CHAPTER 3
LITERATURE SURVEY AND RESEARCH DESIGN

In this chapter, an effort is being made to study the existing literature in a detailed and systematic manner so that the research gap could be identified. For a structured presentation of the literature review, it has been classified into three distinct categories, namely, capital account liberalization, exchange rate management and corporate risk management.

The first part deals with the review of literature on capital account liberalization and the pre-requisites for moving towards capital account convertibility. The literature survey leads to the identification of major macroeconomic factors affecting exchange rates. Then, the review of literature on exchange rate management and corporate risk management is done to identify the research gap. On the basis of this gap, the objectives and the scope of the study have been presented. Data sources, methodology, sample selection, collection of data, data analysis and limitations of the study have been presented under separate sections.

3.1 Review of literature on Capital Account Liberalization

Most economists agree that in the past two decades, the world has slowly but steadily moved towards greater capital account openness. While this trend may have been deeper in developed countries, it is not necessarily restricted to them. In the words of Michel Camdessus (1988), the then IMF’s managing director, “there is considerable amount of work to be done at the national and international level to ensure that the pre-conditions for the freedom of capital movements are in place. The big picture is clear. There is an irresistible trend towards Capital Account Convertibility".
Economic theory suggests a number of benefits that may accompany capital account liberalization. Open capital account can foster a more efficient allocation of resources, provide opportunities for risk diversification and help promote financial development.

There is a large and growing literature that tests the potential benefits of capital account liberalization through its influence on long-run growth and development, by directly investigating the empirical relationship between capital account liberalization and economic growth.

Almost all of these studies augment a basic growth model that includes variables such as the investment, population growth, the level of GDP and the level of schooling.

Quinn's (1997) is one of the first studies to identify a positive result between capital account liberalization and growth. Quinn's empirical estimates suggest that change in capital account liberalization has a strong significant effect on growth in real GDP per capita in his cross section of 58 countries over the period 1960 to 1989.

Klein and Olivei (1999) find a positive effect of capital account liberalization on growth among industrial countries, but they do not find evidence that capital account liberalization promotes growth in non-industrial countries. They conclude, based on a cross section of 82 developed and developing countries, that beneficial effects of Capital Account Liberalization are achieved only in an environment where there is a constellation of other institutions that can usefully support the changes brought about by the free flow of capital.

Bailliu (2000) also finds that Capital Account Liberalization spurs growth by promoting financial development.
The growth effects of Capital Account Liberalization depend upon the level of
development of an economy is supported by the results presented in Edwards

Arteta, Eichengreen and Wyplosz (2001) find that effect of Capital Account
Liberalization across countries depends on the degree of macroeconomic
stability.

Bekaert, Harvey and Lundblad (2001) examine the impact of Capital Account
Liberalization and stock market liberalization on economic growth. They find
that liberalization leads to increase in GDP.

Klein (2003) provides evidence that Capital Account Liberalization significantly
contributes to growth among middle-income countries but not among the poor
or the richest countries. This finding that the middle income countries benefit
from Capital Account Liberalization through capital flows is consistent with the
view of Rodrik (1999) that countries require adequate institutions, regulatory
policies and supervisory agencies to benefit from capital flows.

Dr Y.V. Reddy (2000) states that there is a broad consensus on Capital
Account Liberalization but it should be gradual, well sequenced and undertaken
in conjunction with several other measures at the macro and micro level. He
advocates limiting external debt, especially short-term and adequate foreign
exchange reserves. He stated, "Optimal level of reserves and their
management is very critical to overall capital account management, especially
the sentiments prevailing in the foreign exchange market".

Ashok K. Lahiri (2004) states, "Important lesson that emerges from the East
Asian crisis is that the interaction between highly liquid global markets and
poorly supervised financial systems can lead to a financial disaster. At the time
of crisis, all crisis-affected countries had weak supervision and a somewhat
inadequate reporting system. Relative openness on the Capital Account led to
a lending boom and the eventual bursting of an asset bubble. The solution is
not in postponing liberalization, but appropriately sequencing capital account liberalization and financial sector reforms.

In the light of the above views, it is understood that capital account liberalization is very important for mobilizing private foreign capital and it is very essential for growth and progress of developing countries. The literature survey further reveals that there is a need for sequencing of capital account liberalization, but the ways and means of sequencing the capital account liberalization is not shown.

An expert committee, popularly known as the Tarapore Committee was appointed by RBI to examine along with other things the sequencing of capital account liberalization and the pre-requisites for moving to capital account convertibility.

