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Real Time Gross Settlement: An Innovative Payment System in Indian Banking Industry

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Abstract

India in the past few years is in the phase of economic development while the Indian economy is the tenth largest in the world measured by the nominal gross domestic product (GDP) and purchasing power parity, supported by a GDP growth of 8 to 9% per annum in the period 2004-05 to 2008-09 and 7% to 8% per annum in the period 2009-10 to 2010-11 and Investment and savings rates of 32 to 36%. Banking industry in India is said to be the most crucial sector which play an important role in the economic and social development of India. It is said to be the most dominant financial sector in the country, as it accounts for 80 % of the funds flow through the financial sector in the country. Therefore the development of this sector is utmost necessary for the economic development of the country. Indian banking industry today is in the midst of IT revolution, IT revolution enables banks in India in the development of sophisticated products, providing better market infrastructure, implementation of risk management techniques and help the financial intermediaries such as banks to reach th geographically diversified market. Among such IT products Real time Gross Settlement is derived as one of the innovative system that has majorly contributed in bringing the operational efficiency in payment and settlement system in bank transactions, which is the cause in bringing the efficiency in Indian banking sector as well as the economy . The main aim of this paper is to highlight the following points:

1. Understanding Real Time Gross Settlement (RTGS), its features and working.
2. RTGS Implementation and its present situation in Indian banking industry.
3. Benefits of RTGS to Bankers, customers and companies.
4. Costs involved in Real Time Gross Settlement (RTGS).

Introduction to RTGS

RTGS is a large value funds transfer system whereby financial intermediaries can settle interbank transfers for their own account as well as for their customers. The system effects final settlement of interbank funds transfers on a continuous, transaction- by-transaction basis throughout the processing day. The acronym "RTGS" stands for Real Time Gross Settlement RTGS system is a funds transfer mechanism where transfer of money takes place from one bank to another on a "real time" and on "gross" basis. This is the fastest possible money transfer system through the banking channel. Settlement in "real time" means payment transaction is not subjected to any waiting period. The transactions are settled as soon as they are processed. "Gross settlement" means the transaction is settled on one to one basis without bunching with any other transaction. Considering that money transfer takes place in the books of the Reserve Bank of India, the payment is taken as final and irrevocable. The RTGS system is primarily for large value transactions. The minimum amount to be remitted through RTGS is Rs. 2 lakh. There is no upper ceiling for RTGS transactions. RTGS will eliminate settlement risk in the case of interbank and high value transactions. Banks could use balances maintained under the cash reserve ratio (CRR) instead of the intra-day liquidity (IDL) to be supplied by the central bank for meeting any eventuality arising out of the real time gross settlement (RTGS). The RBI has fixed the IDL limit for banks to three times their net owned fund (NOF). The IDL will be charged at Rs 25 per transaction entered into by the bank on the RTGS platform. The marketable securities and treasury bills will have to be placed as collateral with a margin of five per cent. However, the apex bank will also impose severe penalties if the IDL is not paid back at the end of the day.

Research Methodology

The data for the study has been derived from secondary sources. The secondary sources include internet, journals, magazines, publications of various research agencies.

Understanding Real Time Gross Settlement (RTGS)

RTGS is a large value funds transfer system whereby financial intermediaries can settle interbank transfers for their own account as well as for their customers. The system effects final settlement of interbank funds transfers on a continuous, transaction- by-transaction basis throughout the processing day. The acronym "RTGS" stands for Real Time Gross Settlement RTGS system is a funds transfer mechanism where transfer of money takes place from one bank to another on a "real time" and on "gross" basis. This is the fastest possible money transfer system through the banking channel. Settlement in "real time" means payment transaction is not subjected to any waiting period. The transactions are settled as soon as they are processed. "Gross settlement" means the transaction is settled on one to one basis without bunching with any other transaction. Considering that money transfer takes place in the books of the Reserve Bank of India, the payment is taken as final and

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Review of literature

Chris Furness (2004), in his article has highlighted on the implementation of RTGS system on Indian banking sector, as well as discussed about the benefits of RTGS system towards the bankers, corporates and individuals. According to him, an Indian RTGS means bankers, corporates and individuals alike will benefit from more efficient, faster processing of high value payments. But how fast will the take-up be? What will happen with cheques clearing volumes and values over time? And how will these impact bank revenues? To answer these questions, one needs to understand the drivers that might influence a switch from paper to electronic as well as other developments underway in the payments environment.

Deepak Pareek (2005) in his article, "Indian Payments: A Closer Look at RTGS and Message Flow" has discussed about the initiatives taken by Reserve bank to set up RTGS system in India, along with it he has highlighted the concepts and working of RTGS system. He pointed that the central bank of India has implemented several initiatives to improve the payments system. The most effective of these has been the standardization of message formats and a real-time gross settlement (RTGS) system to equal international solutions.

