Money to Make an Investment in their Financial Goals is Yes, Somewhat rarely, ever borrowed money to make an investment.
7. It is inferred that the concept that Fixed Deposits in their Financial Goals is a reason for about twice the rate of interest from fixed deposits, the average return you would expect to earn on an investment portfolio over the next ten years.
8. It is found that the concept that *Money value Investment in their Financial Goals* is a reason for somewhat more important that the money value retains its purchasing power.

9. The efficiency of financial goals of portfolio investors doesn’t need a high level of current income from their investments. Investors more interested according to their long-term growth potential (0.27423), shows the efficiency.

10. The efficiency of financial goals of portfolio investors have agree to set aside savings to cover huge expenses like purchasing a home, college tuition fees or a financial emergency is (0.29405) shows the efficiency.

11. The efficiency of financial goals of portfolio investors agreed to concern about their effects of Inflation according to their investments (0.29185) shows the efficiency.

12. The efficiency of financial goals of portfolio investors adapt when things go in somewhat uneasily their financially go wrong (0.23348) shows the efficiency.

13. The efficiency of financial goals of portfolio investors ever invested a large sum in a risky investment mainly for the “thrill” of seeing whether it went up or down in value doesn’t agree in their somewhat rarely to take Risky Investments (0.21696) shows the efficiency.

14. The efficiency of financial goals of portfolio investors somewhat rarely borrowed money to make an Investment (0.17841) shows the efficiency.

15. The efficiency of financial goals of portfolio investors think of the average return they would expect to earn on twice the rate of interest from fixed deposits their investment portfolio over next ten years. (0.29846) shows the efficiency.

16. The efficiency of financial goals of portfolio investors somewhat more important that the money value retains its purchasing power in their Money value Investments (0.23789) shows the efficiency.

**Risk Tolerance**

17. It is observed that the concept that *Risk in their Risk Tolerance* is a reason for opportunity the investment by others.

18. It is found out that the concept that *Willingness to take financial risk in their Risk Tolerance* is a reason for Average risk taker.
19. It is ascertained that the concept *Volatility in their Risk Tolerance* is a reason for accepting the investment by others.

20. It is inferred that the concept *Risk vs. Reward in their Risk Tolerance* is a reason for accepting the investment by others.

21. It is found that the concept *Decline In Value in their Risk Tolerance* is a reason for accepting the investment by others.

22. It is observed that the concept *Equity Investing in their Risk Tolerance* is a reason for accepting the investment by others.

23. It is found that the concept *Knowledge on Risks in their Risk Tolerance* is a reason for accepting the investment by others.

24. It is inferred that the concept *Investments on go up or down in value in their Risk Tolerance* is a reason for accepting 33Percent of the investment by others.

25. It is found that the concept *Personal Investments changed in their Risk Tolerance* is a reason for No changes or changes with no clear direction the investment by others.

26. It is observed that the concept *High Degree of Risk in their Risk Tolerance* is a reason for Portfolio 4 (30 percent High Risk Return), (40Percent Medium Risk Return), (30 percent Low Risk Return)” the investment by others.

27. It is found that the concept *Single Investment in their Risk Tolerance* is a reason for moderately low chance of loss the investment by others.

28. It is ascertained that the concept *Risk and Return in their Risk Tolerance* is a reason for Thirty one Percent to Sixty Percent  funds have available to invest would you be willing to place in investments where both returns and risks are expected.

29. It is inferred that the concept *Government Benefit or obtain a tax Advantage in their Risk Tolerance* is a reason Investors would not take a risk as long as there was more than a 50Percent chance that investors would finish up better off.

30. The efficiency of Risk Tolerance of portfolio investors think of the word risk in a financial context, Opportunity comes to mind fist (0.28965) shows the efficiency.

31. The efficiency of Risk Tolerance of portfolio investors according to their willingness to take average financial risk taker (0.33921) shows the efficiency.
32. The efficiency of Risk Tolerance of portfolio investors can agree to tolerate sharp ups and downs in the short-term value of their investments in return for potential long-term gains (0.28634) shows the efficiency.

33. The efficiency of Risk Tolerance of portfolio investors can agree to prefer an investment that has a 50 Per cent chance of losing five per cent, and a 50 per cent chance of gaining 20 percent in one year, rather than an investment that will assure a 5 percent return in one year (0.30507) shows the efficiency.

