Chapter I

Introduction
CHAPTER – I
INTRODUCTION

According to Farber, Barry J. “There's no reward in life without risk”. The degree of uncertainty that an investor can handle in regard to a negative change in the value of his or her portfolio. Risk is a four letter word, pregnant with passion and romance, promising change and rebirth. Return is a joy if it is doubled. The efficiency of the investment is measured by the return on investments. While the investors aim at highest legitimate return, they must always test their efficiency of their return on investments. Risk and return are moving in the same direction. When the risk is low, return is also low, when the risk is medium, return is also medium and when the risk is high, the return is also high. Tolerance of risk is the order of the day.

An investor's risk tolerance varies according to age, income requirements, financial goals, and so on. For example, a 70-year-old retired widow will generally have a lower risk tolerance than a single 30-year-old executive, who generally has a longer time frame to make up for any losses she may incur on her portfolio. (www.investopedia.com).

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

Investors are of different types. There are conservative, moderately conservative, Aggressive and moderately aggressive. Moreover, investor’s risk tolerance varies on the basis of age, sex, income, financial goals and so on.

Data Envelopment Analysis is a Linear Programming Technique which is used measuring the efficiency of the decision – making. Usually efficiency is measured in the ratio of input and output. There are many tools are available to measure the efficiency of financial risk tolerance.

They are CCR (Charnes, Cooper and Rhodes) model, CRS (Constant Return to Scale) model, VRS (Variable Return to Scale) and TORA is also tool for this study.

TORA (Toolkit for Oracle) is a free software database development and administration available.
It features a PL/SQL debugger, an SQL worksheet with syntax highlighting, a database browser and a comprehensive set of database administration tools. In addition to Oracle Database Support, for MySQL, PostgreSQL, and Teradata databases has been added since the initial launch. (https://sourceforge.net), (http://torasql.com/News). The researcher wishes to use Data Envelopment Analysis to study the efficiency of the portfolio investors on risk tolerance in India.

**STATEMENT OF THE PROBLEM**

The UN world economic situation and prospects 2014 (WESP) report notes that the Indian economy, which accounts for over 70 Per cent of total output in South Asia, slowed further in 2013. Full-year growth declared to four point eight per cent in 2013 from five point one per cent in the calendar year 2012. Growth was held back by weak household consumption and sluggish investment. India’s economy is projected to grow at a slower- than-expected rate of five point three per cent in 2014. While India’s economic slowdown may have bottomed out, the recovery is likely to be slower than previously expected. A mid recovery in investment as well as stronger export growth will help in the gradual pick-up in GDP. External conditions continue to be challenging for the Indian economy, which experienced significant capital outflows, which led to a sharp depreciation in value of the rupee (ecofin.surge.co.in).

The main aim of every investor is to get the highest return on his investment. When everything in the economy goes right, then investments are like ducks laying golden eggs, but due to globalized present economy, the investors are facing many problems and difficulties in the investments. The economic factors like inflation, purchasing power of money, monetary policy, balance of trade and payments, inflow and outflow of capital, may affect the investors’ confidence. Similarly, the individual and institutional investors may be reluctant to take brave quick decision and there is no guidance, advice or direction for making such investment decisions. The investors sink their hard earned money, for want of any guidance, advice or direction.

In this situation, TORA is a tool which helps to guide advice and direct the investors. The efficiency of financial risk tolerance has to be measured quantitatively. What are the financial goals of the investors? What are the risk tolerances of portfolio
investors? Is there any time horizon? What is the relation between job security and financial risk tolerance decisions? How do the investors take financial decisions?

**SCOPE OF THE STUDY**

This study has a wide scope to measure the efficiency of Financial Risk Tolerance of Portfolio Investors. The findings, and suggestions made by the researcher will help the Portfolio investors to find out their own efficiencies. The general public will have a bird’s eye-view on their investments. The input, output analysis will help the investors to take a concrete action plan. This study will help them to take a decision.

The findings made by the researcher by the application of TORA software, can help the Financial Risk Tolerance of Portfolio Investors to have their self-appraisal reports.

As savings are accumulated, they result in investments. The culmination of investments of a country will provide for better economic development. When savings and investments are ramped up with the guidance of TORA Application, then the standard of living of the people also increases. With a result, the society as a whole will be benefited.

**OBJECTIVES OF THE STUDY**

The overall objective of the study is to find out the efficiency of financial risk tolerance of portfolio investors using Data Envelopment Analysis. From the general objective, the following have been drafted as specific objectives for the study:

1. to study the profile of the selected portfolio investors;
2. to measure and identify portfolio investor Risk tolerance using Data Envelopment Analysis;
3. to relate factors of portfolio investor to Risk tolerance; and
4. to study analysis of portfolio investors namely
   i. Conservative Investor
   ii. Moderately conservative Investor
   iii. Moderate Investor
   iv. Moderately aggressive Investor
   v. Aggressive Investor.
Hypotheses of the Study

The following Research hypotheses have been framed by analyzing the objectives to facilitate better understanding and to keep the focus of the study.

