

**Report
on
Oversight of Payment Systems in India**



Reserve Bank of India

Department of Payment and Settlement Systems

2006 - 2007

Contents

	Title
Chapter 1	Introduction
Chapter 2	CPSS Report on Central Bank Oversight of Payment and Settlement Systems and Status in Indian context
Chapter 3	Compliance to the Core Principles for Systemically Important Payment Systems
Chapter 4	Compliance to Recommendations for Securities Settlement Systems
Chapter 5	Compliance to Recommendations for Central Counter Parties
Chapter 6	Surveillance and Measures for Sound Oversight Policy Framework

Chapter 1 : Introduction

1.1 Recognizing the importance of Payment Systems in the financial system the Reserve Bank of India has taken a number of steps to strengthen the institutional framework for the payment and settlement systems in the country. As a part of its overall high-level strategic objective, the Reserve Bank has constituted a Board for Regulation and Supervision of Payment and Settlement Systems (BPSS) as a Committee of its Central Board, as per the Reserve Bank of India (Board for Regulation and Supervision of Payment and Settlement Systems) Regulations, 2005 which were notified in the Gazette of India dated February 18, 2005. The role of BPSS is to prescribe policies relating to the regulation and supervision of all types of payment and settlement systems, set standards for existing and future systems, approve criteria for authorisation of payment and settlement systems, determine criteria for membership to these systems, including continuation, termination and rejection of membership.

The need for oversight

1.2 The Committee on Payment and Settlement Systems (CPSS – which is the international standard setting body for Payment Systems) in its report on 'Central Bank Oversight of Payment and Settlement Systems' has highlighted the importance of oversight of payment and settlement systems comprising large-value, retail, and securities settlement systems. Large-value payments involve large transfer of bank deposits usually reflecting the settlement of transactions relating to financial markets. The enormity of such transactions can be gauged by the fact that total turnover in several large value payment systems and securities settlement systems over a period of 2 / 3 days is often found to be equivalent to the annual GDP of a country. Consequently, most Central banks classify such large-value systems as Systemically Important Payment Systems (SIPS) (in India the turnover in the SIPS segment constituted more than four-fifths of the total turnover - Rs.3,51,16,277 crore of the total of Rs.4,23,74,063 crore - in 2006-07), as any disruption in such systems will have serious systemic consequences effecting the financial markets and thereby the financial stability of the country. Thus, it becomes imperative that oversight of the entire payments system infrastructure (institutions, instruments, rules, procedures, standards and technical means) is central to the establishment and existence of an efficient, stable and reliable payments and settlement system in a country.

What does oversight involve?

1.3 The payments system infrastructure, typically involves the provision of payment and settlement services by both private and public sector providers using common infrastructure, to market participants following various market practices and processes. Overseeing payment systems would thus involve putting in place systems and procedures that (a) ensure the smooth and efficient provision of payment services to all participants and users in a fair manner, (b) minimize and control the risk of transmitting shocks through the economy caused by failures of individual participants to settle their

payment obligations, and (c) ensure development of technical and institutional infrastructure to meet growing payment system needs of the country.

Needless to say, the priority assigned to these multiple objectives of oversight function would differ from country to country and within a country from time to time given the stage of overall development of payment and settlement systems in that country. Nonetheless, the oversight function seeks to make sure that provision of payment system services are maximised as it develops over time.

Role of Central Banks in Oversight

1.4 Central banks are involved in payment and settlement systems as providers of settlement assets, operators of the systems and also as users. One of the key tasks of central banks is to maintain public confidence in money and in the instruments and the systems used to transfer money. This would not be achieved if payment and settlement systems, which facilitate the exchange of money for goods, services and financial assets, are seen as inefficient, unreliable and prone to failures. Thus, as part of their public policy objectives, central banks, have involved themselves in the design and functioning of payment and settlement systems.

1.5 Payment and settlement systems are relevant to financial stability, as any failure of this vital infrastructure, could lead to broader financial and economic instability due to the large-values that are transacted by the SIPS and the erosion of public confidence in the event of failures in the retail payments segment. In an event of financial stress, market participants or central banks may wish to supply emergency liquidity to certain participants in a payment and settlement system in an attempt to encourage the orderly settlement of transactions in the overall financial system. Additionally, central bank's role in payment systems frequently calls for cooperation and coordination of activities with other authorities such as banking supervisors and securities regulators to ensure smooth discharge of legal or other responsibilities essential for the payment system.

1.6 Accordingly, the role of the central bank in discharging its oversight function is to assess the risks involved and in cooperation with relevant stake-holders put in place risk mitigation measures. It also ensures through oversight that the risks are not transmitted to other systems / participants.

International Initiatives towards oversight

1.7 With ever-increasing growth in cross-border financial transactions having obvious implications for financial stability issues, there has emerged a consensus among international central banking community on the need to ensure the smooth functioning of domestic and cross-border payment systems through appropriate oversight of such systems. The oversight function should be developed and strengthened with a view to ensuring the financial and technical integrity of the payment system, its robustness against shocks and its overall efficiency through rules and standards, monitoring and enforcement.

1.8 In this regard, the CPSS has produced some important principles, recommendations and guidelines covering almost the entire gamut of payment and settlement activities and processes. These principles and recommendations, while not being prescriptive in nature, provide a yardstick that enable central banks to measure their payment system processes and arrangements vis-à-vis the risks they pose and the mitigation and control measures that are in place. The CPSS guidelines also help the central banks in the design and development of robust and efficient national payment systems.

1.9 The 'Core Principles for Systemically Important Payment Systems (SIPS)' published in January 2001 by the CPSS are intended for use as universal guidelines to encourage the design and operation of safer and more efficient systemically important payment systems worldwide. They also enable identification of payments systems in a country that can be classified as SIPS so that risk mitigation or controls can accordingly be applied on processes and procedures of these systems.

1.10 In view of growing importance of securities markets world-wide and the consequent growth in cross-border transactions, the CPSS jointly with the International Organisation of Securities Commissions (IOSCO), studied the practices being followed in different countries with respect to trading, clearing and settlement activities of securities transactions. Based on the inputs received from different countries and securities regulators, the CPSS and IOSCO jointly published the 'Recommendations for Securities Settlement Systems' in November 2001 and the 'Recommendations for Central Counter Parties' in November 2004. These recommendations deal with various aspects of settlement systems which could be a cause of risk in the financial market place and appropriate practices and risk control measures that can be put in place to ensure efficiency as well as stability in such systems.

1.11 With oversight of payment systems being increasingly recognized as a core responsibility of central banks, the CPSS has highlighted this issue through the report on 'Central Bank Oversight of Payment and Settlement Systems' in May 2005. The principles set out in this report would provide the basis for the remaining contents of this document.

1.12 Large value payment systems are no doubt an integral part of a country's payment systems, but equally important are the retail payment systems which settle a large volume of retail (public) transactions with comparatively low values. Some typical examples of retail payment systems are the automated clearing houses, card schemes and cheque clearing which are used to make bulk payments and also settle a range of transactions in goods and services. Thus, any disruption in retail payment services also impacts the public confidence in payment services in general. As such these systems can be called as Systems of system-wide importance if not as SIPS.

1.13 The Reserve Bank of India has played a major role in developing the payment and settlement systems in the country in the last two decades. It has also sought to bring safety and efficiency in the payment systems. The Reserve Bank started the MICR Clearing in the 1980's followed by the Electronic Clearing Service and the Electronic Funds Transfer System in 1994. The Electronic Funds Transfer (EFT) system is a retail funds transfer system enabling customers to transfer funds from one account to another and from one region to another, without any physical movement of instruments. The Reserve Bank introduced the Real Time Gross Settlement (RTGS) system in 2004 to bring safety and efficiency in large value payments. The entire inter-bank clearing system and a few time critical retail payments have shifted to this secure electronic payment system platform. The National Electronic Funds Transfer (NEFT) system came into operation in November 2005. This system facilitates electronic retail transfers between bank branches using Structured Financial Messaging Solution (SFMS) and secured by Public Key Infrastructure (PKI) technology. Eventually EFT will be subsumed in the NEFT system and all electronic retail payments will be routed via either the NEFT or the ECS system. After stabilization of the MICR Clearing operations at the four metro centres the MICR Clearing / Electronic Clearing Service operations were given to commercial banks at other centres. The Reserve Bank has ensured that cheque processing is automated using MICR technology at 59 cities in the country.

1.14 The Reserve Bank played a major role in setting up a central counter party, Clearing Corporation of India Limited (CCIL) which operates guaranteed net settlement systems (using the principle of novation) for inter-bank Government Securities dealings, inter-bank Foreign Exchange clearing apart from operating the money market instrument – Collateralised Borrowing and Lending Obligation (CBLO). Operation of these systems has brought safety and efficiency in the settlement of inter-bank payments.

1.15 In order to promote the use of electronic mode for payments, the service charge levied on banks by the RBI for ECS, EFT and RTGS transactions has been waived until March 2008, so that this benefit of reduced costs is passed on to the customers, thereby encouraging the use of electronic retail payment instruments. Similarly, the limits set for ECS and EFT transactions have also been dispensed with since November 2004 to increase the user base.

1.16 Many banks offer internet banking services, which include access to account information as well as funds transfers between accounts, bill payments and online securities trading. The growth in the number of internet users and the widening reach of internet services will impact significantly the way credit transfers are carried out. In order to ensure that this channel implemented by banks is safe, the RBI issued guidelines on minimum checks to be in place by banks providing internet banking services to their customers.

1.17 This Introduction, is followed by Chapter 2 which deals with the assessment of the (Indian) payment and settlement systems vis-à-vis the general guidelines laid down in the CPSS Report 'Central Bank Oversight of Payment and Settlement Systems'. Chapter 3 gives the steps taken by the Bank and compliance of the payment systems to the Core Principles for Systemically Important Payment Systems. Chapter 4 details the compliance to the recommendations for Securities Settlement Systems and compliance to the recommendations for Central Counter Parties for G-Secs as well as Forex clearing is assessed in Chapter 5. Surveillance initiated in a limited way and Measures for Sound Oversight have been covered in Chapter 6.