The recommendations of the Tarapore Committee and the pre-conditions set out for Capital Account Liberalization are studied in detail in the following Chapter No.4. These recommendations have major implications on factors affecting the exchange rate of the Rupee against the Dollar.

Now, the literature available on Exchange Rate Management is studied in detail.

3.2 Review of literature on Exchange Rate Management

Prof. H.K. Pradhan (1993) in his paper on exchange rates discusses India’s balance of payment problems and devaluation. Currency devaluation generates price incentives for exports in two ways: it increases the domestic currency price or reduces the foreign currency prices of exports (or a combination of both). International evidence suggests that the supply elasticities of the primary product are extremely low and the external price and income elasticities are also low. The low external price and income elasticities would imply that countries couldn’t boost the volumes of exports at the given US dollar price.
Arvind Virmani (1997) stated that private capital flows transformed the foreign exchange markets. He argued that capital flows generally had a long-term horizon and must therefore be based on projections about future development of the economy. Expectations therefore entered the picture. From experience we have learnt that political uncertainty, social upheaval and perceptions of Governmental indecisiveness had a negative effect on expectations.

The effect of private investment flows is that the exchange rate and its future evolution are important factors in determining the profitability of foreign investment and therefore on the investment flows. This introduces circularity into the determination of exchange rates. Virmani further pointed out that trade imbalance and expectations have a major impact on exchange rates.

Arvind Virmani (1999) also warned that fiscal deficit had risen dangerously high and it would have an impact on the current account deficit as it was due to increase in defense imports.

The recent literature (Patnaik, 2003; Calvo & Reinhart, 2002; Reinhart & Rogoff, 2002) has argued that India has had highly limited currency flexibility over the 1979-2002 period. Sometimes there has been a fixed exchange rate peg (such as the period in the 1990s where the exchange rate was 31.37 per Dollar). This literature has shown that while India made a great deal of progress on removing restrictions on the current account and capital account in recent decades, little has changed in terms of exchange rate flexibility.

Patnaik (2003) discusses that net capital inflows during 1993 to 1995 were met by unsterilized intervention: RBI purchased foreign exchange to keep the nominal exchange rate constant and thus to keep the real rate from appreciating. The paper concludes that as a consequence, reserve money and M3 expanded, leading to higher inflation. The paper then contrasts this with the second episode of capital flows starting from April 2002, which was handled by
sterilized intervention and reduced monetary growth. Inflation remained low but the gap between Indian and global short-term interest rates widened and consequent arbitrage inflows into India. This increased the currency volatility.

RBI faces three paths for implementation of India's de-facto peg to the US Dollar and reducing the volatility in exchange rates. They are:

1. Direct intervention on the currency market
2. Intervention on the currency market at the behest of RBI through other banks such as State Bank of India
3. Indirect instruments: money supply, interest rates and administrative controls.

One view advanced by several distinguished economists, including Prof. Kenneth Rogoff of IMF during his visit to India, is that the Rupee should be allowed to appreciate freely in line with market trends. According to this view, there is no strong case for RBI's intervention as reserves are already very high. RBI's purchases create substantial additional domestic liquidity, which may be destabilizing in the long run. There is also no evidence that unconstrained appreciation or volatility would affect growth prospects or lead to any other macro-economic problem.

An exactly opposite view held by the Confederation of Indian Industries is that RBI should intervene more aggressively in the market to further reduce the degree of currency appreciation. The main argument in favour of this view is that India must maintain its global competitiveness, particularly in relation to China which has a fixed exchange rate with the dollar and whose currency has been depreciating along with it.

A third view that has been recently put forward by a leading economic journal (Economic Times) is that RBI should pursue what it has referred to as a policy of "calculated volatility". It has been argued that the present policy of controlled volatility has provided virtually risk-less gain to market participants since the
rupee has been expected to appreciate substantially and continuously over the past few months. According to this view, in order to prevent excessive capital inflows during this period, RBI should have allowed the exchange rate to quickly "overshoot" the targeted exchange rate of say Rs.46.20 (or any other number) to say Rs.45.50. Thereafter, RBI should have allowed the rupee to depreciate slowly to be above the targeted number over a period of the next few months. In essence, this view is akin to a policy of fixed exchange rate within a wider band. An implicit assumption is that the level (whatever it is) is either already known or will be known to the market as it is approached. RBI's past experience does not suggest that these assumptions are valid. It should be recalled that there have been periods when rupee exchange rates have been relatively more volatile and movements have been sharper. However, during periods of sharper appreciation, instead of flows declining and demand for foreign currency rising, RBI noticed that actual market behaviour was the opposite. The opposite was true during periods of sharp depreciation.

