CHAPTER 1

INTRODUCTION

The aim of this chapter is to provide an introduction to the research undertaken and to outline the research themes that guide the study. This chapter also presents a brief description of the Indian economy and the manufacturing sector in India. Since the current study is related to automotive industry in India, the study highlights the main challenges facing the automotive industry in the 21st century and the effects of the global changes on the automotive industry in India are also discussed. In addition, this chapter covers the purpose of the study, research questions and outline of the study.

1.1 BACKGROUND

In today’s ever changing world, the only thing that does not change is ‘change’ itself. Successful companies are always looking at ways in which they can change and develop their business operations. Change can trigger corporate growth, which is essential for sustaining the viability, dynamism and value- enhancing capability of a company. The accelerated rate of change accompanying globalization poses many challenges to the contemporary decision-maker. One of the most critical challenges is to cope with the environmental changes. Decision makers (DMs) face two major challenges in the complex business environment, such as the challenge to combat the environmental threats (such as intensification of competition, declining market, and so on) and that to exploit the business opportunities and take appropriate measures to harness the opportunities or to combat the threats and formulation of strategies accordingly.
The Indian business environment is rapidly changing all over the world. Especially, during the last three decades, there have been drastic and fundamental changes all over the world such that it has become almost impossible for a country to exist in isolation without falling in line with the process of globalisation. The term globalisation has become a catchy-phrase throughout the world and is not a new phenomenon. The new is its speed and reflexivity, given its complex nature and the gravity of impact on the Indian business environment (Bhardwaj and Hossain 2001). The rate of technological and competitive change is so extreme in the manufacturing industry. For instance, the automotive industry faces stiff competition, which is evidenced by copious flow of models emerging in the automotive industry. Companies have introduced new models regularly and their market share has been fluctuating consistently. These observations show the level of volatility in the industry. Companies must be able to diagnose these changes quickly and, most importantly, be able to respond to them to maintain or improve their competitive position (Veronika Kisfalvi 2000).

This requires the most efficient and effective utilisation of its resources. This involves the evaluation of the company’s strengths and weakness in the light of the environmental threats and opportunities while allocating resources. Anecdotal evidence suggests that in business worldwide, efficient allocation of capital is an important and challenging task for DMs. As the business environment becomes increasingly volatile and competitive, making good decisions becomes considerably more complex and consequential than ever before – a situation which enhances the importance of those who take strategic decisions (SDs) (Rentizelas and Tzziralis 2007).
Strategic decision-makers continuously face new and different types of challenges. For instance, a decision maker’s primary aim may be to optimise investment decisions, which in some cases, may be to maximise a single objective function such as the present value of shareholders’ wealth (Copeland and Weston 1992). Nevertheless, as the modern enterprise is a complex organization, multiple objectives, namely wealth maximization, risk, liquidity, social responsibility, environmental protection, employee welfare, and so forth, might also be targeted. Therefore DMs need to be abreast of multidimensional fields so that they can accomplish desired results/goals (Bedi et al 2005). This calls for enhanced understanding of a modern business environment for better insight. As such, decision-making can be regarded as a complex managerial activity (Jose Mathews 2005), as a key for managerial success, and is considered by many to have inspired multiple research studies over the last four decades (Jose Methews 2005, Ford and Gioia 2000, Gunn 2000, Ekenberg 2000, Nutt 1999, Burke and Miller 1999, Papadakis 1998, Dean and Sharfman 1996, Shesh Modh 1994, Mintzberg et al 1976, Cyert and March 1963).

While these studies are useful for providing broad insights into the field of decision-making, it is surprising that only few have investigated investment decision-making in complex business environments, or focused on the sub-field of Strategic Investment Decisions (SIDs). According to Northcott (1995), such work would be vital at two levels: for the future operation of the individual firm making the investment and for the functioning of the economy of the nation as a whole. At the national level, proper planning and allocation of capital investment are essential for an efficient utilisation of other available resources. Poorly placed investment reduces the productivity of labour and materials and sets a lower ceiling on the economy’s potential output.
At the firm level, SIDs have implications for many aspects of operations, and often exert a crucial impact on survival, profitability and growth, since it involves the allocation of substantial financial, human and organisational resources (Sauner Leroy 2004). Therefore, SIDs have a long-term and wise range impact on the firm’s performance, and they can be critical to the firm’s success or failure (Brown and Solomon 1993). The success of SIDs depends on proper selection, screening, evaluation, execution and monitoring of proposals. DMs need to explore and identify a potentially lucrative investment opportunities, analyse various investment alternatives, and select the best one if such decisions are primarily concerned with sizable investments in long-term assets, which may be tangible or intangible, with long-term consequences (Don Dayananda et al 2002).