Chapter 2: CPSS Report on Central Bank Oversight of Payment and Settlement Systems and Status in Indian context

2.1 Oversight of payment and settlement systems is a central bank function whereby the objectives of safety and efficiency are promoted by monitoring existing and planned systems, assessing them against these objectives and, where necessary, inducing change. The concept of central bank oversight of payment and settlement systems has become more distinct and formal in recent years as part of a growing public policy concern with financial stability in general. Oversight has developed in part in response to the expansion of the role of the private sector in providing payment and settlement systems. Where there has been a risk that the private sector would take insufficient account of negative externalities that could cause systemic risk, central banks have sought to pursue public policy objectives of safety and efficiency by guiding and influencing system operators. And whether a system is provided by the private sector or by central banks themselves, the increasing attention to oversight also reflects the very large increase in the values of transfers cleared and settled, the increasing centralisation of activity around a small number of key systems, the increasing technological complexity of many systems and the consequent concern that systemic

risk could increase if the design of key systems did not adequately address various payment and settlement risks.

2.2 Central banks for a very large part of their existence have had the responsibility of the oversight function. Whereas in earlier times there was no formal statutory backing, currently many central banks are acquiring a formal oversight role as opposed to their earlier 'informal' oversight role. In many countries oversight responsibilities are set out explicitly in a form of law or treaty whereas in countries like the US, the Fed Reserve derives its powers as the entity responsible for the conduct of monetary policy, banking supervision, lender of last resort and as a provider of payment and settlement services.

2.3 In countries like Australia, Canada, South Africa, Croatia the law on payment and settlement systems casts specific responsibility on the central bank to carry out oversight on important or designated payment systems. In Japan the law requires the central bank to oversee payment system run by private operators.

2.4 The Report on Central Bank Oversight of Payment and Settlement Systems published by the Committee on Payment and Settlement Systems, Bank for International Settlements in May 2005 provides a general overview of the function of oversight of payment systems. The report lists 10 general principles for oversight. The Report emphasizes that oversight function is a necessary tool used by central banks to achieve their public policy objectives of safety and efficiency of payment and settlement systems (such as operating certain systems themselves or providing settlement services to systems, which are SIPS). The general principles for oversight arrangements are broadly classified under five heads, as under:

- Transparency
- International standards
- Effective powers and capacity
- Consistency
- Cooperation with other authorities

In addition, there are five general principles for international cooperative oversight arrangements.

2.5 **Application of general principles of payment system oversight in India**

The status of application of the general principles of payment system oversight in India can be described as under:

2.5.1 Transparency:

Central banks should set out publicly their oversight policies, including the policy requirements or standards for systems and the criteria for determining which systems these apply to.

The Bank is transparent about its payment system policies. Major policy announcements are laid out in the public domain in the form of a detailed overview of the existing payment and settlement systems and the future developments with regard to the same, in the Annual Policy Statements and the reviews carried thereof every quarter. Quite often new payment system initiatives by the central bank are announced and public views are solicited. A more explicit framework would be provided when the Payment and Settlement Systems Bill is enacted. The preamble of the Bill states that the Bill would “provide for the regulation and supervision of payment systems in India and designate the Reserve Bank of India as the authority for that purpose”. Sections 10-19 of the Payment and Settlement Systems Bill detail the scope and objective of regulation and supervision by the Reserve Bank.

Pending the enactment of the Payment and Settlement Systems Bill, the Reserve Bank is exercising its power under the RBI Act, 1934 to ensure smooth, safe and efficient operations of payment and settlement systems. The central bank under Section 58 (2) (p) and 58(2) (pp), of the RBI Act, 1934 is empowered to frame regulations and rules for the systems operated by it. Accordingly, the URRBCH was framed and all clearing houses adopt these rules and regulations. Similarly, Procedural Guidelines for ECS and EFT have been framed and made available in the public domain. To further improve operational efficiency in MICR clearing “MICR Minimum Standards of Operational Efficiency“ have been issued and placed in the public domain. These standards are applicable to all MICR Cheque Processing Centres. Under these provisions each system when approved by the RBI sets out certain minimum requirements / standards to be adhered to and a reporting mechanism as well to the central bank on a periodic (quarterly) basis. Similar Standards have been introduced for other computerized clearing centres as well and banks operating such centres have to submit such self-assessment reports at half-yearly intervals.

The Bank in a way has started formalising its oversight functions.

2.5.2 International Standards:

Central banks should adopt, where relevant, internationally recognised standards for payment and settlement systems.

The Bank has adopted the Core Principles for Systemically Important Payment Systems (CPSIPS) published by the Bank for International Settlements as also the recommendation of the CPSS-IOSCO recommendations for securities settlement systems as the standards for payment systems and securities settlement systems. The G-Secs and Forex Clearing systems have been assessed against the recommendations for central counter parties. The status of compliance with the Core Principles by the various payment systems is being discussed separately in Chapter 3. The central bank as a part of the Financial Sector Assessment Programme (FSAP) of the I.M.F. periodically assesses as to how the Systemically Important Payment Systems in the country comply with these international standards.

2.5.3 Effective powers and capacity:

Central banks should have the powers and capacity to carry out their oversight responsibilities effectively.

Currently, there is no exclusive legislation in India which confers the central bank with formal oversight authority over payment and settlement systems in the country. However, as is the prevalent trend among central banks worldwide, the Bank is in the process of acquiring the formal oversight function through a statutory legal enactment in the form of the Payment and Settlement Systems Bill. Even in the absence of a formal oversight authority, the Bank has been performing oversight function. The Bank is discharging this role by deriving powers from the existing statutes such as the Reserve Bank of India Act, 1934 and the Banking Regulation Act, 1949, etc.

Section 58(2) (p) and 58(2) (pp) of the RBI Act, 1934 enable the Bank to undertake the following:

(p) the regulation of clearing-houses for the banks (including post office savings banks).

[(pp) the regulation of fund transfer through electronic means between the banks or between the banks and other financial institutions referred to in clause (c) of section 45-I, including the laying down of the conditions subject to which banks and other financial institutions shall participate in such fund transfers, the manner of such fund transfers and the rights and obligations of the participants in such fund transfers.]

Under the above provisions of the RBI Act, the Reserve Bank has framed the Uniform Regulations and Rules for Bankers Clearing Houses which are adopted by individual clearing houses and guides the operations of all clearing houses. The IT Act, 2000 amended in 2001 recognises electronic funds transfer and the RBI Act was accordingly amended empowering the RBI to frame regulations for electronic funds transfer as well. Under these provisions, the RBI has framed the EFT Regulations which have been sent to the Central Government for approval for notification.

The Reserve Bank has prepared the Minimum Standards of Operational Efficiency for MICR Cheque Processing Centres. These standards relate to encoding of instruments, time schedule, regulated entry into CPC, maintenance of machines, operational procedures, monitoring of reject rates, speed and accuracy of on-line reject repair (OLRR), checking of settlement reports for supervisory signals, return clearing discipline to be adhered to, enabling banks to download reports / data on-line, reconciliation, customer service, and business continuity plan. Similar Standards have been introduced for non-MICR (but computerized) clearing centres and banks operating such centres will have to submit self-assessment reports on half-yearly basis.

The electronic payment services, like the Electronic Clearing Service (ECS) (Credit / Debit), Electronic Funds Transfer (EFT), National Electronic Funds Transfer (NEFT) and Real Time Gross Settlement (RTGS) systems are governed by the respective Procedural Guidelines / Rules and Regulations which are governed by the Contract Act in the absence of the Payment and Settlement Systems Bill.

The Payment and Settlement Systems Bill when enacted would:

- a) Designate Reserve Bank as the authority to regulate Payment and Settlement Systems
- b) Provide for compulsory requirement of an authorisation by the Reserve Bank to operate a payment system
- c) Empower Reserve Bank to regulate and supervise the payment systems by determining standards, calling for information, returns, documents, etc.
- d) Empower Reserve Bank to audit and inspect by entering the premises where payment systems are being operated
- e) Empower Reserve Bank to issue directions
- f) Override other laws and provide for settlement and netting finality.

For the Government Securities and Forex clearing operated by the Clearing Corporation of India Limited (CCIL), bye-laws have been framed by CCIL for the smooth conduct of operations. RBI periodically conducts an audit of CCIL's operations. Since RBI has no explicit powers to carry out oversight of CCIL's operations it carries out annual assessment of this payment system operator by mutual agreement with the latter.

The card based systems are at present operated by Visa and MasterCard and settlement for these transactions are done at the designated bank - Bank of India and American Express. Though Visa and MasterCard are not under the regulatory purview of the Bank, the Reserve Bank as the regulator and supervisor for banks has published guidelines for the issuance of cards by the card issuing banks. The compliance with the Guidelines is assessed during the inspection of these card issuing banks by the RBI. Also, RBI is in regular dialogue with the Visa and MasterCard affiliates in India.

2.5.4 Consistency:

Oversight standards should be applied consistently to comparable payment and settlement systems, including systems operated by the central bank.

The Payment and Settlement Systems Bill is applicable to all systems operated by the central bank or operated by any authorized payment system provider. The standards set for each payment systems are uniformly applicable to those being operated by the central bank as well as to those being operated by other institutions. The minimum standards of operational efficiency for MICR CPCs are adhered to by the CPCs managed by the central bank and other banks. The same applies to the electronic clearing services offered by the central bank and other banks.

Within the overall framework of banking services offered to customers by banks in India, the RBI has laid down strict criteria which banks have to adhere to while offering such services including payment services such as funds transfer intra-bank (within) and inter-bank (outside) and other services such as Electronic Bill Presentation and Payment (EBPP), cards and mobile payments.

The Clearing Corporation of India Limited (CCIL) is the central counter party for Forex as well as for Government Securities clearing and settlement. Two rounds of annual assessment were done by the Reserve Bank and a set of recommendations were made. The recommendations made in the first assessment were reviewed during the second assessment of CCIL.

An attempt is made in this report to assess the various payment systems in operations, including those operated by the Reserve Bank, vis-à-vis the core principles for consistency.

2.5.5 Co-operation with other authorities:

Central banks, in promoting the safety and efficiency of payment and settlement systems, should cooperate with other relevant central banks and authorities.

