Chapter 1

INTRODUCTION

1.1 Introduction

Efficiency in the functioning of any economy depends upon the efficiency of its infrastructure. Payment system is considered as one of the key components of the infrastructure of any modern economy. As an economy develops and moves to a higher plane of growth, economic transactions among the individuals and institutions tend to grow exponentially. In order to facilitate these transactions smoothly and effectively, there is a need to develop an efficient payment and settlement system. Modernization of the payment system of any country is a *sine qua non* to ensure the efficiency of the economy in general and the financial system in particular. Humphrey and Setsuya (1995) argued that there is a need to modernize the payment system and move away from paper-based to electronic mode of payment system to improve efficiency and save cost. According to the authors “the resource cost of a nation’s payment system can account for 3 per cent of its Gross Domestic Product (GDP)”.

In India the instruments of payment evolved over time from precious metals to currency to cheques and currently migrated to e-payments. Correspondingly, the payment systems in the country also evolved over time; but rapid changes have been witnessed during the last decade, especially from 2004-05 onwards. These changes were necessary to facilitate the ever-increasing volume of transactions taking place as a result of faster economic development in India during the first decade of this century. Rapid advances in information technology, changes in regulatory framework, setting up of new institutions like the Clearing Corporation of India Ltd (CCIL), the National Payments Corporation of India (NPCI), etc., have encouraged the emergence of new payment processes, products and delivery channels for small as well as large value, and ‘time critical’ payments. As e-commerce becomes more common in the economic activities in the country, several major changes in the payment system would take place at a faster pace.

The payment system of any country, though advanced and sophisticated, does face various risks, *viz.* bank failures, frauds, counter-party failures, etc. Such aberrations could trigger a chain-reaction that might ultimately result in disruption and distrust of the
payment system. For example, the failure to settle one large payment transaction tends to affect other transactions, and, correspondingly, the institutions involved in the payment mechanism, which may disrupt the entire payment system in the country. Such systemic and cascading failure of the payment system can hamper effectiveness of monetary policy and adversely affect the real sector. Minimization of systemic risk is therefore a critical challenge facing the regulators. The central bank in any country is deeply engaged in promoting a sound and efficient payment system and also takes appropriate measures to reduce systemic risks.

In the year 1999, the Committee on Payment and Settlement Systems (CPSS) of the Bank for International Settlements (BIS) developed certain core principles for important payment systems (See Annexure 1). These principles provide guidelines to improve the efficiency of payment systems in handling the ever-increasing volume and value of payment flows both within the country as well as across international borders. These guidelines also help the developing economies to modernize their payment systems in the light of increasing financial market integration throughout the world.

1.2 Payment and Settlement Systems

Payment and Settlement Systems constitute a major aspect of a country’s financial and economic structure. “A well planned and executed system contributes towards promoting economic activities and improving macro-economic management, including release of funds from the clearing and settlement functions for more productive use, the reduction of float levels, the lowering of transaction costs and the control of monetary aggregates” (Khiaonarong, 2001). “The payment system provides the arteries or highways for conducting trade, commerce and other forms of economic activities in any country. An efficient payment system functions as a lubricant speeding up the liquidity flow in the economy and creating a momentum for economic growth. The payment process is a vital aspect of financial intermediation; it enables the creation and transfer of liquidity among different economic agents. A smooth, well functioning payments system not only ensures efficient utilization of scarce resources but also eliminates systemic risks” (GOI, 2007).

According to the Payment Settlement Act, 2007, “A payment system means a system that enables payment to be effected between a payer and a beneficiary and includes clearing, settlement or payment service” (RBI, 2004).
“A payment system encompasses a set of instruments and means generally acceptable in making payments, the institutional and organizational framework governing such payments (including prudential regulation); and the operating procedures and communications network used to initiate and transmit payment information from payer to payee and to settle payments” (Lamberte, 2005).