It is best to select the project which gives positive net present value as well as high expected value to the organisation from the proposals as the goal of the DMs. However the selection of a project is never solely based on financial information and, needs to take account of other non-financial information as well. Nevertheless, information and alternatives are constrained because time and resources to gain information or identify alternatives may be limited. Time constraint simply means that a decision must be made by a definite time or within a particular period. Resource constraint reflects the limits of analytical ability, manpower, money, and priorities. Since decisions must be made within this constrained environment, the major challenge of decision making is about dealing with uncertainty. It is an important task of DMs to reduce the level of uncertainty.
DMs can never have all the information needed to make a decision with certainty, so most decisions involve an undeniable amount of risk (Robert Harris 1998). Therefore, DMs need to address the critical nature of risk and uncertainty in the decision-making process. It is called risk analysis (RA) (Smith et al 1994). For making good business decisions in the contemporary business environment, DMs should meet some prerequisites viz. identification of risk and uncertainty associated with the decisions, assessment of their impact and possible outcomes, contingency plans and so on (Alessandri et al 2004). The degree of association between risk, and uncertainty varies from one decision to another decision, and in such a case, may determine the decision-makers’ choice of models, techniques, and processes used for making the investment decisions (Ibid 2004).

In seeking to make optimal decisions, DMs often rely more on analytical and quantitative approaches. Yet, as uncertainty increases, DMs are unable to quantify the possible outcomes; hence they are forced to rely on judgment and past experience to a greater extent, i.e. employing a more qualitative approach to make the decision, even though they still attempt to go through the process of an analytical and quantitative analysis (Courtney et al 1997, Alessandri 2003). Thus, the Strategic Investment process and its associated methods of financial analysis depend ultimately upon what influences the behaviour of the decision maker in allocating resources among competing investment alternatives in a given context (Pike 1988). The constantly increasing complexity of business environment, exchange rate fluctuations, and difficulty in predicting competitor behaviour, the increasing pace of change in technology have also raised the importance of risk analysis in SIDs (Ho and Pike 1992).
Typically, SIDs are usually larger in scale, risky, and hard-to-reverse, with significant long term consequences on firm’s performance (Papadakis and Barwise 2002). Identification of risk is the most challenging task faced by the decision maker, but there is also a need to measure the risk properly. After measuring the risk, the decision maker needs to make a judgement about whether some or all of the inherent risk can or should be avoided, reduced or tolerated before the risk-return trade off decision is made (Ho and Pike 1991). In response to this concern, a wide variety of risk analysis tools has been developed to make better decisions.

There are numerous studies in the capital budgeting literature regarding various techniques used in risk analysis [for example, Marshall Sarnat (1979), Wong, Farragher, and Leung (1987), Pike (1988), Pandey (1989), Cooper et. Al (1990), Thomas Klammer et. Al (1991), Smith D J (1994), Jog & Srivastava (1995), Chadwell-Hatfield et.al (1997)Kester & Chong, (1998), Kester et. Al, (1999), Farragher et.al (1999), Payne et. Al. (1999), Manoj Anand (2002), Lazaridis (2004), Todd et.al (2004), Alkaraan & Northcott (2006), Ashish Kumar & Bhavin Shan (2006)] and the results indicate that the issue of assessing risk in SIDs has grown at a large extent and complexity. But these surveys usually asked the respondents to rank different techniques (or categories of techniques) as primary and secondary and reported the results with percentages, not with statistical comparison. These surveys covered the risk handling practices and its related problems as part of broad based surveys. There have been few studies (for example, Ho & Pike (1991, 1992 & 1998), Lawerence Peter Shao (1996)) which have covered the matter in detail. However, it is perhaps surprising that this researcher could not find any study specifically on manufacturing companies in India. Further, no research has been conducted the influence of non-financial measures on the extent of usage of risk analysis techniques in SIDs. These research gaps motivated to focus on the risk analysis practice and its
related problems in manufacturing companies in India. Therefore, this study investigates the extent of usage of risk analysis techniques in the SIDs. This study also discovers the influence of non-financial measures on the extent of usage of Risk analysis (RA) on SIDs. In addition, this study aims to propose and test a model of influence on the extent of usage of RA in SIDs with reference to automotive industry in India. The reason for choosing this sector is discussed in the following section.