Not much emphasis is being laid on this aspect in the report in the absence of the enactment of the Payment and Settlement Systems Bill. However, as part of its overall cooperation on Payment Systems with international standard setting bodies such as the CPSS, the Bank participates in the E-money survey, provides comments on the draft reports of the CPSS and also co-organises international Payment System seminars with the CPSS, BIS.

2.6 The other principles for international co-ordination are not being examined at present.

Chapter 3 : Compliance to the Core Principles for Systemically Important Payment Systems

3.1 The CPSS, BIS has published the Core Principles for Systemically Important Payment Systems and the Recommendations for the Securities Settlement Systems and Central Counter Parties which have been adopted and accepted as international standards. The gaps in the payment and settlement systems in operation in the country, including the ones operated by the Reserve Bank are being assessed and analysed in this chapter with respect to their compliance with the Core Principles for Systemically Important Payment Systems.

3.2 Core Principles for Systemically Important Payment Systems

3.2.1 The Reserve Bank in order to assess the compliance to Core Principles for Systemically Important Payment Systems and the compliance to the Securities Settlement Systems had set-up Advisory Groups.

3.2.2 The Advisory Group on Payment and Settlement Systems covering the BIS guidelines on “Core Principles for Systemically Important Payment Systems” had examined two issues viz., status of clearing house operations as well as responsibilities of the Reserve Bank of India (RBI) with respect to these core principles. Based on this assessment, the Group has recommended a set of actions to be initiated by the appropriate authority in order to improve the overall efficiency in payment system. The Group while assessing the compliance to the core principles had made certain recommendations which are as under:

- Well-founded legal framework and clearing house rules
- Amendments suggested to Section 17(6) of RBI Act, Negotiable Instruments Act (1881). Proposal for EFT Act.
- Introduction of Lamfalussy standards would address risks but should be kept under review
- Place rules and regulations on clearing on website
- Proper framework for counter party risk
- If existing arrangements are not satisfactory, a common fund contributed by users of the system should be put in place
- Need to introduce limits for all participants in a fully centralised accounting structure
- System should provide for same day or intra-day settlement
- RBI should undertake periodic costing of various payment instruments to facilitate effective pricing
- Popularise EFT through a scheme of incentives and disincentives

3.2.3 As regards the responsibilities of the central banks in applying the core principles the Advisory Group had recommended the following:

- Cross-country survey on payment system objectives, their management and legal aspects should be undertaken
- Hiving off the management of DNS and RTGS systems from RBI, with only settlement of funds to remain with RBI
- Constitution of an institutional problem resolution mechanism comprising multiple regulatory bodies and to ensure level playing field across participants
- Revision to the publication entitled, "Approach to an Integrated Payment System in India" (1998).

3.2.4 The compliance to the above has already been published as part of the "Review of the recommendations of the Advisory Groups Constituted by the Standing Committee on International Financial Standards and Codes: Report on the Progress and Agenda Ahead" published in December 2004.

3.2.5 An overview of the Indian payments system with regard to compliance with the Core Principles is given below:

Serial No.	Principle	Status of compliance			
		Not complied	Partially complied	Broadly complied	Fully complied
1	Legal basis		√		
2	Understanding financial risks				√
3	Management of financial risks			√	
4	Prompt and final settlement				√
5	Completion of settlement even when single largest participant fails in MNS		√		
6	Settlement asset				√
7	Security and operational reliability			√	
8	Efficiency			√	
9	Access criteria				√
10	Governance			√	

3.2.6 The Central Bank Responsibilities as recommended in the Core Principles for Systemically Important Payment Systems is as under:

Responsibility A: *The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems:*

The objective and the role of the Reserve Bank in the Systemically Important Payment Systems is published and available in the public domain. The RTGS Regulations and Rules detailing the responsibility of the participants in the RTGS systems are available on the RBI website.

The other SIPS systems viz. G-Secs and Forex clearing operated by the CCIL are governed by the Bye Laws which are also made available to the participants when they are given membership; also these are available on the CCIL website. The operations of CCIL are periodically assessed by the RBI.

Responsibility B: *The central bank should ensure that the systems it operates comply with the Core Principles:*

The RTGS operated by the RBI are compliant with the Core Principles. The High Value Cheque Clearing (value of Rs.1 lakh and above) is operated by the Reserve Bank at 14 centres. The settlement for High Value clearing at Mumbai is now in RTGS.

Responsibility C: *The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight:*

The RBI at present does not have the formal power to perform oversight of the payment systems it does not operate. However, the RBI uses its regulatory and supervisory power over banks to perform this task. For the systems operated by CCIL, RBI conducts periodic assessment of CCIL.

Responsibility D: *The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities:*

At the international level, the RBI has been continually in touch with appropriate multilateral institutions e.g., BIS, IMF and World Bank regarding issues like financial stability, banking sector reforms, etc.

3.3 Paper based High Value Clearing:

In retail paper based clearing, MICR Clearing is an important payment system as at some centres this is the only payment system available as all high value instruments are cleared through this mechanism only. The volume of these transactions constitute for more than 72% in terms of volume of the total non-cash transactions though in terms of value the percentage is very low (18%). In paper based clearing, large value clearing called High Value Clearing is held at 27 major cities in the country. The cheque of Rs.1 lakh and above and are payable locally are exchanged by banks during a time slot of half an hour (12:00 Noon to 12:30 PM) and unpaid returns if any are exchanged in the afternoon (during 3:00 to 3:30 PM). Thus, the clearing cycle is completed the same day.

While the number of cheques cleared in this clearing is very small (volume is 1.4% of paper-based payment systems), the value of cheques is substantial and forms around 41.8% of value of these systems. The Bank has designated this system as an important payment system to instill public confidence and accordingly monitors the operations of this system, for providing safe and efficient payment services to the public.

i. *Legal basis:* The RBI regulates the clearing houses under powers drawn from the RBI Act, 1934. Section 58(2) (p) of the RBI Act, 1934 enable the Bank to undertake the following:

(p) the regulation of clearing-houses for the banks (including post office savings banks).

Under the above provisions of the RBI Act, the Reserve Bank has framed the Model Uniform Regulations and Rules for Bankers Clearing Houses. These regulations are adopted by the members of the clearing house and are binding under the Contract Act. However, the procedure of multilateral Netting and Settlement of these transactions does not get an explicit legal protection. Apart from this the paper based system is a debit instruction and there is an inherent risk of default by the payer.

The enactment of the Payment and Settlement Systems Bill will provide the legal basis for the multilateral netting procedure. Apart from this, the Bill when enacted would override all other laws and provide for settlement and netting to be final and irrevocable, overruling the insolvency law.

The Bank is in the process of implementing Cheque Truncation which already has legal recognition under the NI Act.

ii. *Understanding Financial Risks:* The Uniform Rules and Regulations for Bankers Clearing Houses (URRBCH) clearly states the roles, responsibilities of the members as also the sub-members participating in the clearing. The URRBCH also details the method that would be followed in case of default by any of the participant in the system to fulfill its obligations. The URRBCH as also the Procedural Guidelines for MICR Clearing Houses are publicly disclosed. The participants are expected to be clear on these rules and regulations before they sign the agreement for participating as member in the clearing house.

iii. *Management of Financial risks:* Cheque based clearing which is a debit based system has credit and liquidity risks. In case any participant is not in a position to fulfill its obligation, the procedure of unwind is resorted to. Earlier the Bank had set a limit that the presentation of any bank should not exceed 10% of its NDTL, but this could not be monitored as the clearing and settlement are spread across the length and breadth of the country.

The Reserve Bank in order to assess the risk in the Retail Payment and Settlement Systems had set up a Working Group to recommend the methods for ensuring smooth operations of the paper based clearing system. The Working Group among others recommended the setting up a guarantee fund for the smooth operations of paper based system.

iv. *Prompt and final settlement:* In the High Value paper based clearing, settlement is completed on the same day on a T+0 basis at the centres where RBI manages the clearing house. The procedure of same day clearing and settlement has been implemented at the other 13 centres where the High Value clearing and settlement are managed by the commercial banks. Efforts are on to persuade customers to use RTGS for large value payment instead of paper based instruments.

v. *Completion of settlement even when single largest participant fails in MNS:* The MNSB settlement is deemed final and irrevocable after the return clearing is completed. In case any participant fails to fulfill its settlement obligations, a procedure of partial unwind is evoked and the settlement cycle completed. So far, this procedure has not led to systemic risk.

vi. *Settlement asset:* The settlement asset used at major centres is central bank money. The centres where RBI manages the clearing house (14), the settlement is done in the accounts maintained with the Bank. However at other centres where the clearing house are managed by commercial banks and Reserve Bank does not have its office at that centre, the settlement is in commercial bank money i.e. in the accounts maintained by the member banks with the bank managing the clearing house. Members can easily transfer and convert these commercial bank assets into central bank assets. The banks managing the clearing houses are public sector banks whose ownership lies with the Central Government. Thus settlement in commercial bank money poses little settlement or liquidity risk.

vii. *Security and operational reliability:* The smooth operations of the clearing houses are ensured by the Bank / bank managing the clearing house. At the four metro centres where RBI manages the clearing house, the State Bank of India has established a back-up centre so that in case of eventuality, the processing could be carried out smoothly at the back-up centre. At centres apart from the four metro centres, the bank managing the MICR CPC has been asked to identify the centre which would act as a back up for it and test the back-up arrangement on a periodic basis. This however, remains an area of concern. Apart from this, for business continuity, the Magnetic Media Based Clearing System (MMBCS) is being used for carrying out the clearing and settlement in case of any problem. This has been put to test in a live environment during the period when a bank was on strike and the next largest bank was asked to carry out the clearing and settlement operations.

viii. *Efficiency:* To bring in efficiency in the paper based system, the cheque truncation project has been envisaged with pilot set to start in December 2007. The service charges for processing of paper instruments is reviewed periodically. At present the charges are fixed at Re.1 each to the presenting as well as the receiving bank.

ix. *Access criteria:* The criteria for direct membership as also for sub-members is clearly indicated in the URRBCH as also the procedural guidelines for MICR Clearing Houses.

x. *Governance:* The URRBCH as also the MICR Procedural guidelines are readily available in the public domain. The Standing Committee of the Bankers Clearing House meets periodically to take major decisions.