Dr Bimal Jalan (2003), stated that a fixed exchange rate regime (even with a currency board) was clearly out of favour. He quoted the Brazilian, Argentinean and Asian crisis and said even a strong Board type arrangements of a fixed peg vis-à-vis the Dollar was found to be unviable. He said the dominant view for most countries - floating or flexible exchange rates - was the only sustainable way of having a less crisis prone exchange rate regime. In regard to the desirable degree of flexibility in exchange rates, opinions and practices vary. But a completely "free float" without intervention is clearly out of favour except in respect of a few global or reserve currencies like the Euro and the Dollar. Even in respect of these currencies, concerns are expressed at the highest levels when the movement is sharp in either direction. Studies by IMF and several experts also show that by far, the most common exchange rate regime adopted by countries including industrial countries, is not a free float. Most of the countries have adopted managed floats with no pre-announced path and Central Bank intervention periodically.
In view of the considerable turbulence and volatility faced by foreign exchange markets in several countries in the recent past, policy issues relating to the management of the external sector, particularly the appropriate exchange rate systems, have figured prominently in ongoing discussions on international financial architecture in various fora, such as the International Monetary Fund, the World Bank, Financial Stability Forum and the Bank of International Settlements. India has been participating in all these discussions along with Central Bank Governors and Finance Ministers of Industrial and other developing countries.

Floating rates, capital movement volatility, massive changes in technology and integration of worldwide markets across different time zones, are relatively new phenomena. India is still on the learning curve. Recent changes have brought tremendous benefits to India by removing capital and technological constraints to developments. As new horizons open, we are faced with new challenges on exchange rate volatility (Y.V. Reddy, 2004).

The study of Golakanath (2003) has recommended for exploring non-linear modelling technique to understand the exchange rate behaviour of the Rupee against the Dollar, but till now no study is available as recommended by him. This study after establishing the relationship between macroeconomic variables and the exchange rate of the Rupee against the Dollar using univariate and multivariate regression analysis, builds an exchange rate forecasting model.

### 3.3 Review of Literature on Corporate Risk Management

The modern finance theory (as reflected in the capital asset pricing model and the arbitrage pricing theory) regards hedging activities aimed at a reducing total corporate risk (measured by the variability of the firm's cash flows) as irrelevant. Under certain plausible conditions, the capital asset pricing models as well as the arbitrage pricing theory show that unsystematic (or diversifiable or unique) risks are not priced in the financial market. Put differently, unsystematic risk has no bearing on the required rate of return. Only
systematic risk (or market risk) is priced and, hence, has an influence on the required rate of return.

Since the price of systematic risk is identical for all the participants in the financial market, a firm does not benefit its shareholders by laying it off in the financial market. Thus, according to this line of reasoning, in an efficient market the expected net present value of any risk hedging activity like taking insurance cover or buying a forward contract is zero. As Alan C Shapiro and Sherid Titman say: “Management decisions to insure or hedge assets appear, at best, neutral mutations (having no effect on the value of the firm). At worst, such actions, to the extent they are costly, are viewed as irrational behaviour penalizing corporate stockholders”. This argument implies that company-specific risks (or unsystematic risks) do not hurt the shareholders, as long as they do not jeopardize the existence of the firm.

Prasanna Chandra (1999), however, questioned the above view. Although unsystematic risk may have no bearing on the required rate of return in the financial market, unmanaged unsystematic risk can and often does hurt shareholders. In terms of the DCF model of firm valuation, unsystematic risk may lower the expected cash flows (the numerator in the DCF model), even though it has no influence over the discount rate (the denominator in the DCF model).

Why does higher total risk lower the expected cash flows of the firm? Other things being equal, a firm with a high total risk exposure is likely to face financial difficulties, which tend to have a disrupting effect on the operating side of the business. Inter alia, a distressed financial condition will detract from value because of adverse incentives, weakened commitment, and diminished tax shelters.

In today's world, managing corporate risks is a daunting task. In coping with this challenge corporate managers will have to bear in mind the following interrelated guidelines of understanding the firm's strategic exposure, employing a judicious mix of real and financial tools, proactively managing
uncertainty, aligning risk management with corporate strategy and learning when it is worth-reducing risk.