34. The efficiency of Risk Tolerance of portfolio investors can agree to comfortable holding on to an investment even though it drops sharply in value (0.27313) shows the efficiency.

35. The efficiency of Risk Tolerance of portfolio investors can agree to willing to take the risks associated with stocks in order to earn a potential return greater than the rate of inflation (0.27643) shows the efficiency.

36. The efficiency of Risk Tolerance of portfolio investors can agree to consider their knowledgeable about the risks and potential returns associated with investing in stocks and other types of securities. (0.25000) shows the efficiency.

37. The efficiency of Risk Tolerance of portfolio investors can 33Percent investments value of all their investments go down before they would begin to feel uncomfortable (0.28084) shows the efficiency.

38. The efficiency of Risk Tolerance of portfolio investors have no changes or changes with no clear direction in their personal investment changed (0.29515) shows the efficiency.

39. The efficiency of Risk Tolerance of portfolio investors in their High Degree of Risk is “(30 percent High Risk Return) (40Percent Medium Risk Return), (30 percent Low Risk Return)” (0.20595) shows the efficiency.

40. The efficiency of Risk Tolerance of portfolio investors is considering placing 25 percent of their portfolio into a single investment. Moderately low chance of loss is expected to earn about twice the investment transaction fixed deposit rate (0.31398) shows the efficiency.

41. The efficiency of Risk Tolerance of portfolio investors in their Risk and Return 31 Per cent -60 Per cent of the funds they have available to invest would they be willing
to place in investments where both returns and risks are expected (0.31938) shows the efficiency.

42. The efficiency of Risk Tolerance of portfolio investors would not take a risk as long as there was more than a 50 per cent chance that investors would finish up better off change in legislation can leave them worse off than they have done nothing with their in mind would you take a risk in arranging their affairs to qualify for a government benefit or obtain a tax advantage (0.26652) shows the efficiency.

**TIME HORIZON**

43. It is found that the concept *that Personal Timeline in their Time Horizon* is a reason for Less Than 5 the investment by others.

44. It is observed that the concept *that Long-Term Investing in their Time Horizon* is a reason for impartial the investment by others.

45. It is found that the concept *that borrowing a large sum of Money at some time in the future in their Time Horizon* is a reason for 50Percent variable, 50Percent fixed the investment by others.

46. It is ascertained that the concept *that Poor Management in their Time Horizon* is a reason for in doubt the investment by others.

47. It is inferred that the concept *that Insurance can cover a wide variety of life’s major risks in their Time Horizon* is a reason for a few time the investment by others.

48. The efficiency of portfolio investors in their financial Time Horizon in their Personal Timeline is unit two, less than five (0.24890) shows the efficiency.

49. The efficiency of portfolio investors in their financial Time Horizon in their Long-Term Investing is unit three Neutral (0.30066) shows the efficiency. Neither long term nor short term.

50. The efficiency of portfolio investors in their financial Time Horizon in their borrowing a large sum of money at some time in the future is unit three 50 Percent variable Interest rate 50 Percent fixed Interest rate (0.33300) shows the efficiency.

51. The efficiency of portfolio investors in their financial Time Horizon in their Poor Management is unit three not sure (0.28304) shows the efficiency.
52. The efficiency of portfolio investors in their financial Time Horizon in their Insurance can cover a wide variety of life’s major risks is unit three Sometime (0.27643) shows the efficiency.

**JOB SECURITY**

53. It is found that the concept *Pay Raise in their Job Security* is not firm according to their pay raise.
54. It is observed that the concept *salary and perks in their Job Security* is a reason for Equal mix of salary and commission the investment by others.
55. The efficiency of Job Security of portfolio investors in their Pay raise is unit three not sure (0.25000) shows the efficiency.
56. The efficiency of Job Security of portfolio investors in their Paid in salary is unit Three Equal mix of salary and commission (0.28304) shows the efficiency.