3.4 Real Time Gross Settlement (RTGS) System:

The RTGS system is a Systemically Important Payment System (SIPS).

i. *Legal basis:* The RTGS system is on a sound footing after IT Act was amended and made applicable to electronic funds transfer with the simultaneous amendment to the RBI Act enabling the Bank to frame regulations for electronic funds transfer.

[(pp) the regulation of fund transfer through electronic means between the banks or between the banks and other financial institutions referred to in clause (c) of section 45-I, including the laying down of the conditions subject to which banks and other financial institutions shall participate in such fund transfers, the manner of such fund transfers and the rights and obligations of the participants in such fund transfers.]

The RBI has since framed EFT Regulations which when notified would provide legal recognition to the electronic funds transfer system operated by the Reserve Bank.

At present the RTGS Rules and Regulations prepared and adopted by the participants in the RTGS systems are contractual in nature and get legal protection under the Contract Act.

However, when the Payment and Settlement Systems Bill is enacted it would provide a sound legal basis for all electronic funds transfer.

ii. *Understanding Financial Risks:* The RTGS Rules and Regulations provide a comprehensive overview of the risks to all the participants in the system. These rules and regulations are easily accessible to the members and the members enter into an agreement with the Bank expressing their willingness to follow them. The roles and responsibilities, as also the risks, of the entities participating in the system have been enumerated in detail in the Rules and Regulations.

The rights and obligations of the system providers / participants are also detailed in the Payment and Settlement Systems Bill.

iii. *Management of Financial risks:* As indicated above, the participants in RTGS system are made aware of the rules, procedures, liquidity requirement, etc., before they are extended the membership to the system. While admitting an entity in the system, the credit worthiness of the participants is assessed thereby reducing any credit risk. The participants also have access to collateralized intra-day liquidity (using Government Securities) from the central bank as a tool for effective liquidity management. The RTGS system also has facilities like gridlock resolution mechanism for smoothening the settlement process.

With the implementation of the full fledged RTGS system (incorporating the interface with the SSS) in June 2006, the automatic intra-day collateral liquidity is now available to the members.

iv. *Prompt and final settlement:* The system provides for prompt and final settlement on a real-time basis. Transactions which are valid in all respects are taken for settlement as and when received by the system and settled immediately provided adequate funds are available in the member's settlement account. Moreover settlement of RTGS transactions takes place in the books of the central bank. The transactions once settled cannot be revoked by the originator of the transaction, thus providing for settlement finality. However, though these have been well spelled out in the documents, this would be legally valid on enactment of the Payment and Settlement Systems Bill as a law.

v. *Completion of settlement even when single largest participant fails in MNS:* Core Principle 5 is applicable to Multilateral Net Settlement systems. In the RTGS system as the settlement is done in real-time gross basis this issue does not have any bearing.

vi. *Settlement asset:* Settlement in the RTGS system is carried out in central bank's assets through a designated settlement account of the member bank.

vii. *Security and operational reliability:* The RTGS system uses PKI infrastructure which is secure and ensures confidentiality, authentication and non-repudiation. The INFINET which is used for message transfer is a closed user group network.

The central system has a hot back-up at a nearby location and it is operated periodically on a quarterly basis which is transparent to the users. The back-up system undergoes periodical tests and is used on some occasions to ensure business continuity. Along with central system, the participants' system also have remote back-ups to ensure business continuity.

The Reserve Bank has set up a full fledged Data Centre with a back-up centre at a remote location apart from the hot standby which is already available.

A Business Plan is also in place which is tested on a periodic basis and ensured that the business continuity procedures are followed by all the participants.

viii. *Efficiency:* The RTGS system has been designed for the settlement of time critical and large value payments. The system is efficient and the market participants are required to follow the discipline set for the smooth operations of the systems. Adequate penalty clauses have been provided in case of violation. At present, the Bank is bearing the cost of operating the system. The Participant Interface (PI) for RTGS was provided by the Bank, in its developmental role, and no charges towards this were levied on the banks.

The Bank is not levying any processing charges on the transactions through RTGS in its promotional role for a smooth and safe system for large value payments. The Bank discloses its charging policy publicly through circulars as also through the Annual Policy Statement. The participants levy fees on all their customer transactions. The details of the charges levied by various member banks are available in the public domain.

ix. *Access criteria:* The access criteria to the RTGS system are well-defined and accessible to the public. Access to RTGS is open to all the scheduled banks, primary dealers, banks accessing the system through banks who are direct members, clearing entities and other bodies. The RTGS system has five categories of membership

Type A – The Bank and All Scheduled banks, including Scheduled Co-operative Banks

Type B – Primary dealers

Type C – Scheduled Banks and Primary Dealers participating in Call money Operations, availing of RTGS services through either a Type ‘A’ member or the Bank. (*since removed*)

Type D – Clearing Houses and Clearing Agencies

Type E – Non-scheduled banks and other financial institutions

The smaller banks can participate in the system as sub-members of one of the direct members of the system.

x. *Governance:* A Standing Committee with membership comprising the Bank and participants takes all decisions pertaining to the smooth operations of the system. The technical as also the operational requirements of the RTGS system are detailed in the documents which are available with the participants as also available in the public domain.

3.5 **Forex Clearing Operations by CCIL:**

The Forex Clearing is being operated by the CCIL which acts as a Central Counter Party for all the transactions.

i. *Legal basis:* In the absence of the Payment and Settlement Systems Act, the “Netting arrangement” and “Settlement finality” are contractual in nature. The inter-bank netting through the CCIL (the Central Counter Party) is governed by the provisions of the Indian Contract Act and Insolvency Act, and netting by novation is legally valid under the provisions of the Indian Contract Act.

The participants of CCIL are bound by the Regulations and Rules for clearing and settlement operation and the bilateral agreement between the participants and the CCIL. The Regulations set out in detail the settlement norms and procedures, the shortage and default handling procedures, the rights and obligations of all the participants in the system, and the risk management features. The Bye Laws and rules and regulations adequately meet the needs of CCIL and duly protect its interests as a CCP.

Thus, the netting arrangement through novation and settlement finality under this segment is legally / contractually valid. As mentioned above, the bilateral agreement and contracts entered into by CCIL with each constituent under this segment are enforceable and the Regulations and Rules of this segment are binding on the constituents. The settlement finality for the bank buying the currency is achieved when the settlement is completed in accordance with the rules of this segment.

ii. *Understanding Financial Risks:* The Rules for the operations of CCIL were drafted in consultation with the major banks which have since been published. The rules and regulations clearly define the rights and obligations of all the participants. Regular meetings are held with all the participants.

iii. *Management of Financial risks:* To manage risks in the Forex Clearing, CCIL has placed limits on the maximum level of credit exposure in the form of Net Debit Caps that can be taken by each participant. The Net Debit Caps and Margin Factors are fixed after a process of assessment (based on various factors including, the financial strength of the institution, its liquidity position and external support based on ownership pattern and credit rating of the bank). The Net Debit Cap and the Margin factors are reviewed on half yearly basis. In the event of failure of a member to pay in and where the shortage is met by CCIL, the trades are not unwound, but the payment of counter value to the defaulting member is held back, to make good the shortfall.

The CCIL, as central counter party to all the transactions, requires the participants to place collateral to secure the systems' exposure to each participant. The total size of the collateral covers the largest Net Debit Cap assigned to the given member. The collateral is collected in the form of US Dollar funds. CCIL has in place a collateralized line of credit limit from its Settlement Bank. CCIL draws against this LoC in case a member fails to deliver its currency obligation to CCIL on the settlement date. The collateral required to be furnished to the settlement bank for availing of this LoC is furnished from the contributions made by members to the SGF. CCIL has also availed additional Non-collateralized lines of credit to ensure smooth settlement.

In case of default in Dollar leg of the payment CCIL has recourse to the defaulting bank's rupee account with RBI. In case of a rupee default, CCIL does not release the Dollar payable to the concerned member till the rupee amount is received on the next day. CCIL also has the right to sell the currencies in case of shortfall. In case of residual shortfall, CCIL can appropriate the margin collected from the defaulting members. If shortfall still exists, CCIL allocates the residual short fall through loss allocation mechanism. In the Forex Settlement segment, rules and procedures have been defined for sharing the settlement loss, arising out of: (a) a Technical Failure and (b) a Real Failure, among participants (these are detailed in the documents published on CCIL website).

iv. *Prompt and final settlement:* All settlements in respect of inter-bank forex transactions take place under a deferred guaranteed net settlement. The INR settlement takes place at the end of the day in the books of RBI. The settlement in USD takes place before 12:00 EST. The members are advised of their final obligations for a settlement date by 1330 hours on the Settlement date by a Final Net Position report. All settlements in respect of inter-bank forex transactions are guaranteed deferred net settlements at the end of the day in the books of the RBI and are final and irrevocable. The US Dollar leg of the settlement is effected through Fedwire. CCIL has various lines of credit in both the currencies to take care of both Intra-day and overnight liquidity requirements.

v. *Completion of settlement even when single largest participant fails in MNS:* CCIL has availed from the Settlement Bank for the USD leg of forex transactions, a line of credit not less than the maximum NDC limit assigned to a member bank. The largest net debit cap assigned to any member is USD 145 million. In addition the settlement bank has also provided stand-by uncommitted line of credit of USD 175 million. The two lines of credit will ensure completion of daily settlement.