Richard Friberg (1999), in his book "Exchange Rates and the Firm" says, "exchange rate is part of wider macroeconomic risks, especially those relating to domestic interest rates, inflation rates and political developments. Individual firms ward off adverse effects of exchange rate fluctuations on their asset values and net profits by taking recourse to instruments of hedging — forwards, futures, swaps and options".

A number of studies have attempted to provide insights into the practices of risk management within the corporate sector. Reports by Price Waterhouse (1994, 1995) describe corporate practices in the wider area of treasury management. Glaum/Roth, 1993; Batten, 1993; Aabo, 1999; and Greenwich Treasury Advisors, 1999; focus on the exchange risk management practices of multinational corporations.

Bodnar, 1995, 1996, 1998; Grant/Marshall, 1997; Howton/Perfect, 1998 and Bodnar/Gebhardt, 1999; have reported on the use of derivatives for risk management in their papers. These empirical studies are interesting not only from an academic standpoint but they also provide managers with information on the current practices of other firms. This kind of information is valuable since it allows managers to critically assess and analyse their own strategies. Cohen/Wiseman (1997) explained which questions should be asked in this context: "Companies should use this information to assess where they stand in comparison with other companies. The findings of the studies do not necessarily represent best practice, but they should be used as a guide for a treasury to compare with other organisations and their practices.

Andrew P. Marshall (1999) surveyed the foreign exchange risk practices of 179 companies. The main objective of managing foreign exchange risk was found to be minimization of fluctuation in earnings and seeking certainty of cash flows. This survey established that companies placed more emphasis on transaction risk management.
Claudio Loderer and Karl Pichler (2000) surveyed 96 firms listed in Zurich Stock Exchange. This survey found that the firms were unable to quantify the currency risk profile. These firms failed to understand properly why currency risk reduces firm value. The results found in this survey raised many questions for future research. One of the most challenging was the reduction of economic exposure with on-balance-sheet instruments on the one hand and micro hedging of transaction exposure with currency derivatives on the other.

Martin Glaum (2000) surveyed 74 companies in Germany and found that the majority of the firms managed their transaction exposure. Most firms adopted a selective hedging strategy based on exchange rate forecasts (73%). Only a small minority of firms did not hedge foreign exchange risk at all (11%). A few companies hedged their transaction exposure completely (16%).

The studies cited above explain that there is a need for hedging the foreign exchange risk by corporates using the available derivative products, but there is no research study in India showing the hedging of risk by corporates and their methodology etc.

3.4 Research Gap
From the literature review on Capital Account Liberalization, exchange rate management and corporate risk management, it is clear that various studies have been made but the direction of these studies lack the following:

(i) Sequencing of Capital Account Convertibility and the pre-conditions required for Capital Account Convertibility in India.

(ii) Identification of various macroeconomic factors affecting exchange rate of the Rupee against the Dollar and the relationship of these factors with the exchange rates.

(iii) Exchange rate forecasting based on non-linear statistical models.
(iv) Survey of Indian companies for studying their foreign exchange risk management practices.

3.5 Justification for the study

Under the present condition of available literature and the gap in the existing studies, there is a need to have a detailed study, which should incorporate the sequencing of capital account convertibility and the pre-conditions required for capital account convertibility in India. There is a close link between capital account convertibility and the various macroeconomic factors affecting the exchange rate of the Rupee against the Dollar. The study aims to identify the macroeconomic factors affecting the exchange rates and the relationship between them. Further, there is a need to look into the recent volatility in the exchange rate of the Rupee against the Dollar. Exchange rate forecasting is attempted based on statistical models using the identified macroeconomic factors. There is a need to look into the foreign currency risk management practices of the Indian companies, which will help the companies manage their foreign currency risk in a better manner. Based on primary data collection through questionnaire survey, the study aims to help companies by suggesting measures for improving their foreign currency risk management.

3.6 Objectives of the Study

(1) To study the recommendations of the Tarapore Committee for Capital Account Convertibility, its sequencing and the present status of implementation in India to identify macroeconomic factors affecting the exchange rate of the Rupee against the Dollar.

(2) To examine the recent volatility in exchange rates and to demonstrate its continuance based on simulation.

(3) To establish a relationship between Macroeconomic factors and Exchange rates for forecasting the Rupee-Dollar Exchange Rate.

(4) To study the foreign currency exposure risk management of selected Indian companies through a survey and interview.

(5) To suggest measures for handling foreign exchange exposure for Indian companies.
3.7 Scope of the Study

1) While studying the macroeconomic factors affecting the exchange rates, the study limits itself to the data for the period 1991 to 2004.