**FINANCIAL DECISION**

57. It is found out that the concept *Possible Losses or the possible gains in their Financial Decision* are a reason for usually the possible gains the investment by others
58. It is ascertained that the concept *Major Financial Decisions in their Financial Decision* is a reason for somewhat optimistic the investment by others.
59. It is inferred that the concept *Past Financial Decisions in their Financial Decision* is a reason for Medium the investment by others.
60. It is found that the concept *Current Financial Decisions in their Financial Decision* is a reason for average the investment by others.
61. It is observed that the concept *Ability to make Good Financial Decisions in their Financial Decision* is a reason for a reasonable amount.
62. The efficiency of portfolio investors in financial Decision in their Possible Losses or Possible Gains is unit Four Usually the possible gains (0.27313) shows the efficiency.
63. The efficiency of portfolio investors in their Major financial Decision is unit Four Somewhat optimistic (0.31278) shows the efficiency.
64. The efficiency of portfolio investors in their Past financial Decision is unit Three Medium (0.27643) shows the efficiency.
65. The efficiency of portfolio investors in their Current financial Decision is unit Three Medium (0.25330) shows the efficiency.

66. The efficiency of portfolio investors in their ability to make good financial Decision is unit Three a reasonable amount (0.30396) shows the efficiency.

67. When T-Test for Sex was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is insignificant.

68. When T-Test for Place of Birth was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is significant.

69. When T-Test for Marital Status was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is significant.

70. When Pearson’s Chi-Square Test for Age was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is significant.

71. When One Way ANOVA Test for Educational Qualification was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is significant.

72. When One Way ANOVA Test for Area was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is significant.

73. When One Way ANOVA Test for Occupation was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is significant.

74. When One Way ANOVA Test for Brokerage Company was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is significant.

75. When One Way ANOVA Test for Monthly Income was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is significant.
When One Way ANOVA Test for Financially support was applied it was found that the impact of overall financial Risk Tolerance of Portfolio Investors exhibited by accepting the Portfolio investment by the respondents is significant.

SCOPE FOR FURTHER RESEARCH

Considering this was the first step in using Data Envelopment Analysis for such an application there are lots of opportunities for further research. Some of them are:

1. Trying other existing Data Envelopment Analysis Models, which measure non-radial efficiency in their objective function?
2. Making an assessment tool which includes the results from a Data Envelopment Analysis - Demographic-model as well as a Data Envelopment Analysis – Psychological - Model in its calculations.
3. Trying a similar Data Envelopment Analysis model for other attitude measurement purposes.
4. Attempt to adopt this model to be capable of handling data with ordinal scale.
5. Developing Scoring techniques for financially oriented questions.

CONCLUSION

Portfolio means a range of investments. Investors have to make decisions with the concepts of risk and return. Investors would have to work intuitively for a long time on diversification, keeping in mind “putting the eggs in different baskets”.

Investors are of different types. In this study the researchers had collected data from various investors like conservative, moderately conservative, moderate, moderately aggressive and aggressive. Moreover, investor's risk tolerance varies on the basis of age, sex, income; financial goals and so on. At the same time researchers use the TORA tool to analyze the input-output of financial risk tolerance of portfolio investors.

The researcher had contacted investors in top 20 cities in India through Google Document with the guidance of top 10 Brokerage Companies in India. The portfolio of the investors consist of Government Securities, Commercial Papers, Equity shares, Preference Shares, Certificate of Deposits, Debentures, Bonds, Mutual Funds, Postal Savings, Fixed Deposits, Life Insurance, Provident Funds and so on. The investors are tested on Financial Goals, Risk Tolerance, Time Horizon, Job Security and Financial
Decisions. Thus, the investors are classified on the above five based on Conservative, Moderate Conservative, Moderate, Moderately Aggressive, and Aggressive.

FINANCIAL GOALS

As per TORA result 0.03194 are under Conservative Investor Categories, 0.03634 are under Moderately Conservative Investor, 0.09692 are under Moderate Investor, 0.24009 are under Moderate Aggressive Investor categories and 0.27423 are under Aggressive Investor categories according to their long-term growth potential Investments.

As per TORA result 0.05617 are under Conservative Investor Categories, 0.05617 are under Moderately Conservative Investor, 0.08590 are under Moderate Investor, 0.18722 are under Moderate Aggressive Investor categories and 0.29405 are under Aggressive Investor categories according to their huge Expenses like purchasing a home or a financial emergency.

As per TORA result 0.02974 are under Conservative Investor Categories, 0.03634 are under Moderately Conservative Investor, 0.14537 are under Moderate Investor, 0.17621 are under Moderate Aggressive Investor categories and 0.29185 are under Aggressive Investor categories according their concern about the effects of Inflation.