On the rupee side, CCIL has lines of credit equal to INR 7 billion for its Securities and Forex Segments. These lines are fully committed facilities with requisite funds parked in dedicated current accounts with RBI for exclusive use by CCIL for its clearing and settlement operations

The members contribute to a Settlement Guarantee Fund, the size of which is a function of the member's creditworthiness as well as the USD/Rupee Exchange volatility.

vi. *Settlement asset:* The settlement of the INR leg for all participants is in the books of the Reserve Bank of India i.e. Central Bank money. For the USD leg, the settlement takes place through Fedwire, with CCILs settlement bank in New York.

vii. *Security and operational reliability:* High degree of security and reliability is achieved in the Clearing and Settlement process using robust security measures. The data exchanged with external entities like RBI, members, etc., are encrypted / decrypted using Public / Private Key Infrastructure (PKI) obtained from Certificate Authority (CA). Like all other payment applications, INdian FInancial NETwork (INFINET) is used as the communication network. Business continuity process is available for operating the business process in contingency situations.

viii. *Efficiency:* CCIL provides clearing and settlement process of Forex inter-bank deals. Central Bank as the overseer of the payment system has taken several initiatives to increase efficiency in the system by inducting technology and changes in procedures. Due to CCIL's multilateral net settlement processes, the total counter-party exposures of all settlement participants (i.e., by the entire system) on account of the settlement risk has come down by about 93% on an average. Further, the number of payment messages that banks have to send on account of inter-bank settlement has been reduced by over 96%. Cost for the service provided by CCIL is kept under close control by exercising control over each item of cost. Pricing levels are reviewed from time to time. CCIL regularly reviews its service levels, by periodic interaction with the user committees.

ix. *Access criteria:* Clear and transparent eligibility criteria have been prescribed for grant of membership in the Bye-laws, Rules and Regulations. All requests for membership are considered and approved by a Membership Approval Committee, a Committee appointed by the Board of Directors and comprising entirely of members of the Board. CCIL undertakes an annual review of the membership to ensure that criteria prescribed for membership have been adhered to

x. *Governance:* CCIL has been incorporated as a Public Limited Company under the Companies Act, 1956. The Company profile, details of its Promoter / Shareholders, its Board of Directors, Organization Structure, IT infrastructure, Future Plans and details of its Subsidiary are publicly available through its Website. CCIL's public interest, financial and other objectives are clearly articulated in the Memorandum of Association which is a public document.

The structure of CCIL ensures, through User committees and Independent committees of the Board that there are proper checks and balances for decision making. The organization has clear demarcation along functional lines and a separate risk department which functions independent of operational departments. There are clear lines of responsibilities and accountability within the organization and appropriate management controls for enforcement. It also has committees of the Board - Audit Committee, Committee for Bye-laws, Rules and Regulations, Membership Approval Committee, Technical Advisory Committee. CCIL has also set up User Groups for various business segments.

Chapter 4: Compliance to Recommendations for Securities Settlement Systems

4.1 The Securities Settlement Systems (SSSs) are a critical component of the financial markets. In recent years, trading and settlement volumes have soared, as securities markets have become an increasingly important channel for intermediating flows of funds between borrowers.

4.2 The disturbance in the SSSs can be a source of trigger and cause disturbances to securities markets and to other payment and settlement systems. A financial or operational problem at any of the institutions that perform critical functions in the settlement process or at a major user of an SSS could result in significant liquidity pressures or credit losses for other participants. Any disruption of securities settlements has the potential to spill over to any payment systems used by the SSS or any payment systems that use the SSS to transfer collateral. In the securities markets themselves, market liquidity is critically dependent on confidence in the safety and reliability of the settlement arrangements; traders will be reluctant to trade if they have significant doubts as to whether the trade will in fact settle.

4.3 Based on a review of existing standards and on discussions at the consultative meeting, the CPSS-IOSCO Task Force developed the recommendations which included the legal framework for securities settlements, risk management, access, governance, efficiency, transparency, and regulation and oversight.

4.4 In order to assess our compliance to the recommendation an Advisory Group on Securities Settlement System was set up which made certain recommendations based on analyzing the draft SSS report. The recommendations of the Advisory Group are as under:

- In case of government securities, new system should be expedited to reduce pre-settlement risk by executing trade preferably on T+0 basis
- When government securities are settled through Clearing Corporation, it should be possible to introduce affirmation by indirect market participants
- Straight Through Processing (STP) should be the objective of SSSs. If Clearing Corporation is given the limited purpose bank status, STP can be achieved in equity segment. Same can apply to CCIL for government securities as well
- Rolling settlements should be adopted for SSSs. Final settlement should occur on T+3 basis. The market could move from T+5 to T+3 with improvements in infrastructure and payment systems
- Multilateral netting systems should be capable of timely completion of daily settlements. Setting up of CCIL may be expedited and settlements should be made possible even if three or more of largest members default
- Need for cross-margining to deal with multiple exposures
- Security Lending System should be put in place both in equity and debt segments
- Measures may be put in place to facilitate DvP by giving limited purpose bank status to CCIL
- Providing access to fund settlement facility

4.5 The current compliance to the Recommendations for Securities Settlement Systems (RSSS), in specific the compliance of Government Securities Settlement System is given below -

4.6 Government Securities Clearing (G-Sec Clearing):

The G-Sec Clearing are being assessed against the RSSS.

i. **Legal framework:** *Securities settlement systems should have a well-founded, clear and transparent legal basis in the relevant jurisdiction:* The Laws, Rules and Regulations governing the SSS are public documents. The G-Sec transactions are governed by SCRA, The Public Debt Act and rules framed under it, and the Government Securities Act and rules framed under it. The secondary market transactions are on contractual basis and are covered by the Contract Act and the enforceability is under the Contract Act. The netting by novation performed by the CCP is covered by the Contract Act.

All transactions in G-Sec are settled under DVP mode of settlement. Further, at the SSS level, RBI has defined penal clauses regarding the treatment of default of in either funds leg or securities leg (SGL bouncing).

The Public Debt (P.D.) Act and the Government Securities (G.S.) Act (yet to be notified) support dematerialization of securities.

ii. **Trade confirmation:** *Confirmation of trades between market participants should occur as soon as possible after trade execution, but no later than trade date (T+0). Where confirmation of trades by indirect market participants (such as institutional investors) is required, it should occur as soon as possible after trade execution, preferably on T+0, but no later than T+1:* The NDS system in operation is an electronic trading system which also generates trade confirmation immediately after the trade is reported. Only confirmed trades are sent to the settlement system. All the trades are confirmed by the counterparties on the trades date. For trades reported on the NDS system, on reporting the system confirms the trades with the counterparties. In NDS – OM the confirmation of the trades are done by the central counter party.

For the transactions between direct and indirect market participants the custodian takes the responsibility for settlement on behalf of the indirect market participants based on their instructions and availability of securities / funds. The information flow is bilateral and has to be completed on the same day.

In case of indirect participants, they are required to give written instructions to their custodians for any intra-custodian transfer (this is also confirmation on trade date).

There are some instances due to wrong reporting by the participants which are the main reasons for unconfirmed trades. However, the system does not accept un-confirmed trades for settlement.

iii. **Settlement cycles** *Rolling settlement should be adopted in all securities markets. Final settlement should occur no later than T+3. The benefits and costs of a settlement cycle shorter than T+3 should be assessed:* The trades are settled on a rolling basis. All outright trades are settled on T+1 basis and repo trades can be settled on T+0 or T+1 cycle. The average failures are very low. The failures to deliver securities are handled by the CCIL using its Securities line of credit. The counter parties are penalized for default in settlement.

To mitigate settlement risk, CCIL, the CCP has put in place risk mitigation measures to take care of any default.

iv. **Central counterparties (CCPs):** *The benefits and costs of a central counterparty should be assessed. Where such a mechanism is introduced, the central counterparty should rigorously control the risks it assumes:* The Clearing Corporation of India Limited (CCIL) has been set up as a CCP for settling transaction in Government securities. All the G-Sec transactions are settled through CCIL (CCP) on net basis on DVP III mode. CCIL as CCP imposes financial and operational standards through its Bye-Laws, rules and regulations which the members are bound to through the contractual agreement.

CCIL, to control the risks it is exposed to as CCP, has established detailed mechanisms and procedures. CCIL controls its credit risk by acceptance of collaterals for contributions to Settlement Guarantee fund. The members also maintain Initial margin and Mark to Market margin in respect of their outstanding trades in the SGF.

CCIL has a paid-up capital base and has Settlement Guarantee Fund which is collected from the members. The financial resources are made up of cash and liquid securities. They also have stand by lines of credit from select strong commercial banks. The loss allocation rules are clearly defined and known to all the participants.

To address default, CCIL has a line of credit arrangement with a few banks which can be utilized for managing liquidity risks.

In order to assess the risk faced, CCIL's risk management practices are periodically evaluated against recommendations for CCP.

v. **Securities lending:** *Securities lending and borrowing (or repurchase agreements and other economically equivalent transactions) should be encouraged as a method for expediting the settlement of securities transactions. Barriers that inhibit the practice of lending securities for this purpose should be removed:* Securities lending is carried out by participants by Repo agreements. A limited purpose securities lending has been approved to permit CCIL to borrow securities to facilitate settlement of securities defaults by members at CCIL. The transfer of loaned securities takes place at the CSD. The limited purpose lending is carried out only to settle in case of liquidity shortfall in these securities during a DVP settlement. The CCP holds back the funds due to the defaulting party in case of a securities shortfall which was covered through borrowing. The CCP can therefore, buy securities from market if the participant fails to replenish the defaulted security the next day.

vi. **Central securities depositories (CSDs):** *Securities should be immobilized or dematerialized and transferred by book entry in CSDs to the greatest extent possible:* Full dematerialization of Government securities (with the exception of a small quantum of the Stock Certificates) has been achieved for wholesale transactions.

The physical certificates are settled directly with the RBI as book entry. PDO rules framed under the Public Debt Act govern the book entry and transfer transactions. Public Debt Act to be replaced by the Government Securities Act contains provision, which defines the procedure for all transactions relating to Government Securities.

vii. **Delivery versus payment (DVP):** *Securities settlement systems should eliminate principal risk by linking securities transfers to funds transfers in a way that*

achieves delivery versus payment: All Government securities transactions are settled only in DVP mode. DVP Model III is followed. The funds and securities are cleared by the CCP and sent to SSS for settlement. The funds leg are settled in RTGS.

viii. **Timing of settlement finality:** *Final settlement on a DVP basis should occur no later than the end of the settlement day. Intra-day or real-time finality should be provided where necessary to reduce risks:* All settlement are on DVP basis. The transactions submitted by CCIL are on a DVP III Model basis. The transaction settlement times are communicated to all the participants of the system. SSS is used for extending intra-day credit in RTGS.