2) The study is confined to Rupee-Dollar only.

3) The companies covered are predominantly Chennai-based companies having exposure to foreign exchange on account of imports, exports or foreign currency loans.

3.8 Data Sources and Collection

Primary data from the corporates and secondary data from the handbook of statistics on the Indian economy, Reserve Bank of India, annual report of the Reserve Bank of India, the website of Reserve Bank of India viz. www.rbi.org.in, Center for Monitoring Indian Economy and the Federal Reserve Statistical Release of the US government are used for the study. The secondary data are very reliable and sound. Primary data collection was made through questionnaire survey on Chennai-based companies. The views of experts/knowledgeable people in the foreign exchange field namely Chief Financial Officers of companies, bankers and regulators with respect to foreign exchange risk management for Indian companies are also obtained through personal interviews.

3.9 Methodology

(a) Monte Carlo Simulation to demonstrate the volatility in exchange rates

The daily exchange rates of the Rupee against Dollar from January 1973 to November 2004 were studied to understand the behaviour of the exchange rates. The exchange rates have steadily depreciated from 1947 to June 2002. From July 2002, the rupee has turned volatile. Using Monte Carlo simulation the volatility of exchange rates is studied. The Monte Carlo simulation technique is a well-known technique that
uses random numbers generated from a uniform distribution and maps the relative frequency to the random numbers generated. Each time when a random number corresponds to a specific relative frequency, the exchange rate that is associated with that category is taken as the prediction for the next period. Monte Carlo simulation method is equally applicable when random numbers are generated from a standard probability distribution such as the normal distribution. In this case, the cumulative probability of the standard normal distribution is taken as the basis for predicting the exchange rate.

(b) Exchange Rate Forecasting
The forecasting of the exchange rate of the Rupee against the Dollar using a forecasting model based on multivariate regression analysis is attempted. Macroeconomic data from 1991 to 2004 have been used for this purpose. For the empirical analysis of exchange rates (the dependent variable) and nine other macroeconomic variables (independent variables) for the years 1991 to 2004, the univariate and multivariate regression analysis are used. The data analysis and results are discussed in the chapter-5 on exchange rate volatility and it's forecasting.

(c) Primary data collection through questionnaire survey
125 Chennai-based companies were identified, which had exposure to foreign exchange on account of imports, exports or foreign currency loans from the database of Center for Monitoring Indian Economy. Structured questionnaires were sent to the Chief Financial Officers of these companies. 54 responses were received and the analysis of the above is covered in Chapter-6, Implications of Exchange Rate Management for Indian Companies. The Statistical Package for Social Sciences (SPSS) was used for the above analysis.

The macroeconomic variables selected for data analysis are:

(1) Exchange Rate
(2) Bank Rate
3.10 Operational Definitions:

The above mentioned macroeconomic variables are defined below:

(1) Exchange Rate:

Exchange Rate is the price (rate) at which one currency is exchanged for another currency. It is the number of domestic currency units per US Dollar.

(2) Bank Rate:

Bank rate is the rate at which the Central Bank (Reserve Bank of India) lends to the banking system in India.

(3) Balance of Payments (BOP):

BOP is a tabulation of the credit and debit transactions of a country with the foreign countries and international institutions during a specific period. It broadly consists of:

I. Current Account

(a) Exports of Goods
Imports of Goods
Net Visible Balance of Trade in Goods

(b) Trade in Services
Government
Transport
Travel
Financial and Other Services
Net Invisible Balance of Trade in Services

(c) Other Current Accounts transactions
Government
Others

(a) + (b) + (c) Current Account Balance
II. Capital Account
Investments in India
Investments Overseas
Other Capital transactions

III. Foreign Exchange Reserves

IV. Errors and Omissions

I + II + III + IV = Overall Balance

(4) External Debt

External Debt is the total amount of borrowings outstanding at the end of each year and includes the following:

(a) Government borrowings from Bilateral and Multilateral agencies (both concessional and non-concessional)

(b) Government borrowings from International Monetary Fund

(c) Borrowings of the public sector, financial institutions and commercial banks

(d) Trade credit (buyers' credit and suppliers' credit)

(5) Foreign Direct Investment (FDI) and Foreign Institutional Investment (FII)

The Balance of Payments manual of the International Monetary Fund has defined FDI as “The Category of International Investment that reflects the objective of obtaining a lasting interest by a resident entity in one economy, in an enterprise, resident in another economy” (IMF Balance of Payments Manual, 1993).