1. There are significant differences between due to Place of Birth of the respondents and overall financial Risk tolerance of Portfolio Investors.
2. There is a difference in Educational Qualification of the respondents with respect to overall financial Risk tolerance of Portfolio Investors.
3. There is an association between Age of the respondents and their overall financial Risk Tolerance of Portfolio Investors.
4. There is a difference between Brokerage Company of the respondents and in respect to overall financial Risk tolerance of Portfolio Investors.
5. There is a difference between Monthly Income of the respondents with in respect to overall financial Risk tolerance of Portfolio Investors.

METHODOLOGY OF THE STUDY

DATA COLLECTION

In order to perform the above said objectives, the researcher used an online survey to collect data. The data was collected through online survey questionnaire sent to the experience investors enrolled in major top 10 share trading concerns, in major top 20 cities in investment in India. The researcher had several rounds of talks with the leading share trading concerns like Karvy Stock broking limited, Angel broking limited, Geogit BNP Paribas and so on. They gave a list of experienced, regular, loyal customer investors. After collecting the e-mail id of the selected investors from the selected top 10 brokerage firms, the researcher used Google Documents as a distributing engine through e-mail.

The researcher has sent the questionnaire on May 2012 through Google Document Google Docs is an easy-to-use online word processor, spreadsheet and presentation editor, that enables the researcher to create, store and share instantly and securely, and collaboratively online in real time. The researcher can create new documents from scratch or upload existing documents, spreadsheets and presentations. There's no software at present to download, and all they works are stored safely online.
and can be accessed by any computer only by the researcher. The researcher sent several reminders to the investors and closed the entry up to April 2013. The total Portfolio Investors are 12,453. The researcher has been sending the questionnaire link

https://docs.google.com/spreadsheet/viewform?fromEmail=true&formkey=dE8wR2NUVDhIR1JRRnJYRkIeDz3Mee6MQ
to 12,453 Portfolio Investors through message. The researcher has been sending various reminders at frequent intervals of time to the 12,453. Among them 617 have respondents positively. In other words, the universe of the study is 12,453 in which 617 have positively. In this study 617 investors were responded in which 326 are male and 291 are female.

QUESTIONNAIRE DESIGN

The questionnaire consists of six main parts. The first part is to cover demography factors it contains twelve questions. Second part is focused on financial goals it contains eight questions; Third part is mainly focused on Risk tolerance it contains thirteen questions; Fourth part is mainly focused on time horizon it contains five questions;

Researcher has decided to study Fifth part is mainly focused on job security it contains two questions; Sixth part is mainly focused on financial decision it contains five questions.

TOOLS USED

Data Envelopment Analysis is a Linear Programming technique which is used for measuring the efficiency of the decision-making units. Usually, efficiency is defined in the ratio of inputs and output, “TORA” is a tool which is used in this study. As well as the researcher used Statistical Packages for Social Sciences (SPSS) with appropriate coding for the drawing of inferences. Tools like T test, one way ANOVA, Pearson’s Chi-Square Test for Independence of Attributes are applied to analyse the data provided.

PRE-TEST

The following are the results of the pre-test

National Securities Depository Limited is the first central Securities depository in India based in Mumbai. It was promoted by institutions of national stature responsible for the economic development of India and has established a national infrastructure of international Standards that handles most of the securities held and settled in dematerialized form in the Capital Market of India.
NSDL is promoted by Industrial Development Bank of India Limited (IDBI), the largest development bank of India, Unit Trust of India (UTI), the largest mutual fund in India and National Stock Exchange of India Limited (NSE), the largest Stock Exchange in India. This NSDL has selected and listed top 20 cities in the matter of investment in India. The following are the list of top 20 cities in the matter of investment in India (https://nsdl.co.in). The List of top 20 cities in India in the matter of Investment are as follows.