The final settlement for the securities transactions take place in the books of RBI as at the end of the settlement day

ix. **CSD risk controls to address participants' failures to settle:** *Deferred net settlement systems should institute risk controls that, at a minimum, ensure timely settlement in the event that the participant with the largest obligation is unable to settle. In any system in which a CSD extends credit or arranges securities loans to facilitate settlement, best practice is for the resulting credit exposures to be fully collateralized:* Since all the transactions are settled through CCP, the risks control measures are operated at CCP level. The CSD does not take any credit exposure on its members and also no intra-day credit is extended by the CSD to any member.

x. **Cash settlement assets:** *Assets used to settle the cash leg of securities transactions between CSD members should carry little or no credit risk. If central bank money is not used, steps must be taken to protect CSD members from potential losses and liquidity pressures arising from the failure of a settlement bank:* The transactions involving members having SGL Account and current account with RBI are settled in the books of RBI, i.e., settled in central bank money.

xi. **Operational reliability:** *Sources of operational risk arising in the clearing and settlement process should be identified and minimized through the development of appropriate systems, controls and procedures. Systems should be reliable and secure, and have adequate, scalable capacity. Contingency plans and back-up facilities should be established to allow for timely recovery of operations and completion of the settlement process:* The settlement system is fully automated with regular BCP testing. There are internal guidelines and procedures, including security measures, put in place to limit operational risk. Contingency plans including back up facilities are available.

xii. **Protection of customers' securities:** *Entities holding securities in custody should employ accounting practices and safekeeping procedures that fully protect customers' securities. It is essential that customers' securities be protected against the claims of a custodian's creditors:* The securities which are in dematerialized form are held with custodians. The physical securities are held by the beneficial holders themselves. As per the instructions issued by RBI, the custodians should hold in separate accounts its proprietary securities and those securities held as custodians.

The Government Securities Act (to be notified) confers the ownership of the securities in custodian accounts with the beneficial owners in case of insolvency of the custodian. The entities holding securities in custody are subjected to internal and external audit.

xiii. **Governance:** *Governance arrangements for CSDs and central counterparties should be designed to fulfill public interest requirements and to promote the objectives of owners and users:* The SSS is operated by the Central Bank. The Board members to the Central Bank are appointed by the Government of India.

xiv. **Access:** *CSDs and central counterparties should have objective and publicly disclosed criteria for participation that permit fair and open access:* The rules have been clearly defined for direct members of the system and they are available to the members. The restrictions on access can be justified on the need to limit risk to the system.

xv. **Efficiency and Cost Effective:** *While maintaining safe and secure operations, securities settlement systems should be cost-effective in meeting the requirements of users:* The RBI does not impose any fee / service charges for using the CSD or using the trading and reporting system. However, the CCP levies charges in consultation with the market participants / User Groups.

xvi. **Communication procedures and standards:** *Securities settlement systems should use or accommodate the relevant international communication procedures and standards in order to facilitate efficient settlement of cross-border transactions:* Not applicable.

xvii. **Transparency:** *CSDs and central counterparties should provide market participants with sufficient information for them to accurately identify the risks and costs associated with using the CSD or central counterparty services:* All relevant information are made available to the participants and are also available in the public domain. All relevant information are made available to the participants and are also on the public domain. The application for opening and maintaining the Subsidiary General Ledger Account (SGL) contains all the terms and conditions of the account. The guidelines detail the rights and obligations of the member. The balance standing to the credit of the account holder is periodically confirmed to the holder.

The CSD for the government securities is with the central bank. The CSD does not charge any custody fees for the service rendered.

The CCP, although evaluates the risk arising out of the activities, it does not disclose the results of stress test, etc., in public domain.

xviii. **Regulation and oversight:** *Securities settlement systems should be subject to regulation and oversight. The responsibilities and objectives of the securities regulator and the central bank with respect to SSSs should be clearly defined, and their roles and major policies should be publicly disclosed. They should have the ability and resources to perform their responsibilities, including assessing and promoting implementation of these recommendations. They should cooperate with each other and with other relevant authorities:* The SSS for the government securities is a part of RBI and is subject to internal oversight. RBI assesses the SSS system through its Inspection department and also through concurrent audit and Control and Self Assessment Audit. The responsibility

of the RBI with regard to government security settlement is defined in Public Debt Act, 1944. There is no other security settlement system for G-Sec outside RBI.

The CCIL as a CCP is subjected to periodic oversight by RBI based on CPSS – IOSCO standards.

xix. **Risks in cross-border links:** *CCPs that establish links to settle cross-border trades should design and operate such links to reduce effectively the risks associated with cross-border settlement:* This is not applicable.

Chapter 5: Compliance to Recommendations for Central Counterparties

5.1 The Recommendations for Central Counterparties are aimed to set out comprehensive standards for risk management of a central counterparty (CCP). The CCPs occupy an important place in securities settlement systems (SSSs) as the CCP interposes itself between counterparties to financial transactions, becoming the buyer to the seller and the seller to the buyer. A well designed CCP with appropriate risk management arrangements reduces the risks faced by SSS participants and contributes to the goal of financial stability. Although a CCP has the potential to reduce risks to market participants significantly, it also concentrates risks and responsibilities for risk management. Therefore, the effectiveness of a CCP's risk control and the adequacy of its financial resources are critical aspects of the infrastructure of the markets it serves. In the light of the growing interest in developing CCPs and expanding the scope of their services, the CPSS and the Technical Committee of IOSCO brought out international standards for CCP risk management as critical element in promoting the safety of financial markets. The report sets out the intended scope of application of these recommendations and their relationship with the Task Force report on Recommendations for Securities Settlement Systems (RSSS).

5.2 The CCIL, the central counter party operates three SIPS viz., G-Sec, Forex and CBLO. The G-Sec and the Forex clearing have already been assessed against the Recommendations for SSS and Core Principles for SIPS. As CCIL is the CCP and operating three important SIPS, the operations of CCIL is being assessed against the recommendations of CPSS-IOSCO for CCP.

i. **Legal Risk:** The three segments operated by CCIL, each are governed by its own Bye-Laws, Rules and Regulations which are publicly available. At present there is no statute governing the payment and settlement systems in its entirety. However, the Bye-laws, rules and regulations are binding to the participants through the contractual agreements. The finality of multilateral netting would be recognized once Payment and Settlement Systems Bill would be enacted.

ii. **Participation requirements:** CCIL has a well laid down procedure for admission and periodical review of membership criteria. The CCIL Board has constituted a Membership Approval Committee to consider the applications for admission of new members as per the criteria laid down. The Committee conducts the annual review of the members for their continued eligibility as per the admission criteria. The parameters include profitability, capital adequacy, regulatory compliances, adequacy of internal controls and risk management systems, availability of skilled and trained manpower, existence of requisite IT infrastructure, etc.

Documentation of decisions in each stage from the admission of members, instances of default, membership review and its reporting to the Board have been put in place. Membership can also be suspended / terminated based on the regular reviews.

iii. **Measurement and management of credit exposure:** The measurement of exposure for the three segments operated vary and is given below:

G-Sec: Margin computation for acceptance of new trades happens at the time of acceptance of any new trade (acceptance of trades is in batches); complete re-assessment of exposures to its members happens only at the end of the day. There is no counter-party credit exposure limit in the G- Sec segment fixed by the CCP. However, the CCP has set up a Settlement Guarantee Fund to limit its credit exposures and also the market risk. Initial margin is collected to cover the likely adverse movement of prices of the security by applying a security-wise margin factor, based on *Value at Risk* for three day holding period (at 99% confidence level); Mark-to-Market margin is collected to cover the actual adverse price change since the deal time. Both the margins are computed trade-wise and then aggregated member-wise. The margin requirements are calculated on mark-to-market basis on outstanding positions and the valuation is done on daily basis. In addition, the rules also provide for collection of volatility margin in case of unusual volatility in the market, but not yet operationalised. The CCIL accepts only the notified securities towards the margin contributions. The list of eligible securities drawn up with the approval of top management is reviewed regularly.

Forex: Acceptance of new trades happens in batches after exposure check is run on trade by trade basis. Margins are collected for covering market risk under normal circumstances and also for covering a portion of credit exposure based on CCIL margining algorithm. Loss allocation mechanism provides cover for the balance of credit and market risk exposures. However, as required in recommendation 3, the system for re-computation of exposure on an intra-day basis is yet to be put in place.

CBLO: Margin computation for acceptance of any new trade happens trade by trade on a post trade basis, in the trading system. There is no provision for re-computation of margin requirement for outstanding trades. Initial margins are collected for covering market risk and collaterals are deposited by the members as a cover for their borrowings in this segment.

iv. **Margin Requirements:** The CCIL follows the regime of daily back-testing for having comfort of adequacy of its margining process in all situations. Though this is done for G-Sec and Forex, the validation process for CBLO is under development.

CCIL also undertakes stress testing of its risk-model assuming the yield-curve movement on both side (upward as well as downward). For this purpose, the outstanding trade positions of all members for the date are initially valued with model prices. Based on these stress-testing results, the margining process seems to adequately cover CCP for possible market risk.

CCIL accepts Government of India dated securities, T-bills and Funds in Indian Rupees as collateral for the G-Sec and CBLO. Funds in US Dollar are accepted as collateral for the Forex.

v. **Financial resources:** For providing the guaranteed settlement of trades in government securities, CCIL has received collaterals from its members. The collaterals are collected in the form of partly cash and partly in the government securities to meet the funds / securities shortages. In addition to these collaterals, CCIL has also arranged for Line of Credit (LOC) to meet the liquidity requirement. In the event of default by the participant with the largest exposure, it is observed in the past that on certain occasions, the largest net exposure exceeded the amount of liquid financial resources available.

For the Forex segment, stress testing is conducted on a monthly basis. Also the collateral is available in USD funds and CCIL has LOC for taking care of any defaults.

vi. **Default Procedure:** CCIL has clearly stated the default procedures in its rules, regulations and bye-laws. The procedure for handling default is well defined and transparent to its members. In case of default by a participant, collaterals placed by such participants can be applied to meet the defaulting participants obligations. The bye-laws also provide for close out of transactions in the event of default.

vii. **Custody and investment risks:** The margin contribution from members is collected in the form of cash and Government Securities. These are held in the account with RBI. The Lines of Credit provided by the banks are also maintained separately in RBI having no custody and liquidity risks.