As per TORA result 0.03855 are under Conservative Investor Categories, 0.07159 are under Moderately Conservative Investor, 0.11674 are under Moderate, 0.21916 are under Moderate Aggressive Investor categories and 0.23348 are under Aggressive Investor categories according to their adapt when things financially go wrong.

As per TORA result 0.07599 are under Conservative Investor Categories, 0.10022 are under Moderately Conservative Investor, 0.13987 are under Moderate Investor, 0.14648 are under Moderate Aggressive Investor categories and 0.21696 are under Aggressive Investor categories according to their ever invested a large sum in a risky investment.

As per TORA result are under 0.08150 Conservative Investor Categories, 0.08480 are under Moderately Conservative Investor, 0.15969 are under Moderate Investor, 0.17511 are under Moderate Aggressive Investor categories and 0.17841 are under Aggressive Investor categories according to their borrowed money to make an Investment.
As per TORA result 0.06498 are under Conservative Investor Categories, 0.06608 are under Moderately Conservative Investor, 0.06718 are under Moderate Investor, 0.18282 are under Moderate Aggressive Investor categories and 0.29846 are under Aggressive Investor categories according to their Fixed Deposits.

As per TORA result 0.03855 are under Conservative Investor Categories, 0.06608 are under Moderately Conservative Investor, 0.12996 are under Moderate Investor, 0.20705 are under Moderate Aggressive Investor categories and 0.23789 are under Aggressive Investor categories according to their Money value Investments.

**RISK TOLERANCE**

As per TORA result 0.03524 are under Conservative Investor Categories, 0.04185 are under Moderately Conservative Investor, 0.07709 are under Moderate Investor, 0.23568 are under Moderate Aggressive Investor categories and 0.28965 are under Aggressive Investor categories according to their Risks.

As per TORA result are under 0.03304 Conservative Investor Categories, 0.05066 are under Moderately Conservative Investor, 0.12004 are under Moderate Investor, 0.13656 are under Moderate Aggressive Investor categories and 0.33921 are under Aggressive Investor categories according to their willingness to take Financial Risks.

As per TORA result 0.02863 are under Conservative Investor Categories, 0.02974 are under Moderately Conservative Investor, 0.05837 are under Moderate Investor, 0.27643 are under Moderate Aggressive Investor categories and 0.28634 are under Aggressive Investor categories according to their long-term growth potential Investments.

As per TORA result 0.03304 are under Conservative Investor Categories, 0.06278 are under Moderately Conservative Investor, 0.08921 are under Moderate Investor, 0.18943 are under Moderate Aggressive Investor categories and 0.30507 are under Aggressive Investor categories according to their Risk vs. Reward.

As per TORA result 0.04295 are under Conservative Investor Categories, 0.08480 are under Moderately Conservative Investor, 0.09692 are under Moderate Investor, 0.18172 are under Moderate Aggressive Investor categories and 0.27313 are under Aggressive Investor categories according to their long-term growth potential Investments.
As per TORA result are 0.03304 under Conservative Investor Categories, 0.06498 are under Moderately Conservative Investor, 0.20374 are under Moderate Aggressive Investor categories and 0.27643 are under Aggressive Investor categories according their Equity Investing.

As per TORA result 0.03194 are under Conservative Investor Categories, 0.05837 are under Moderately Conservative Investor, 0.12665 are under Moderate Investor, 0.21256 are under Moderate Aggressive Investor categories and 0.25000 are under Aggressive Investor categories according to their Knowledge on Risks.

As per TORA result 0.05837 are under Conservative Investor Categories, 0.06167 are under Moderately Conservative Investor, 0.13106 are under Moderate Investor, 0.14758 are under Moderate Aggressive Investor categories and 0.28084 are under Aggressive Investor categories according to their Investments on go up or down in Value.

As per TORA result 0.29515 are under Conservative Investor Categories, 0.05617 are under Moderately Conservative Investor, 0.13656 are under Moderate Investor, 0.15308 are under Moderate Aggressive Investor categories and 0.29515 are under Aggressive Investor categories according to their Personal Investments Changed.

As per TORA result 0.04185, 0.04736, are under Conservative Investor Categories, 0.05837, 0.06388 are under Moderately Conservative Investor, 0.11233 are under Moderate Investor, 0.14978 are under Moderate Aggressive Investor categories and 0.20595 are under Aggressive Investor categories according to their High Degree of Risk.