### TABLE – 1
LIST OF TOP 20 CITIES IN INDIA IN THE MATTER OF INVESTMENT

<table>
<thead>
<tr>
<th>S.No</th>
<th>City</th>
<th>State/Territory</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mumbai</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>2.</td>
<td>Delhi</td>
<td>Delhi</td>
</tr>
<tr>
<td>3.</td>
<td>Bangalore</td>
<td>Karnataka</td>
</tr>
<tr>
<td>4.</td>
<td>Hyderabad</td>
<td>Andhra Pradesh</td>
</tr>
<tr>
<td>5.</td>
<td>Ahmedabad</td>
<td>Gujarat</td>
</tr>
<tr>
<td>6.</td>
<td>Chennai</td>
<td>Tamilnadu</td>
</tr>
<tr>
<td>7.</td>
<td>Kolkata</td>
<td>West Bengal</td>
</tr>
<tr>
<td>8.</td>
<td>Surat</td>
<td>Gujarat</td>
</tr>
<tr>
<td>9.</td>
<td>Pune</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>10.</td>
<td>Jaipur</td>
<td>Rajasthan</td>
</tr>
<tr>
<td>11.</td>
<td>Nagpur</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>12.</td>
<td>Indore</td>
<td>Madhya Pradesh</td>
</tr>
<tr>
<td>13.</td>
<td>Visakhapatnam</td>
<td>Andhra Pradesh</td>
</tr>
<tr>
<td>14.</td>
<td>Vadodara</td>
<td>Gujarat</td>
</tr>
<tr>
<td>15.</td>
<td>Madhik</td>
<td>Maharashtra</td>
</tr>
<tr>
<td>16.</td>
<td>Coimbatore</td>
<td>Tamilnadu</td>
</tr>
<tr>
<td>17.</td>
<td>Chandigarh</td>
<td>Chandigarh</td>
</tr>
<tr>
<td>18.</td>
<td>Mysore</td>
<td>Karnataka</td>
</tr>
<tr>
<td>19.</td>
<td>Ernakulam</td>
<td>Kerala</td>
</tr>
<tr>
<td>20.</td>
<td>Goa</td>
<td>Western India.</td>
</tr>
</tbody>
</table>

Source: https://nsdl.co.in/
The researcher has taken the top 20 cities in the matter of investment and top ten brokerage firms in India for his research work. Business Map of India provides the information regarding Leading Stock and share Brokerage Firms in India.

The researcher, with the help of the business map of India, Selected top ten leading share brokerage firms in India. The Following are the list of 10 Brokerage Firms in India.

**TABLE – 2**

**LIST OF TOP 10 BROKERAGE FIRMS IN INDIA**

Among all the Indian brokerage companies, the top 10 Brokerage Firms in top 20 cities are listed as below:

<table>
<thead>
<tr>
<th>S.NO</th>
<th>BROKERAGE FIRM</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Kotak securities limited</td>
</tr>
<tr>
<td>2.</td>
<td>Karvy stock broking limited</td>
</tr>
<tr>
<td>3.</td>
<td>Indiabulls</td>
</tr>
<tr>
<td>4.</td>
<td>IL&amp;FS Investmart limited</td>
</tr>
<tr>
<td>5.</td>
<td>Motilal Oswal securities</td>
</tr>
<tr>
<td>6.</td>
<td>Reliance money</td>
</tr>
<tr>
<td>7.</td>
<td>India Infoline</td>
</tr>
<tr>
<td>8.</td>
<td>Angel broking limited</td>
</tr>
<tr>
<td>9.</td>
<td>Anand Rathi securities limited</td>
</tr>
<tr>
<td>10.</td>
<td>Geojit BNP Paribas</td>
</tr>
</tbody>
</table>

*Source: http://business.mapsofindia.com/india-company/top-10-brokerage-firms.html*

The researcher created a file which contains the e-mail id of the top 20 cities investors from top 10 brokerage firms in India. A pilot study was also undertaken to identify the cities, brokerage firms with the limit during April 2012 as the obtained list was not comprehensive. The researcher conducted a pilot study with an interview schedule used Google Documents with a sample of 100 respondents to study the views of the efficiency of Financial Risk Tolerance of Portfolio investors. The data collected through the instrument was tested for its internal consistency of reliability using the Cronbach’s Alpha test which resulted in 0.977 which indicates a good output.
LIMITATIONS OF THE STUDY

Data collected from the various investors, attitude regarding risk tolerance in this study, may vary from time to time, place to place and person to person. As such it cannot be applied further in any other context.

The respondents are very reluctant to disclose their contention on portfolio investment decisions. If at all they have responded, is due to the trust and intimacy with their brokerage companies. This is subject to corrections and modifications.

While considering this, number wise 617 respondents were responded among 12,453 investors in spite of repeated reminders through google.com. The respondents email id was collected from the top 10 brokerage firms in India on the basis of their customers experience, loyalty and intimacy. The findings and suggestions made by the study are applicable to this segment of area and time only and it will not reflect the universe of the study.

In spite of the above limitations, the researcher has taken serious efforts and sacrifices to achieve the objectives of the study.

CHAPTER SCHEME

The chapters of the thesis are grouped under the following chapter:

Chapter I : It clearly visualizes the design and execution of the study. It deals with the statement of the problems, objectives of the study, hypotheses, methodology, and scope of the study and so on.

Chapter II : A comprehensive analysis of the literature on the methodologies of financial risk tolerance assessment as well as introducing the basic definitions of Data Envelopment Analysis.

Chapter III : This chapter deals with the profile of the study area and profile of the Brokerage Company.

Chapter IV : Shows our results with a discussion about the comparative performances of our Data Envelopment Analysis models and the assessment which was made before by the provider of the database. Contains statistical tests such as T test, One way ANOVA, Pearson’s Chi-Square Test for Independence of Attributes are applied to analyse the data.

Chapter V : Based on the analysis of the data, the researcher presents the findings, conclusion and suggestions about the study on the opinion of the portfolio investors.
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