The USD funds are mostly in the US Government T-Bills. A small portion of these USD funds are kept as deposits with certain selected banks. These entities are expected to conform to RSSS.

viii. **Operational risk:** CCIL's operations are highly technology-intensive. It has over the time identified various critical components of the processes and has put in place appropriate security policy and business continuity plan. CCIL has acquired the ISO 27001 Enterprise Wide Certification on Management of Information Security.

The life cycle of business continuity plan is reviewed periodically in three stages: Business Impact Analysis, Strategy Selection and Detailed Plan, Testing, Revision and Modification. The recovery time during drill was less than the acceptable down time as laid down in the document for most of the applications.

ix. **Money settlements:** The settlement of G Sec segment is in central bank money (RBI, RTGS).

For CBLO, most of the settlements are in the books of the central bank except for settlements in the accounts of the co-operative banks and corporates which happens in commercial bank.

For the Forex settlement, settlement of Rupee leg is in the books of central bank. Settlement of US Dollar leg however happens through a private settlement bank.

x. **Physical deliveries:** All the settlements are in electronic book form.

xi. **Risks in links between CCPs:** Not applicable.

xii. **Efficiency:** There is no other CCP providing equivalent services for comparing the cost. CCIL operations are very cost-effective and achieved risk reduction with quite minimal cost.

xiii. **Governance:** CCIL has 17 Directors on its Board (list enclosed). State Bank of India, Bank of Baroda, IDBI Ltd., ICICI Bank Ltd., HDFC Bank Ltd. and LIC, being promoters, have a right to nominate Directors on the Board. Independent Directors on the Board of CCIL are drawn from various professional fields like law, finance, Forex, IT, etc. The Board is helped by various specialized Committees like Audit Committee, Risk Management Committee, Membership Approval Committee, etc.

xiv. **Transparency:** CCIL has made available its procedures, rules, bye-laws, etc., to market participants through its website. The transparency standard is thus assessed to be observed.

xv. **Regulation and oversight:** The operations of CCIL are assessed by the RBI by mutual agreement. With the passage of Payment and Settlement Systems Bill, the regulation and oversight of CCIL by RBI would be put on a firm basis.

Chapter 6: Surveillance and Measures for Sound Oversight Policy Framework

6.1 Surveillance

6.1.1 A safe, secure and efficient payment and settlement system is important for the smooth functioning of the financial system of a country. The Reserve Bank of India has been ensuring the smooth and efficient functioning of payment and settlement systems. The introduction of the MICR technology based cheque processing systems initially in four metros in the late 1980s and subsequently in other large cities, the introduction of EFT and ECS systems at various places in the 1990s, setting up the Clearing Corporation of India Limited (CCIL) to provide settlement guarantee service for government securities and forex clearing and operationalisation of Real Time Gross Settlement (RTGS) system in March 2004 have been the major initiatives.

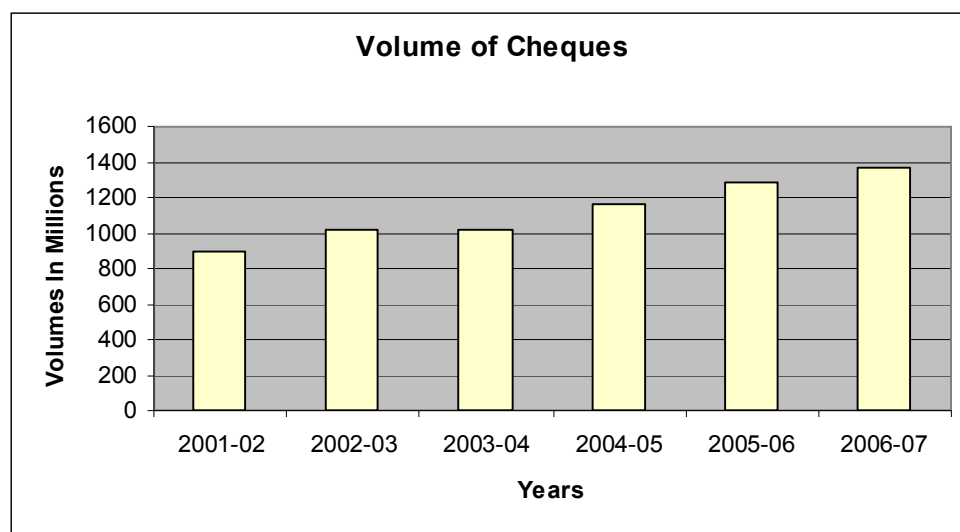
6.1.2 In order to ensure that the systems in operations do not pose any payment and settlement risk, the Bank has in a limited way started analysing the trends in the payment and settlement systems. The Reserve Bank has already taken the following steps:

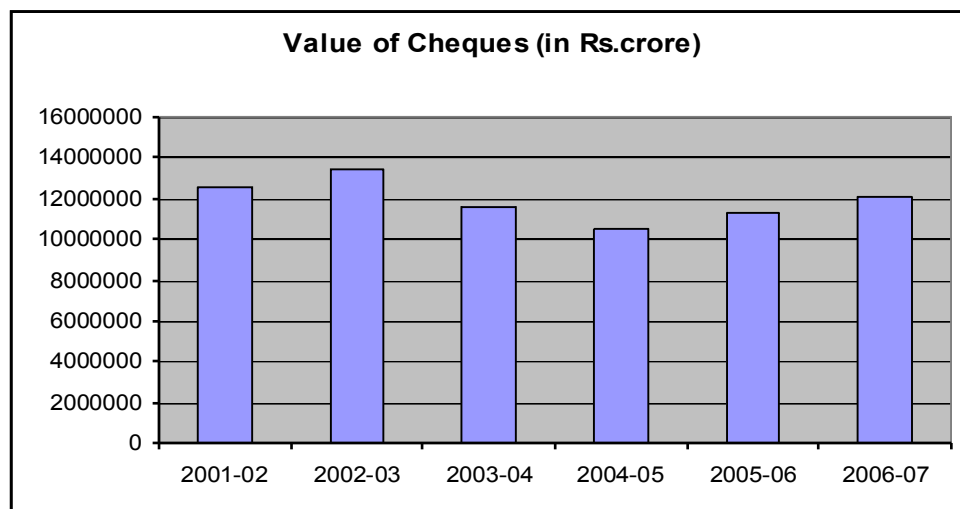
- i. The Cheque Processing Centres (CPCs) to monitor the Return vs. Presentation and Returns vs Drawee data. Also the CPCs to monitor that the reject rate for each cycle does not cross the tolerance limit.
- ii. The cheque clearing data is being analysed on a monthly basis for any sign of abnormality.
- iii. The trend of High Value clearing is being analysed on a monthly basis.
- iv. The RTGS data is analysed on a monthly basis with the daily data to study any abnormality.

6.1.3 Apart from the above, the cheque clearing already has a default handling mechanism which is well established i.e. the process of unwinding. While approving the setting up of the CCP for the G-Sec and Forex, the risk mitigation mechanism for the CCP was also to be put in place by the CCP. For smooth settlements in RTGS, the central bank provides collateralized IDL which is fixed based on the net worth of the participants in the system.

6.1.4 To assess the vulnerability in each of the system, the measures initiated in a limited way and monitored is detailed in the following section. .

6.1.5 **Cheque Clearing:** In order to perform the oversight function to the best, to begin with a structure has been put in place for collection and publishing the cheque clearing data. Paper-based mode of payment is still the predominant mode of retail payment. This is evident from the volume and value transacted through this retail payment mode.



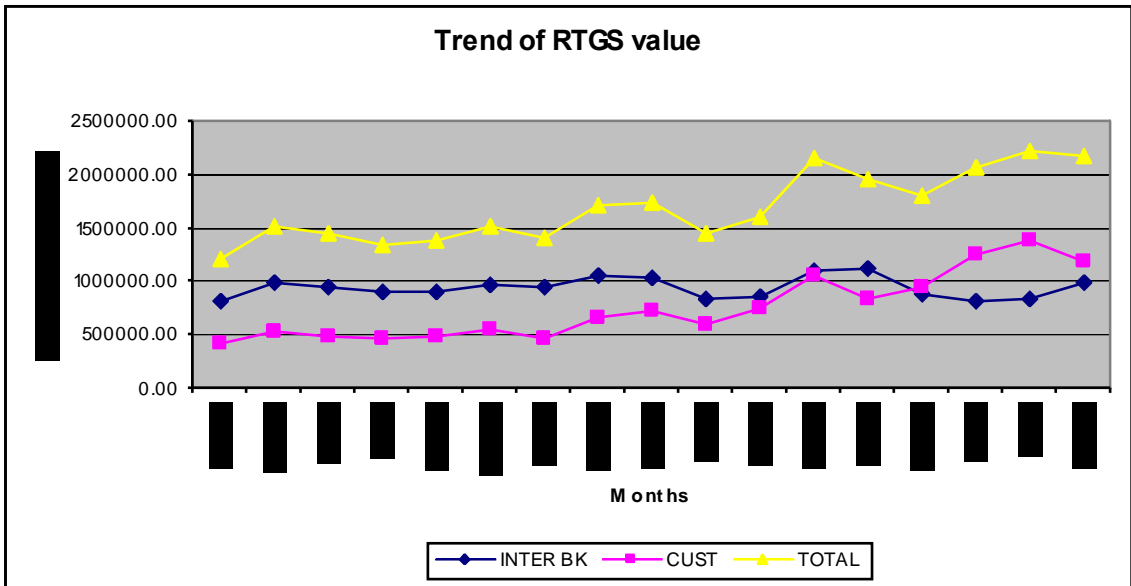
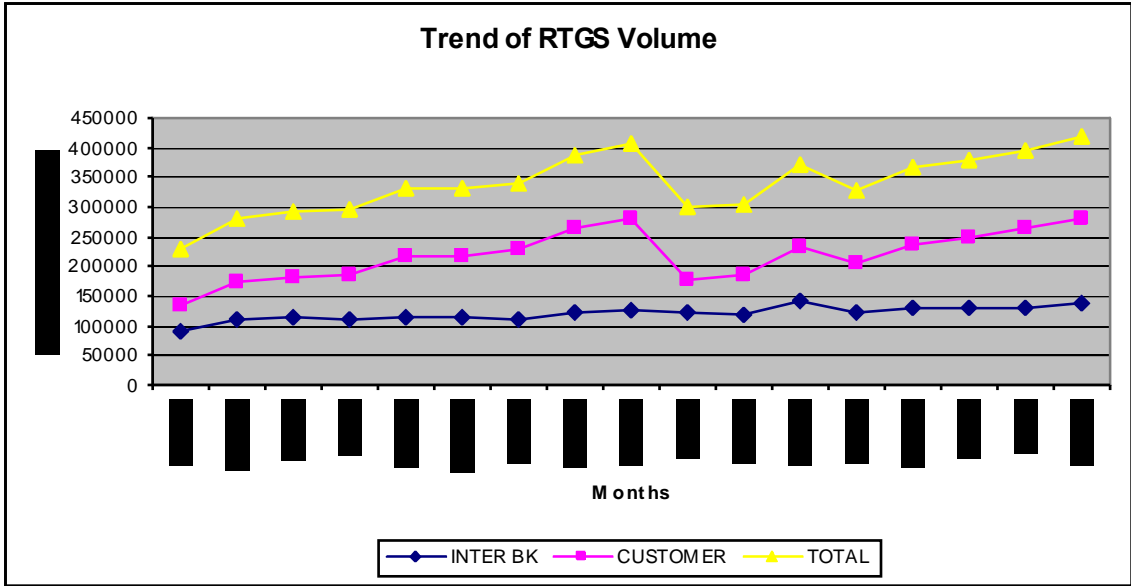