1.2 AUTOMOTIVE INDUSTRY IN INDIA

The Indian economy has had robust growth since the introduction of economic reforms by the government of India in 1991. These reforms were a comprehensive effort consisting of three main components, namely, liberalisation, privatisation and globalisation. These reforms included various measures like deregulating the markets, trade liberalisation, financial liberalisation, tax reforms and opening up the economy to foreign investments and so forth. All these policy initiatives drastically changed the economic set-up of the country and integrated it with the rest of the world. Further, these initiatives placed India in a globally competitive position. The Indian Economy is maintaining the average growth rate of real GDP during the last five years at 8.6 percent (CMIE 2008) which makes India the second fastest big emerging economy, after china, in the world and among the world’s most attractive destinations for business and foreign investment opportunities. This scenario has had a fundamental effect on the contribution of manufacturing sector to the country’s GDP. Though the service sector contributes at a higher level, the manufacturing sector too plays a significant role in the Indian Economy, contributing nearly 16 per cent to the GDP (in 2005-06), with an average of 12 per cent in the last five years from 2000-01 to 2004-05 (CMIE 2006). It is due to the increasing presence of multinational companies, scaling
up of operations by domestic companies and an ever-expanding domestic market.

India has all the requisite skills in product, process and capital engineering, with a long manufacturing history, higher education system, cheap and skilled manpower which is attracting a number of companies, operating in diverse industries and thereby making India a global manufacturing powerhouse. The automotive industry has been offering notable contribution to the GDP of India. The automotive industry, in many countries, is a driver of the economy as it has deep forward and backward linkages with several industries (Venugopal and Gayithri 2006). The contribution of the automotive industry to India’s GDP has risen from 2.77 per cent in 1992-93 to 5 per cent in 2006-07. The Indian automotive industry is the eleventh largest in the world with an annual production of approximately 2 million units. At present, the industry in India is providing direct and indirect employment opportunities to about 13 million individuals. This industry is positioned as the second largest in the world in terms of cost-competitiveness (Ministry of Heavy industries, India 2008). The Indian automotive industry comprises of the automobile manufacturers and the auto component manufacturers.

The industry has the characteristics of large scale, capital intensive and technology driven product cycles (Heitger et al 1999). Because of these characteristics, only some countries have concentrated on automotive industry and they account for about 90 per cent of the world production. Major companies measured in terms of employment, production, and market share are located in United States, Germany and Japan, followed by Italy and France. Recently, Korean companies have also joined in the list of leading automobile manufacturing counties. Further, the auto industry is often thought of as one of the most globalised of all industries (Venu Gopal and Gayithri
2006). Therefore, Peter Drucker had called it as “the industry of Industries”. Significant growth has taken place in Indian automotive industry since 1980s.

Till 1980, the Indian car market was dominated by two localized versions of ancient European designs - the Morris Oxford, known as the Ambassador, and an old Fiat. This was mainly due to the Indian government's complex regulatory system that effectively banned foreign-owned operations. Within this system referred to informally as the "license raj", any Indian company should get a license from the government to import technology or products which is needed for them. Obtaining the required licenses is difficult which stifled automobile and component imports, creating a low volume high cost car industry that was inefficient, unprofitable, and technologically obsolete. The first phase of economic reforms began in the mid 1980’s. For example, the first reform initiative was the entry of the Maruti Udyog Limited (MUL) as a joint venture between Susuki of Japan and Government of India. The Maruti Udyog Limited launched a fuel efficient car (model is called "Maruti 800"). This model became an instant success (Viswanathan Krishnan).

**Globalisation and Transformation of the Indian Automotive Industry:** In continuation of the economic reforms initiated in the mid 80s, the newly elected Indian government in 1991 had to face balance-of-payments crisis which is initiated a series of economic liberalization measures designed to open the Indian economy to foreign investment and trade in 1991. These new measures dismantled the license raj and made it a trouble-free process to have a license for Indian firms to import machinery and technical know-how and so forth. In 1993, the government had implemented its liberalization measures with significant reductions in the import duty on automobile components. These measures have spurred further growth of the Indian economy in general, and the automotive industry in particular. For example,
the export earnings from the industry have grown on an average 30 per cent per year during the last five years. Almost all the global major players have set up their manufacturing facilities in India.

**Overview of Performance of the Indian Automobile Industry:**
According to the Society of Indian Automobile manufacturers, the performance of the industry is discussed under two heads namely domestic and export sales.

