CHAPTER 1
INTRODUCTION

1.1 Introduction

The importance of the financial system in economic development is well developed through facilitating lending, payments, and trade in risk in two distinct ways of financial intermediaries and markets as two major sources of financing in the economy (1).

It is difficult to establish precisely the sequence of economic development and financial development and their cause and effect relationship; while financial system accelerates growth, it grows with economic advancement. Therefore, it is more realistic and accurate to say that the relationship between economic development and financial development is symbiotic, mutually reinforcing, and intertwined. Effective and efficient financial system provides economic growth, poverty reduction, and stability. Financial development plays a strong and independent role in increasing the general and long term prosperity. Improvements in financial arrangements and effectively functioning financial system precedes and cause good economic performance, improve living standards of the poor, and insulate the economy from macroeconomic fluctuations. The contribution of finance to the long term growth is achieved chiefly by improving the economy’s total factor productivity rather than by raising the rate of capital accumulation. In brief, financial system affects growth through the channels of increasing (i) the rate of capital accumulation, (ii) the rate of technological development, and (iii) productivity. In turn, all these achievements together bring about demand-following financial development (2).

There have been evolutionary changes in worldwide financial systems, mostly driven by innovation. Trends in financial systems towards globalization, deregulation, and liberalization, associated with great advances in technologies, and some regulatory efforts have made financial systems more integrated and subject to higher volatilities, wide varieties of risks, and greater competitions.
Increasingly integrated financial systems have given impetus to financial innovation. In fact, wide varieties of risks, complexities, and more competitions in the financial systems have brought about the emergence of financial innovations to provide new products and processes to better suit of different circumstances of time and markets in which they are traded.

Financial engineering is the phenomenon of product and/or process innovation in financial industries. Finnerthy defines financial engineering as the design, development, implementation of innovative financial instruments and process and formulation of creative solution to problem in finance (3). The evolving process of financial engineering ties to make best use of existing financial instruments in order to develop new varieties of products and strategies helping participants in financial system and to challenges that await them.

Financial engineering has been an efficient profession used to optimize and analyze various kinds of financial decision making such as risk management, financial portfolio planning, forecasting, trading, hedging, fraud detection, and many other applications. But in a very broad approach, its application may be classified in three broad fields of hedging and risk management, speculation and arbitrage, and structured finance. In all these cases, financial engineering provides the issuers considerable flexibilities to create wide array of product, strategies, and deals, and customize them in such a way that it can address various needs of participants in financial systems in an efficient manner. Financial innovation and financial engineering have improved choice of financial products and have provided better matching of risks through which there have been clearly major welfare gains.

1.2 Statement of Problem

The capital enhancement has been one of the major challenges in any economy in the presence of limited financial resources. The challenge has become more intensified in the increasingly integrated financial systems. The attempt in external financing is to do so in an optimal form. This means lowest cost of funding while maintaining a balanced portfolio of liabilities across
markets and maturities. Structured finance has been to address these requirements. It includes all advanced financial arrangements serving to efficiently refinance and hedge any profitable economic activity beyond the scope of conventional forms at lower cost. Financial and non-financial institutions in both banking system and capital markets may use structured finance to mobilize sufficient funds for what would otherwise be an unattractive investment based on the issuer's desired cost of capital. In brief, structured finance has offered issuers enormous flexibility to create securities with distinct risk-return profiles in terms of maturity structure, security design, and asset type, to fulfill the specific needs in the best way. Financial engineering techniques used in structured and synthetic liabilities design, provide issuers with lower funding costs, new investors, and market access.

Depositary Receipts (DRs) as a structured financial instrument have designed to overcome many of the inherent operational and custodial hurdles of international investing and associated risks. DRs have been introduced to provide different companies new avenues and flexible mechanism of raising capital outside their home country in an efficient manner. At the same time, they offer investors internationally diversification without the risks and costs associated in direct investment in foreign financial markets.

The other major challenge in financial systems is related to the emergence of more complex risks and higher volatilities in the system. Financial operations are generally related to wide varieties of risks and uncertainties. The risks have been aggravated with increased globalization and integration of financial systems. In addition, there has been remarkable growth of markets for innovative financial products and strategies, and their number prevailing in financial systems. The contingent nature of the products and strategies has intensified risk and complexity in financial systems. All these changes and need for proper use of derivatives and synthetic/structured products has brought about new challenges to financial institutions and particularly regulators to develop appropriate strategies and policies to overcome these problems in financial system. The main aim is to improve efficiency, stability, and soundness of financial system to prevent from the fore problems that a fungible financial
system can pose for the economy. This challenge becomes more critical for regulators when some of the structured products and strategies are designed with attempts to reduce regulatory requirements. The recent financial crisis has shown that even countries with strong fundamentals have been hit by the crisis through contagion. This indicates the importance and essence of reconsidering existing structure, and strategies in financial system, and to restructure them to be sound and stable, efficient and competitive which is responsive to the changing circumstances. The development of sophisticated risk management models and strategies has been in response to this need. There has been increasing tendencies towards risk based policies and practices in financial systems in financial institution and regulatory level as well as international level, towards this end.