The volume and value transacted through the paper-based mode is very high. In order to ensure smooth operation of this retail payment mode the presentation vs return for the banks is monitored.

In case of an eventuality, when for some reason the settlement for a particular bank could not be affected, the process of partial unwind is resorted to as a final risk alleviation measure. In case a member bank defaults in meeting its liabilities on account of the clearing settlement, the defaulting bank is required to return all the clearing instruments drawn on it back to the respective presenting banks. This would result in a situation as if the defaulting bank did not participate in the clearing settlement.

Apart from the percentage figures relating to 'Return to Presentation' and 'Return to Drawee' which is monitored, the other key parameter which the CPCs are required to monitor is the reject rate – the tolerable rate accepted is between 2-3 percent. However for some centres which are new, the reject rate is quite large.

6.1.6 Real Time Gross Settlement (RTGS) System: The RTGS system was implemented in March 2004. The integration of the Integrated Accounting System (IAS) with RTGS has been implemented in July 2006. The liquidity management is now expected to be done by the participants itself. The monitoring of the request for IDL and its usage by individual participants is not being done presently – but would be taken up. The volume and value of transactions in RTGS on a monthly basis is given below:



6.1.7 Forex Clearing: CCIL is the CCP for the Forex segment. The risk management process relating to forex settlement operation stipulates fixing of Net Debit Cap (NDC) for each member. NDC for a member is arrived at based on two factors: the Counterparty Risk Assessment (CPRA) grading for the member given by a reputed credit rating agency and net-worth of such member. Net Debit Cap is the maximum limit up to which CCIL can take exposure on a member for a settlement date in terms of net US Dollar sale position. Based on the CPRA grading of the member and the market risk which is based on the Value-at-Risk for Rupee-US Dollar Exchange rate for a 3 day holding period, margin factor applicable for the member is also arrived at. Contribution of a member to Settlement Guarantee Fund (SGF) is in US Dollar and is equal to margin factor percentage of NDC for such member.

During the last one year there were 12 occasions of overnight defaults, however, no participant has defaulted three times consecutively. If the participant defaults on three occasions in a quarter, the participant is temporarily suspended.

6.1.8 G-Sec Clearing: Clearing Corporation of India Limited. (CCIL) operates the G-Sec Clearing whereas the settlement for both the securities and funds takes place in the Reserve Bank. CCIL is also the Central Counter Party (CCP). CCIL becomes the central counterparty by novation of the original contracts and also guarantees settlements of both the Securities as also the funds leg of the transactions. Transactions are settled through DVP III which entails multilateral netting of funds and separate of securities Failure in securities settlement could arise on account of default in delivering either securities or funds. There have been a few instance of default which were settled either out of securities in the Settlement Guarantee Fund account or the Securities line of credit. The defaults for funds were met through the cash lines of credit. There is no evidence of chronic default by any of the participants. A participant defaulting on more than three occasions in six months is liable to get debarred from settling transactions through CCIL.

6.2 Measures for Sound Oversight Policy Framework

6.2.1 An assessment of the payment systems in operations vis-à-vis the Core Principles for SIPS, RSSS and against the recommendations for CCP was made to ensure that the minimum standards for operations of Systemically Important Payment Systems are being adhered to. On assessment it is observed that though most of the systems are more or less compliant with the core principles there are areas in which further efforts are required to make SIPS fully compliant with the Core Principles.

6.2.2 Legal Basis:

i. **Payment and Settlement Systems Bill:** On enactment of the Payment and Settlement Systems Bill as a law the Bank would be able to exercise its oversight function on a formal and explicit basis, as opposed to its current fragmented and derived status. On a futuristic basis, the Payment and Settlement Systems Bill also provides the Bank to exercise oversight over Payment and Settlement systems being provided and operated by private entities and enforce changes required to address various parameter for risk reduction.

The Bill when enacted would override other laws and provide for netting and settlement finality and irrevocability.

ii. Pending the enactment of the Payment and Settlement Systems Bill as a law, as an immediate measure, the Electronic Funds Transfer (EFT) Regulations are to be notified which would provide a legal basis for the EFT systems.

6.2.2 Transparency:

i. The central bank is transparent about its policies and the rules, regulations and risks in each of the system provided by it. The publishing of the Oversight Report is a step further in this direction of its assessments of the system which it maintains. It needs to be ensured that the participants also are transparent about their services offered to its customers. The participants should also do a self assessment and understand the risks they face and follow self discipline. The banks should also be transparent about its policies for the services they provide to the users. Though the Bank has from time to time indicated the need for this, only a few banks are observed to be following it as has been observed from a recent survey conducted by DPSS, RBI.

ii. Transaction costing and service charges being levied by banks need to be analysed.

6.2.3 Efficiency in Retail Operations:

i. Steps have been taken for setting up a separate umbrella organization for retail Payment System for bringing in efficiency in retail payment systems. The organization when set up and starts operations is expected to expand the coverage and usage of retail electronic payment systems. It is expected that it would bring in uniformity in the operations of retail payment systems across the country. This would also help Reserve Bank to divest itself from operational role at some centres and focus on oversight function.

ii. The Bank has prepared the Minimum Standards of Operational Efficiency for MICR Cheque Processing Centres and the MICR CPCs have to submit a quarterly Self Assessment Report on compliance to these standards. The standards relate to encoding of instruments, time schedule, regulated entry into CPC, maintenance of machines, operational procedures, monitoring of reject rates, speed and accuracy of on-line reject repair (OLRR), checking of settlement reports for supervisory signals, return

clearing discipline to be adhered to, enabling banks to download reports / data on-line, reconciliation, customer service, and business continuity plan.

iii. With the increased usage of cards the associated risk with the card systems from security aspect need to be studied.

6.2.4 Disaster Recovery / Business Continuity:

i. For the INFINET, which is a Closed User Group Network used for all payment systems applications, the telecommunication services are sourced from only one service provider. The ISDN connectivity which is the back-up to the leased line from the participants to the Host system is again from the same service provider. Though VSAT is the alternate available network, not much use is being made as the response time is very slow. This issue needs to be addressed in consultation with IDRBT to avoid any operational risks.

ii. The RTGS system has been designed for migrating all High Value transactions to RTGS and it needs to be ensured that it works smoothly. For this on-site back-up as also off-site back-up is being set up.

The NEFT system which has been implemented for retail payments at present has six settlements a days. A minimum threshold of Rs.1 lakh has been implemented for RTGS. However, there is no minimum or maximum ceiling for NEFT system.

As RTGS is a SIPS and time critical, in case of eventuality, the NEFT system could be used as a back-up understanding fully well that settlement in RTGS is on a gross basis whereas in NEFT it would be in a DNS mode. This should be used only till such time, the full fledged Data Centre with off city back up is set up.

iii. The MICR Clearing system has stabilized over a period of time and people have confidence in the system. However, during the recent period of strike in one of the banks, the clearing system was put to halt and it was a learning point for the Bank. It brought forth the need for setting up of the MMBCS at the second largest bank in the centre and that banks need to maintain account with a minimum balance with the other bank as well so that clearing operations are not hampered.

6.2.5 Co-ordination among Departments: For effective oversight, a need for better coordination among the various departments of the Bank involved is a necessity.

The scope of the coverage for oversight needs to be prepared and the supervisory departments need to give a feedback report to the DPSS assessing the participants against these.

6.2.6 Assessment of CCIL: The second assessment of CCIL, the CCP for Forex as also G-Sec has been concluded. CCIL has also given the status on the suggestions / recommendations made in the audit report.

A study on adequacy of risk management strategies put in place by CCIL for various clearings conducted by it and also the counter-party guarantee services it provides to the member institutions to be undertaken.

6.2.7 Building an effective database: The payment systems statistics for the system operated by the Bank is being collected and published. For a more meaningful analysis and to catch the early signals about the market, the need for an effective database is felt. This should cover the information of other market, like the equity market, etc.

6.2.8 Working with the Banking Codes and Standards Board of India: The Banking Codes and Standards Board of India has been set up. There is a need to have in place an effective coordination between the DPSS, the BCSBI and Indian Banks Association with regard to spelling out "unreasonable" charges for services by banks to their customers and service delivery channels. The Reserve Bank will continuously monitor the level of service charges, to determine whether they are excessive and will similarly monitor the compensation for deficiency in service.

6.3 Others:

- i. To lay down standards for cooperation with other regulators / supervisors in the financial system – within the country and internationally.
- ii. Taking a key role in central banking co-operation in the SAARC region.