Chapter 1

INTRODUCTION

The Indian banking sector has undergone several phases of major paradigm shifts in the last few decades. Two very important landmarks in the early history of Indian banking are nationalization and directed credit with focus on mass banking promoting social welfare. A major turnaround in the strategy of banking took place along with the ushering in of the reform era since the early 1990s. As a part of the process of the opening up of the economy, banks have become exposed to the liberalized global financial arena. While deregulation has opened up new vistas for banks to augment revenues, it has also entailed greater competition and consequently exposed banks to the free interplay of market forces. Thus with increasing globalization in the financial system concerns about banking soundness has assumed heightened importance for financial stability and banking stability in particular.

The Indian economy is not decoupled from the global financial system. Its linkage with the international market makes it susceptible to financial disturbances or turmoil outside the national boundary. The equity, trade and the foreign exchange markets provide the possible channels through which the global financial crisis can spread to the Indian economy and the banking system. The recent global financial crises in 2008 has raised serious concerns among the Indian monetary and banking authorities on how to deal with the impact of the current financial meltdown and the consequent gradual soaring level of Non-Performing Assets (NPAs) in Indian Banks. While these are perhaps the outcomes which may occur in the expanding process of globalization, studies
on the multi-faceted aspects of financial integration relating to their impact, desirable or undesirable, on the banking sector and the apriori apprehensions thereof, have dominated the research landscape since the inception of this new era. It is in this spirit that the present thesis makes a humble attempt to capture some of the emerging issues related to the Indian banking sector which have assumed crucial significance in the context of the emerging global scenario. The focus will be on three broad issues. One, identification of economic indicators that can effectively signal an upcoming banking crisis. Two, capture the impact of financial globalization and liberalization on the Indian banking sector and three, examine the impact of financial markets on the bank stock returns.

Economists and researchers have become increasingly anxious by the epidemic of banking crisis occurring all over the world since the mid-1990s. An ongoing and very active area of research, relates to development of Early Warning System (EWS) that aims to predict banking crisis based on macroeconomic and global financial disturbances much before the crisis actually occurs giving policy makers time to act by implementing pre-emptive measures. Many counties with severe banking problems or with a history of banking crisis have been the object of this dynamic research. Economists from the World Bank and the International Monetary Fund (IMF) have identified banking crisis in India in the 1990s in their multi-country EWS studies. Surprisingly, till date no attempt has been made to identify the macroeconomic and global signals of banking crisis exclusively for India based on the popular methodologies in crisis literature. Essay 1 (Chapter 3) in the thesis, is a pioneering study in this direction. The essay makes an attempt to identify the exact months of banking crisis in India during 1994-2006 and then devises an EWS
for predicting banking crisis in India using several potential indicators. The essay also makes an effort to distinguish among the various forms of banking fragility and identifies the conditions under which the banking sector transits from one state to another.

Prior to financial liberalization, credit risk of Scheduled Commercial Banks (SCBs) was primarily influenced by socialistic goals and banks were used as vehicles to achieve those objectives resulting in a legacy of huge NPAs in the early 1990s. However banks came under severe pressure to reduce their NPAs with the adoption of prudential norms in 1992. Since 2002-03, banks have indeed managed to reduce their existing NPAs but accretion of fresh NPAs is always a possibility as macroeconomic conditions deteriorate. As the Indian economy integrates with the world economy more deeply, capital inflows can influence monetary policy and interest rates to a large extent with likely ramifications on the Indian banking sector. Thus our banks could become susceptible to the dangers of financial globalization, a possibility unthinkable of in the deregulated era. It has thus become very important to understand the interlinkages between the macroeconomic environment and the Financial Soundness Indicators (FSIs) or aggregated Micro-Prudential Indicators of banks in this new emerging scenario.

Taking these developments into consideration Essay 2 (Chapter 4) undertakes a Macro-Prudential Analysis (MPA) of credit risk, the most dominant risk category of Public Sector Banks (PSBs) in India. Assuming bank-specific shocks to be nil at the micro-level, the essay examines the transmission of shocks from major macroeconomic variables such as GDP growth, exchange rate, inflation rate and monetary policy to the default rate of banks during 1994-2003. The novelty of this essay lies in the fact that it is
the first systematic assessment of the dynamic links between asset quality and macroeconomic shocks in the Indian context. The essay makes a modest attempt to stress test extremely adverse macroeconomic scenarios and how they impact the asset quality of banks. This facilitates in understanding the resilience of Indian PSBs as macroeconomic conditions worsen.

In the context of revised capital adequacy norms under Basel II, there is an increasing focus on bank capital, particularly bank stocks. Due to significant revision of risk weights, banks are under pressure to increase capital to maintain a sufficient cushion. However, due to lack of sufficiently developed markets for alternative capital instruments, especially in emerging markets like India, banks are increasingly relying upon equity capital to enhance their capital base specially when market conditions are good. The Committee on Banking Sector Reforms (CBSR), perhaps expecting such developments has proposed the reduction of government ownership in PSBs to 33%. If the government actually decides to dilute its stake, many PSBs who have no further head room to raise capital via equity will be able to raise more capital and meet the stipulated norms in the event of such statutory changes. In this backdrop, research on bank stocks has become very crucial. In Essay 3 (Chapter 5), there are three sections covering different aspects of conditional volatility of bank stocks using daily data in the Indian stock market featured with dominant foreign capital flows.

The first section of Essay 3 deals with the conditional volatility patterns of the BSE BANKEX index in the emerging stock market of India. The second section of the essay investigates the calendar anomalies on the return and conditional variance of the BSE
BANKEX. Finally, the third section of Essay 3 explores the sensitivity of stock returns of BSE BANKEX and individual banks to market risk and macroeconomic factors like exchange rate and interest rate.

**Scheme of the thesis:** Among the several issues relating to banking crises, the present work selects some of the most crucial and emerging issues of concern for an in-depth empirical investigation and research on the India banking sector. The issues, though somewhat related, are dealt with separately in three different essays. Before going into the essays involving technical aspects and analysis of empirical results, the thesis provides a broad overview of the contemporary scenario along with the major directions of the research on the emerging areas of concern. This is dealt with in Chapter 2. The three subsequent chapters are the three essays as mentioned here. Chapter 3 (Essay 1) focuses on the “Early Warning System and Banking Fragility in India: Integration of ‘Signals’ Approach and Probit Regression Model”. Chapter 4 (Essay 2) deals with “Macro-Prudential Analysis of Aggregate Loan Quality of Indian Public Sector Banks”. Chapter 5 (Essay 3) broadly relates to “Investigation of Conditional Volatility of Bank Stocks”. The chapter is divided into three sections. Section 5.1 gives a brief review on the urgency for research on bank stock volatility in the Indian context. Section 5.2 deals with ‘Conditional Volatility and Forecasting of BSE BANKEX’, section 5.2 deals with ‘Calendar Anomalies in BSE BANKEX’ and section 5.3 explores ‘Sensitivity of bank stock returns in India to Market Risk, Interest Rate Risk and Exchange Rate Risk’. Finally Chapter 6 summarizes the results derived in the three previous essays and concludes the study with policy implications.