Anindita Dey (2004), in her article, "RTGS set to spring many benefits", has stated the benefits and costs the RTGS system has brought to the customers as well as to banks. She pointed that a global standard for managing fund transfers, RTGS reduces risks and boosts investor confidence, apart from helping companies manage their working capital requirements more effectively. It short, it also allows companies to collect funds from customers and move money to and from plant sites faster, thereby helping their bottomline's cause. The current archaic settlement system in India is reported to cost 0.2 to 03 percentage points in gross domestic product savings growth. Under it, payment instructions are processed throughout the day but inter-bank settlement takes place only later — typically at the end of the day.

N. S.Vageesh (2004), in his paper has studied and highlighted the working of RTGS in Indian payment system and highlighted how the GTS is different from the NEFT and its benefits of RTGS system which has made the payment and settlement system efficient.

H. R. Khan (2011), in his speech presented at the FICCI-IBA conference on Global Banking: Paradigm Shift on 25 August, 2011 at Mumbai, has mentioned the contribution of E – payment system in Indian banking industry, along with this his has highlighted the E – payment System landscape in India which states the present situation of E – payment system including RTGS system in Indian banking community.

Narinder Kumar Bhasin (2012) in his paper, "Innovations in E Banking - Real Time Gross Settlement", has highlighted the broader framework of RTGS system in Indian banking sector which includes RTGS implementation, operating mechanism, and transaction types.

Features of Indian RTGS

The RTGS Solution rolled out in the Indian financial environment incorporates the best international features and practices. It incorporates features and unique requirements of the financial system in India.

Robust Technologically - Technology has been the driving force for many payment system innovations in the recent past. Not surprisingly, the Indian RTGS system solution aims at being a state-of-the-art solution with the use of the Infinet as the dedicated, secure communication backbone, SFMS as the secure messaging system and IBM's S/390 mainframe system as the robust platform at the back-end for implementation.

Participant's Dedicated Settlement Account - A single dedicated account, the RTGS settlement account for each participant for outward and inward RTGS payments, is provided by the solution, enabling easy monitoring, tracking and reconciliation of the transactions as well as more efficient liquidity management.

FIFO Processing/Transaction Priority - Payment transactions emanating from a participant's payment systems gateway are processed by the RTGS system strictly in first-in-first-out or FIFO basis.

Payment Queues - Payment transactions, emanating from a participant are ordinarily expected to be settled immediately after it is received. This is the essence of a real time system. The system also provides for facilities to the participants to view their respective transactions held in their payment queues, cancel such transactions and even change their priority.

Own Account Transfer - The system provides for the

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participant-initiated movement of funds between various accounts held by it to optimize funds deployment and economize on its intra-day liquidity requirements. Such movement of funds can take place between the participants' settlement and current account as also between two or more current accounts, held by a particular participant. This can also be used as an effective tool for liquidity management by the participants.

Transaction Types - The proposed RTGS system provides for a wide array of transaction types, which can be flexibly deployed to meet varying requirements.

Liquidity and Collateral Management - Any RTGS system entails active management of intra-day liquidity by all participants. To ensure smooth settlement of transactions and to avoid bunching of transactions and delay of credit to other participants, it is imperative that participants ensure, at the time of submission of payment instructions, that there are sufficient funds in their RTGS settlement account to settle their transactions as soon as they are submitted or within a very short interval thereafter.

Intra Day Liquidity - The RTGS system enables the provision of intraday lines of credit by the Reserve Bank of India to the participants of the RTGS system to enable them to meet their intraday liquidity requirements. The RBI at its discretion and under terms and conditions, to be specified by it from time to time, will provide such liquidity. Such intra-day liquidity will be fully collateralized and will be provided to the participants at a charge per transaction.

Gridlock Resolution Mechanism - The solution provides for an optimized gridlock resolution tool to overcome crippling liquidity problems, which have the potential to clog the entire system. This tool may be invoked periodically or at the discretion of the RBI to enable smooth settlement of the RTGS transactions.

Interface with Net Clearing Systems - The Multilateral Net Settlement batches (the new avatar of the existing Clearing batches) will also be settled in the RTGS system. This will ensure more efficient settlement of net clearing batches including the settlement of the transactions, emanating from the Clearing Corporation of India Ltd. (CCIL) and potentially other clearing and settlement agencies as also more efficient monitoring of un-cleared credit positions.