- **Domestic Sales Performance in 2007-08:** The cumulative growth of the Passenger Vehicles segment during FY 2007-08 was 12.17 percent. During the same period Passenger Cars grew by 11.79, Utility Vehicles by 10.57 percent and Multi Purpose Vehicles by 21.39 percent. The growth rate of commercial vehicles segment was at 4.07. While Medium & Heavy Commercial Vehicles (MHCV) declined by 1.66 percent, Light Commercial Vehicles (LCV) recorded a growth of 12.29 percent. Three Wheelers sales fell by 9.71 percent with sales of Goods Carriers declining drastically by 20.49 percent and Passenger Carriers declined by 2.13 percent during FY 2007-08 compared to the last year. Two Wheelers registered a negative growth rate of 7.92 percent during this period, with motorcycles and electric two wheelers segments declining by 11.90 percent and 44.93 percent respectively. However, Scooters and Mopeds segment grew by 11.64 percent and 16.63 percent respectively.

- **Exports:** Automobile Exports registered a growth of 22.30 percent during the current financial year. The growth was led by two wheelers segment which grew at 32.31 percent. Commercial vehicles and Passenger Vehicles exports grew by
19.10 percent and 9.37 percent respectively. Exports of Three Wheelers segment declined by 1.85 percent.

According to the Society of Indian Automobile manufacturers, the market share of Automobile segments is given in Table 1.1.

**Table 1.1 Domestic market share for 2008-09**

<table>
<thead>
<tr>
<th>Segment</th>
<th>Per Cent</th>
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<tbody>
<tr>
<td>Passenger Vehicles</td>
<td>15.96</td>
</tr>
<tr>
<td>Commercial Vehicles</td>
<td>03.95</td>
</tr>
<tr>
<td>Three Wheelers</td>
<td>03.60</td>
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<tr>
<td>Two Wheelers</td>
<td>76.49</td>
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**Present Scenario of Automotive Industry in India:** The Global meltdown has affected almost all the industries across the world. Indian automotive industry is not an exception to this. At present the industry is suffering due to the following problems:

- Interest rate fluctuations have affected the ability of the consumers to avail the auto finance facility from financial companies and commercial banks.
- Global slowdown has increased the layoffs which in turn had affected the sales.

As a result excess inventory of the automobile companies in India which in turn made them cut down the working days by closing the factory for two or three days a week. However, the economy is expected to revive after one year from now this offer cope to the industry to come out with the present slowdown. This is the right time for the companies to spend their time
and money and efforts in R&D which will help them launch new models with value added features. For instance, the launch of Nano (Rs.100,000) car by Tata Motors has received huge number of applications from the consumers who like to upgrade from the use of two wheelers to the use of four wheelers. This has created waves in the automobile industry in the entire world. The section has examined the current situation in the automotive industry. It has also highlighted the increasing complexity of the business environment of automotive companies operating in India. It prompted increasing interest in Risk Analysis in SIDs in the industry.

**Need for SIDs in the Automotive Industry:** Following are the factors which contribute to the need for SIDs in the automotive industry:

1. The automotive industry, in many countries, is a driver of the economy as it has deep forward and backward linkages with several industries (Venugopal and Gayithri 2006). Therefore, there is a need for capital expenditure projects in this industry.

2. The industry has the characteristics of large scale, capital intensive and technology driven product cycles (Heitger et al 1999) which is similar to SIDs characteristics.

3. Automotive industry in India has emerged as a “Sunrise sector” in our economy within two decades of its liberalisation. The automotive industry is a volume driven industry and certain critical mass is a prerequisite for attracting the consumer that needed higher investment in R&D and new product development which is the life line for achieving and retaining the competitiveness in the industry. This in turn, depends on the company’s capacity and the speed of the company to innovate and upgrade. Resulting this, the
company has to invest large amount of money, which brings RA into this context.

4. LPG reforms have altered the automotive business environment in such ways that are very difficult to comprehend. There are tremendous changes taking place in the automotive business environment, which have created significant opportunities for automotive companies. It also puts pressure on them to enhance quality, improve styling, increase organizational efficiencies and drive innovative features into their products in an effort to attract customers and expand into new markets and so forth. All these threats must be converted into opportunities to keep a competitive position in an industry. For this, automotive companies keep pace with global opportunities through strategic investments that transform their businesses and competitive positions.