As per TORA result 0.03194 are under Conservative Investor Categories, 0.03965 are under Moderately Conservative Investor, 0.12335 are under Moderate Investor, 0.16520 are under Moderate Aggressive Investor categories and 0.31398 are under Aggressive Investor categories according to their Single Investment.

As per TORA result 0.03414 are under Conservative Investor Categories, 0.04626 are under Moderately Conservative Investor, 0.11344 are under Moderate Investor, 0.16630 are under Moderate Aggressive Investor categories and 0.31938 are under Aggressive Investor categories according to their Risk and Return.

As per TORA result 0.06057 are under Conservative Investor Categories, 0.06828 are under Moderately Conservative Investor, 0.10242 are under Moderate Investor, 0.18172 are under Moderate Aggressive Investor categories and 0.26652 are under
Aggressive Investor categories according to their Government benefit or obtain a tax advantage.

**TIME HORIZON**

As per TORA result 0.02753 are under Conservative Investor Categories, 0.06278 are under Moderately Conservative Investor, 0.10352 are under Moderate Investor, 0.23678 are under Moderate Aggressive Investor categories and 0.24890 are under Aggressive Investor categories according to their personal timeline.

As per TORA result 0.03414 are under Conservative Investor Categories, 0.04405 are under Moderately Conservative Investor, 0.05286 are under Moderate Investor, 0.24780 are under Moderate Aggressive Investor categories and 0.30066 are under Aggressive Investor categories according to their long-term investing.

As per TORA result 0.04515 are under Conservative Investor Categories, 0.04515 are under Moderately Conservative Investor, 0.10903 are under Moderate Investor, 0.14758 are under Moderate Aggressive Investor categories and 0.33300 are under Aggressive Investor categories according to their borrowing a large sum of money at some time in future.

As per TORA result 0.03634 are under Conservative Investor Categories, 0.03965 are under Moderately Conservative Investor, 0.08040 are under Moderate Investor, 0.24009 are under Moderate Aggressive Investor categories and 0.28304 are under Aggressive Investor categories according to their poor management.

As per TORA result 0.03634 are under Conservative Investor Categories, 0.04405 are under Moderately Conservative Investor, 0.08590 are under Moderate Investor, 0.23678 are under Moderate Aggressive Investor categories and 0.27643 are under Aggressive Investor categories according to their insurance can cover a wide variety of life’s major risks.

**JOB SECURITY**

As per TORA result 0.04185 are under Conservative Investor Categories, 0.07930 are under Moderately Conservative Investor, 0.09251 are under Moderate Investor, 0.21586 are under Moderate Aggressive Investor categories and 0.25000 are under Aggressive Investor categories according to their pay raise.
As per TORA result 0.04956 are under Conservative Investor Categories, 0.05286 are under Moderately Conservative Investor, 0.12004 are under Moderate Investor, 0.17401 are under Moderate Aggressive Investor categories and 0.28304 are under Aggressive Investor categories according to their salary and perks.

FINANCIAL DECISION

As per TORA result 0.04185 are under Conservative Investor Categories, 0.04736 are under Moderately Conservative Investor, 0.09361 are under Moderate Investor, 0.22357 are under Moderate Aggressive Investor categories and 0.27313 are under Aggressive Investor categories according to their possible losses or the possible gains.

As per TORA result 0.04846 are under Conservative Investor Categories, 0.05286 are under Moderately Conservative Investor, 0.07269 are under Moderate Investor, 0.19273 are under Moderate Aggressive Investor categories and 0.31278 are under Aggressive Investor categories according to their major financial decisions.

As per TORA result 0.04295 are under Conservative Investor Categories, 0.04295 are under Moderately Conservative Investor, 0.08921 are under Moderate Investor, 0.22797 are under Moderate Aggressive Investor categories and 0.27643 are under Aggressive Investor categories according to their past financial decisions.

As per TORA result 0.04956 are under Conservative Investor Categories, 0.05727 are under Moderately Conservative Investor, 0.09912 are under Moderate Investor, 0.22026 are under Moderate Aggressive Investor categories and 0.25330 are under Aggressive Investor categories according to their current financial decisions.

As per TORA result 0.03965 are under Conservative Investor Categories, 0.06828 are under Moderately Conservative Investor, 0.11233 are under Moderate Investor, 0.15529 are under Moderate Aggressive Investor categories and 0.30396 are under Aggressive Investor categories according to their Risks.
Appendix – I

Bibliography