1.3 Settlement System

Settlement is the actual transfer of funds between payer’s bank and the payee’s bank. It discharges the obligation of the payer bank to the payee bank in respect of transfer of funds. Settlement, which is irrevocable and unconditional, is described as final settlement. Generally, the settlement of interbank funds transfer can be based on the transfer of balances in the books of the central bank; it can also be settled between the banks in the books of the settlement bank, which is itself a commercial bank that has assumed the role of a settlement bank. In practice, the settlement in majority of large value funds transfer system takes place in terms of central bank funds.

Systems of settlement may be classified as Net Settlement Systems and Gross Settlement Systems. In the case of Net Settlement System, the settlement of funds transfer occurs on a net basis according to the rules and procedures of the system. The net position of a participating bank is calculated on the basis of bilateral or multilateral basis, as the sum of the value of all the transfers it has received up to a particular point of time minus the sum of the value of all the transfers it has remitted. The net position, which can be a net credit or debit position at the settlement time, is called net settlement position. In the case of multilateral net settlement system, each settling participant settles its multilateral net settlement position.

In the Gross Settlement System, the settlement of funds occurs on a transaction-by-transaction basis without netting debits against credits.

1.4 Need for Sound and Efficient Payment Systems

An efficient and sound payment system is necessary for an economy because it not only helps in promoting commercial and economic activities, but also helps in implementing monetary policies. Payment systems are not only useful in meeting specific needs of the public authorities as well as defining the key role of the central bank but also reduces the
settlement risks and helps in improving the credit standing of the countries. Sound and efficient payment systems also help in the efficient management of liquidity and provide various alternatives for customers to make payments. It contributes significantly towards fostering customer relationship and enables the bank in the process of strengthening and widening the customer base. Efficient payment systems are also needed for generating fresh revenues and to reduce the existing costs.

1.5 Risks Associated with Payment Systems

However, payment systems are subject to several risks, which may briefly be stated as follows.

- **Credit risks** – These are financial obligations that a participant in the system will not be able to meet fully, within the system currently or at any time in future.

- **Liquidity risks** – A player within the system may have insufficient funds for meeting financial obligations as and when expected, although it may be able to meet them at some time in the future.

- **Operational risks** – These arise on account of operational factors such as technical malfunctions or operational mistakes, leading to credit or liquidity risks.

- **Systemic risk** – It is the inability of one of the participants to meet his/her obligations, or a disruption in the system itself that may result in the inability of the other participants or financial institutions in other parts of the financial system to meet their obligations, as they become due. This type of failure may give rise to wide-spread credit or liquidity problems and may threaten the stability of the system as well as the financial markets.

The effective management of financial risks is at the heart of designing safe and appropriate payment systems. The appropriate tools and incentives depend on the type of system design and techniques used. The tools for managing credit risks in payment systems include: (i) Using system designs whereby credit risk between participants does not arise; (ii) Specifying access criteria: (iii) Introducing credit limits; and (iv) Assigning loss-sharing arrangements. Tools for managing liquidity risks include: (a) management of payment queues, (b) provision of intra-day credit, and (c) specifying throughput guidelines and position (receiver or sender) limits. The general tools are: (x) information systems that support the tools for managing credit and liquidity risks, (y) providing
financial information to participants, and (z) timely monitoring by the system operator (BIS, 2000).

1.6 Importance of Payment and Settlement Systems

Efficient and effective payment systems are vital for the economic prosperity of developing countries, to promote commerce, trade, etc., and to achieve optimum utilization of available resources required for the transfer of payments and to control the risk involved in the process of moving large funds. Thus, sound and efficient payment systems contribute significantly towards promoting economic and commercial activities and can meet the specific needs of public authorities. These systems define the role of central banks and help in macro management. They help in implementing monetary policies effectively and reduce the settlement risks. They are useful for improving credit standing of the companies. They provide various options for customers to make payments. They reduce transaction costs, speed up liquidity flow and improve transparency. They help in integrating domestic economy into a global economy (Bhasin, 2007).