1.3 Goals and Objectives

(I) The present study investigates the use of financial engineering techniques for funding purpose and enhancement of capital sources. Depositary Receipts (DRs) programs are investigated as an example of engineered financial instruments. The study explores the efficiency of these programs used by Indian companies to provide them with access to efficient financial markets to improve their capital sources and diversify their investor base.

(II) The study assesses the efficiency of Indian financial institutions (banking system), and various regulatory efforts to improve the quality of assets and safeguards towards financial restructuring. For this purpose the magnitude of non-performing asset (NPA) and its accumulation as one of the prominent causes of financial crisis is investigated in India’s banking system.

1.4 Methodology

The study consists of two main sections. First includes the review of literature relevant to the research, consisting of chapter one, two, first part of chapter three and four. This part is based on library study and survey of available resources. The second section of study has two distinct parts, representing the assessment of DRs of Indian origin companies to tap
international markets, and the trends in the non performing assets of commercial banks in India. This part of study is based on quantitative works.

For DR programs, the data is the DRs’ closing prices of fourteen Indian companies as sample, on weekly bases. The data is collected for the period of 04/01/2002 – 02/01/2009. The website of J.P. Morgan is used as source of the data. The sample is collected based on the availability of data for selected period for study. To assess the DR efficiency in providing issuers with access to efficient markets, host markets for DRs are investigated for random walk phenomenon through checking time series’ stationarity and unit root (Ljung-Box-Perce Q statistics, and Augmented Dickey-Fuller test). Using Box-Jenkins methodology, the appropriate univariate auto-regression model is estimated for all difference stationary time series prices for the purpose of short term forecasting evaluation.

To assess the NPA in banking system, the study uses the banking data reflected in financial statements of banks in the accounting terms as are available from the annual reports of Reserve Bank of India and its website for the period of 1999-2008 (10 years). The sample contains thirty banks from the scheduled commercial banks including; State Bank of India and its associates (8 banks), Nationalized bank (19 banks), and three Private bank. The linear panel data using fixed effects method is applied. Fixed effects method is one allowing for arbitrary correlation between the unobserved effects and observed explanatory variables. Panel unit root tests (Levin, Lin and Chu test (LLC), the Im, Pesaran and Shin (IPS) test, and Hadri Z-stat) are applied and residuals are checked for serial correlation.

Software including EViews 5 and Macrofit 4.1 is used in the process of the study.

1.5 Structure of Study
The study is divided into five chapters.

Chapter 1: This chapter presents an introduction on the current study, its goals, methodology applied, and the structure of the study.
Chapter 2: This chapter covers the literature of financial system, financial markets, and financial engineering techniques applied by different institutions and firms in market place. This chapter introduces financial system and markets and their common trends and also gives a functional and organizational review of financial system and markets. The chapter also reviews the major financial risks, costs, and efficiency concept in the market. The second part of this chapter, introduces the concept, origin, and different tools of financial engineering, the scope of activities, building block approach to products and specially the application of financial engineering. The application of financial engineering in hedging and risk management, speculation and arbitrage, and particularly structured finance, are discussed in detail. Structured finance encompasses all advanced financial arrangements that serve to efficiently refinance and hedge any profitable economic activity beyond the scope of conventional forms of securities at lower capital cost and agency costs from market impediments and liquidity constraints. Structured products classified in seven broad categories are discussed in detail. And finally the chapter reviews the essence of financial and legal control, and regulatory and accounting issue.

Chapter 3: With reference to the application of financial engineering for funding purposes, this chapter concentrates on the Depositary Receipts (DRs). First part of this chapter presents the literature introducing the concept of DRs, its trade and different formats. There is also the review of literature regarding the motives behind issue of DR, their advantages and evolution of the market for DR in general. Then we concentrate on the DR programs in India, historical and regulatory review, and main incentives behind the cross listing of Indian origin companies through DRs. The last part of this chapter relates to the study of market for DRs, used by fourteen Indian companies (as the sample). We assess efficiency of this instrument in providing companies with access to more developed financial markets, to raise capital and enhance their investor base along with other incentives behind their cross listing.

Chapter 4: This chapter concentrates on banking system functioning and regulatory efforts towards more protections, stability and safety of the system.
There is review of banking literature, its evolving structure and function, their major risks, banking asset-liability management, risk management and trends towards risk based practices and policies and the role of financial engineering in this evolution. There is also a brief review of financial reengineering in financial system and efforts towards this end partially by prudential norms. Further it explains the essence of regulation, international efforts towards harmonization of financial systems, and Basel II. The second part of the chapter reviews banking system and prudential norms in India, starting with survey of prudential norms, and efforts to compliance with Basel II norms and international best practices considering the country specific condition. The last part of this chapter examines the efficiency of different efforts in India to contain the problem of NPAs to improve efficiency and stability of financial system. For this purpose, the magnitude and changes of net non-performing asset in thirty banks of scheduled commercial banks (as the sample) are investigated for the period of 1999-2008.

Chapter 5: This chapter is the concluding chapter. It presents the summary of thesis and then provides policy implications of this research to increase capacities of financial institutions and to facilitate stability, competitiveness and resiliency of the system.
References