According to the World Trade Organization “FDI occurs when an investor based in one country (the home country) acquires an asset in another country (the host country) with the intent to manage that asset”. The management dimension is “what distinguishes FDI from portfolio investment in stocks, bonds and other financial instruments (FII Investments)”
(6) Foreign Exchange Reserves

Foreign Exchange Reserves represent claims on another country held in the form of currency of that country, interest bearing bonds or gold.

(7) Gross Domestic Product (GDP)

Gross Domestic Product is a measure of the total flow of goods and services produced by a country over a specified time period, normally a year or a quarter. GDP is obtained by valuing outputs of goods and services produced in the country at market prices and then aggregating them.

All intermediary goods are excluded and only goods used for final consumption or investment goods (Capital Goods) or changes in stocks are included.

The income arising from investments and possessions owned abroad is not included in GDP, and only the value of flow of goods and services produced in the country is estimated, the word "domestic" is used to distinguish it from the Gross National Product.

(8) Fiscal Deficit

Fiscal Deficit is calculated by taking the total expenditure of the government and reducing from it the total revenue receipts and other receipts excluding the borrowings of the government. It is the budget deficit plus the borrowings of the government.

(9) Inflation

Inflation is the increase in the general level of prices. CPI means Consumer Price Index, which measures the increases in the prices at the consumer level.
3.11 Hypothesis Development

**Hypothesis 1:** Bank Rate and Exchange Rate of the Rupee against the Dollar

H₀: There is no relationship between bank rate and exchange rate of the Rupee against the Dollar.

H₁: There is a relationship between the bank rate and exchange rate of the Rupee against the Dollar.

**Hypothesis 2:** Balance of Payments and Exchange Rate of the Rupee against the Dollar

H₀: There is no relationship between the Balance of Payments and exchange rate of the Rupee against the Dollar.

H₁: There is a relationship between the Balance of Payments and exchange rate of the Rupee against the Dollar.

**Hypothesis 3:** External Debt and Exchange Rate of the Rupee against the Dollar

H₀: There is no relationship between the External Debt and exchange rate of the Rupee against the Dollar.

H₁: There is a relationship between the External Debt and exchange rate of the Rupee against the Dollar.

**Hypothesis 4:** FDI and FII and Exchange Rate of the Rupee against the Dollar

H₀: There is no relationship between the FDI and FII inflows and exchange rate of the Rupee against the Dollar.

H₁: There is a relationship between the FDI and FII inflows and exchange rate of the Rupee against the Dollar.
**Hypothesis 5:** Foreign Exchange Reserves and Exchange Rate of the Rupee against the Dollar

H₀: There is no relationship between the Foreign Exchange Reserves and exchange rate of the Rupee against the Dollar.

H₁: There is a relationship between the Foreign Exchange Reserves and exchange rate of the Rupee against the Dollar.

**Hypothesis 6:** Gross Domestic Product and Exchange Rate of the Rupee against the Dollar

H₀: There is no relationship between the Gross Domestic Product and exchange rate of the Rupee against the Dollar.

H₁: There is a relationship between the Gross Domestic Product and exchange rate of the Rupee against the Dollar.

**Hypothesis 7:** Fiscal Deficit and Exchange Rate of the Rupee against the Dollar

H₀: There is no relationship between the Fiscal Deficit and exchange rate of the Rupee against the Dollar.

H₁: There is a relationship between the Fiscal Deficit and exchange rate of the Rupee against the Dollar.

**Hypothesis 8:** Inflation (Based on CPI) and Exchange Rate of the Rupee against the Dollar

H₀: There is no relationship between the Inflation (Based on CPI) and exchange rate of the Rupee against the Dollar.

H₁: There is a relationship between the Inflation (Based on CPI) and exchange rate of the Rupee against the Dollar.

**Hypothesis 9:** US Federal Interest Rate and Exchange Rate of the Rupee against the Dollar

H₀: There is no relationship between the US Federal Interest Rate and exchange rate of the Rupee against the Dollar.

H₁: There is a relationship between the US Federal Interest Rate and exchange rate of the Rupee against the Dollar.
3.12 Limitations of the study

(i) Predominantly Chennai based companies only were considered in our sample.

(ii) Only the Rupee against Dollar exchange rates has been taken for the study.

(iii) The macroeconomic data are limited to the period 1991-2004.

(iv) Political factors and speculation have not been considered in the study. These factors have shown influence on exchange rates from time to time.

(v) The companies who have responded are very limited in numbers and do not represent all the sectors of the economy.
REFERENCES