Each country however has to evolve its own approach and strategies in the designing of its own fabric of the payment system to suit its unique requirements. The present study aims to analyze the issues involved in ensuring efficiency in the functioning of the payment systems in India in the light of the progress she has achieved during the last two decades, particularly during the last decade.

1.7 Scope of the Payment System

1. A well-designed payment system should facilitate the exchange of goods and services between economic agents using the accepted medium of exchange.

2. The system should include instruments through which payments can be made, and, provide rules, regulations and procedures that guide these payments, the institutions facilitating the payment mechanism and the legal system that supports the established systems to facilitate the transfer of funds between the participants.

3. Payment systems encompass a set of instruments and the means generally acceptable in making payments; the institutional and organizational framework governing such payments; and the operating procedures and communications’
network used to initiate and transmit payment information from payer to payee and to settle payments.

4. Payment systems are to be used by individuals, business organizations, banks, and government departments in order to make payments to and receive payments from each other.

5. A modern payment system consists of specialized sub-systems developed to serve particular sets of customers; some of these settle small payments, some large payments, while some cover both large and small settlements.

1.8 Hypotheses of the Study

The study sets out the following hypotheses:

1. The efficiency of the payment systems in the country depends on the role played by the regulator to ensure safety of the payment systems and prevention of any occurrence of systemic risk.

2. The systemic risk shall be observed as the size of payment systems grows in size and becomes varied in nature.

3. Improved efficiency in payment and settlement systems would result in improved operational efficiency of banks.

4. Strong and efficient payment systems in the country would lead to enhanced banking business and its profit.

1.9 Objectives of the Study

The study examines the evolution and performance of the Payment and Settlement Systems of India and benchmarks the same with advanced economies like the European Union, the USA, the UK and the Asian economies like Japan and China. This is done with a view to suggest certain measures to make the Indian payment system more efficient, less vulnerable to various risks and make it more cost effective. In particular the objectives of the study are:

1. To examine the evolution of the payment system in India, especially from 2005 to 2010, when the country witnessed a rapid growth in economic activities in spite of global economic upheavals.
2. To assess the importance of efficient and effective payment and settlement systems in improving the financial performance of the economy.

3. To understand the impact of information technology on payment and settlement systems.

4. To analyze the various issues relating to the efficient functioning of the payment and settlement systems like security, risk management, cost, etc.

5. To suggest further measures to promote e-payment systems by banks.

1.10 Scheme of the Present Study

Chapter 1: Introduction

Chapter 2: Methodology

Chapter 3: Payment Systems: Global Scenario

Chapter 4: Evolution of Payment Systems in India

Chapter 5: Indian Payment Systems: Growth Indicators

Chapter 6: Risk Management in Payment Systems and the Regulatory Framework

Chapter 7: Analysis of Payment Business in Select Banks and Findings

Chapter 8: Summary and Recommendations

Appendices

Bibliography

Before examining the payment and settlement systems in India, it is necessary to study the global developments with reference to various studies conducted on the subject. Towards this end, chapters 2 and 3 attempt to review the literature.
ANNEXURE 1

Core Principles for
Systemically Important Payment Systems

1. The system should have a well-founded legal basis under all relevant jurisdictions.

2. The system’s rules and procedures should enable participants to have a clear understanding of the system’s impact on each of the financial risks they incur through participation on it.

3. The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.

4. The system should provide prompt and final settlement on the day of value, preferably during the day and at a minimum at the end of the day.

5. A system, in which multilateral netting takes place should, at the minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement exposure.

6. Assets used for settlement should preferably be a claim on the central bank, where other assets are used; they should carry little or no credit risk.

7. The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.

8. The system should provide a means of making payments, which is practical for its users and efficient for the economy.

9. The system should have objectives and publicly disclosed criteria for participation, which permit fair and open access.

10. The system’s governance arrangements should be effective, accountable and transparent.

Reference: Reserve Bank of India, Annual Report 2001-02