5. An increasing complexity of the business environment of automotive companies operating in India (technology changes, consumer preferences, intense competition, and so forth) has prompted increasing interest in RA in SIDs to maintain competitive position.

1.3 RESEARCH OBJECTIVES AND QUESTIONS

SIDs are among the most important and multifaceted of all business decisions (Smith 1998) which determine the overall direction of any business. A variety of techniques have been developed to assist in making SIDs which may be classified into three categories namely evaluation techniques, risk analysis techniques and management science techniques (Pike 1984). Net Present Value (NPV), Internal Rate of Return (IRR), Accounting Rate of Return (ARR), and Payback Period (PBP) are the most commonly used
evaluation methods in capital budgeting decisions (Brealey et al 2001). These techniques can be classified into naïve and sophisticated techniques (Haka et al 1985, Pinches 1994). The Net Present Value (NPV), Profitability Index (PI) and Internal Rate of Return (IRR) methods are considered to be discounted cash flow (DCF) methods. The Payback Period (PB) and Average Accounting Rate of Return (ARR) methods are so-called non-DCF methods. From a pure theoretical point of view the NPV is considered to be the most accurate technique to evaluate projects. Yet, it is also the most sophisticated of the five, followed by the IRR method. Both the non-DCF methods are considered to be less accurate, of which the PB method is the least sophisticated.

Comparing survey results of capital budgeting practices among the companies over time, generally seems to show that the analytical techniques used by executives have increased in terms of sophistication. No matter what techniques are used, all techniques rely on estimated cash flows; the forecast of many, often inter-related variables and these are almost invariably uncertain (Smith 1994). Risk emanates from the uncertainty encompassing these projected variables (Savvides 1994). Therefore, assessing the economic prospects of a proposed investment proposal gives greatest challenges to the decision maker.

Risk is an inherent characteristic of all SIDs such that there is some degree of uncertainty closely associated with future economic outcomes. Decision makers should be aware that making any decision demands the acceptance of some risk, while some minor risks are taken with the expectation of appropriate rewards; often there are a host of hidden or implicit risks that vitiate the risk reward equation. It is therefore timely to consider the impact of sophisticated risk analysis approaches on SIDs. Although the increasing dynamism and complexity of the modern business environment has put risk analysis in the priority list and on the agenda of all SIDs contexts, the level of risk analysis conducted varies from one to another organisation.
Further, the uses of risk reduction/elimination methods also vary. Such variation in the use of methods, techniques and approaches are due to industry, firm and decision-makers’ characteristics. This discussion leads to the following research objectives and questions:

1. To examine the use of risk analysis in SIDs in automotive Industry in India.
2. To what level of organisational characteristics (OC) influence on the extent of usage of risk analysis in SIDs.
3. To what level of individual characteristics (IC) influence on the extent of usage of risk analysis in SIDs.

From the integrated perspective of the research scenario portrayed so far, five relevant research questions have emerged for this study. The same is summarised as below:

1. What is the level of risk analysis conducted within the organisation in the SIDs context in the automotive companies in India?
2. Which risk measurement techniques do companies use in making SIDs, and to what extent does such usage vary between the automotive companies in India?
3. Which risk reduction methods do companies follow to reduce/eliminate risk in the SIDs in the automotive companies in India?
4. Do the OC influence on the extent of the usage of RA in SIDs?
5. Does the IC influence the extent of the usage of RA in SIDs?
1.4 OUTLINE OF THESIS

This research thesis has been divided into five chapters.

The first chapter being introductory in nature covers the backdrop of this research study. The chapter also provides a brief description of the context of the current study that highlights the main challenges facing the automotive industry. The effects of the global changes on the automotive industry in India are examined and why it is such a useful environment in which to study the use of risk analysis in strategic investment decision-making is highlighted. Further it covers the objectives, research questions, and outline of the study.

The second chapter reviews the related existing literature on the extent of the usage of risk analysis in Strategic Decision Making and identification of the influencing variables on the same. It also presents the research hypotheses and research model of this study.

The third chapter describes the methodology adopted for the research. Also it provides an explanation and justification of the methods, strategies, designs and/or approaches used in this research.

The fourth chapter presents the set of results from the survey. It provides the current practices of risk analysis in SID context in automotive industry. In particular, the level of risk analysis, risk handling techniques and methods adopted for adjusting risk. In addition, relationship between OC, IC and the extent of the usage of risk analysis in SIDs are discussed.

The fifth chapter reveals the research findings, conclusion and scope for further research. And the last part of the report consists of references and appendices.