Working of RTGS

Under RTGS, each payment is settled individually on a transaction-by-transaction basis, whereas in the net settlement system, each payment is linked with other payments that are settled through the netting process. If we take the above-mentioned example, under the RTGS system, Bank X would first pay Rs 300 crore to Bank Y and then receive Rs 200 crore from Bank Y. For this purpose, both banks will have to maintain a settlement account with the RBI. At the start of every day, every bank is expected to maintain a balance of Rs 100 crore. All payment instructions will be queued as per time and executed one by one. In case banks need funds/temporary accommodation, they can always get it from the RBI against pledge of government securities.

RTGS Implementation in Indian banking sector

The payment system development in the country is largely depends on the adaptation of technology and new payment instruments. No doubt the payment system is developed but it catches the efficiency with the advent of E – payment system in India. However in Indian cash settlement is mostly favored and is predominantly used. This can be understood with the statistics on payment and settlement system in the CPSS countries which states the value of bank notes and coins circulation as a percentage of narrow money. In the year 2009 -10 India claimed to have 60.07%, while other emerging economies like South Africa, China Mexico had 18.51%, 18.83%, and 39.14% respectively. Therefore the cash based settlement system was actively used which had somehow caused the late adoption of non cash based payment and settlement. In order to promote a safe, secure, sound and efficient payment and settlement system, RBI as a regulator has developed several initiatives in the process of development of E-payment system. In March 2004, Reserve bank operationalized the RTGS in order to mitigate risk involved in the large value payment systems and which enables settlement of transactions in real time, on a gross basis. Almost all the inter-bank transactions in the country and many time-critical customer transactions are now settled through this system. RTGS is found to be fully secured electronic funds transfer system where banks and customers can receive payments on real time basis.

Present situation of Real time Gross Settlement in Indian banking industry

Electronic Payment Systems accounts for 41% of the total volume of transactions while it represents 90% of the total value of transactions. Introduction of electronic payment products such as Electronic clearing service and electronic funds transfer, which over the years have transformed into National ECS and National EFT and RTGS have ushered in new ways of payment processing. Introduction of RTGS system in March 2004 has witnessed a steady growth in both value and volume terms and now extends to 77,093 branches as at the end of June 2011. RTGS settles gross inter-bank and customer (Rs.2 lakh and above) transactions. On an average RTGS settles 1.8 lakh transactions with a value of Rs. 4 trillion on a daily basis. Looking at the inward and outward

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RTGS transactions by the banks in India both in terms of value and volume, we can say that that the RTGS system is in an increasing trend, which enables settlement of large value of transactions. (For detail refer, Table – 1, 2 & 3 in the appendix). RTGS settled 49.27 million transactions in the year 2010-11 out of which customer remittances, interbank remittances and interbank settlement constitutes 45.73 million, 3.53 million, and 0.01 million respectively, as against 33.25 million transactions in the year 2009-10 and 13.38 million in the year 2008–09 (For details refer Table-4 in the appendix). Therefore considering the importance of RTGS for settling large value payment systems, action has been initiated for putting in place a Next-Gen RTGS.

Benefits of RTGS

Intraday Finality

The settlements in RTGS are final and irrevocable whereas in certain other payment systems, the settlement is only provisional because of which there is a chance of revoking the transactions. Hence in RTGS system, the transaction reaches finality in the same day or T+0 settlements.

Reduced Risks

The RTGS system eliminates the risks inherent in the transaction processing system which provides provisional settlement.

Systemic Risk

Systemic Risk is the risk involved in, when one participant in the settlement chain fails to meet his payment obligation it affects the payment obligation of other participant leading to a chain reaction where the entire system is collapsed. Systemic risk is high in the payment system where the transactions can be revoked after settlement. In RTGS the settlement is final and irrevocable thereby avoids the systemic risk.

Credit Risk

The Credit Risk is the risk that the counterparty will not meet its obligation when it is due and anytime after that. The main source of credit risk is the time lag between the execution of transaction and the settlement of transaction. In RTGS, the transaction information is processed and settled immediately avoiding the time lag which is the source of credit risk.

Liquidity Risk

If the counterparty will not meet its obligation when it is due but will meet at an unspecified future time, the payee will be seriously affected to meet its own obligation. The payee may have to fund from other sources to meet his obligation and this risky situation is called Liquidity risk. Again time lag is the source of Liquidity Risk which is avoided in RTGS due to instant settlement.

Predictability of Cash Flow

RTGS facilitates predictability of cash flows as customers know when their accounts will be debited or credited.

Velocity of Funds

Since the transactions in the RTGS are processed and settled intraday, the chances of further payments increase without the risk of defaults. Thus the velocity of funds increases leading to high amount of turnovers.

Delivery versus Payment

The Delivery versus Payment (DvP) settlement means the delivery of securities and the payments are exchanged simultaneously. The RTGS system facilitates DvP type of settlement if it is properly integrated with the Central Depository Systems. The title change of securities happens in the Central Depository System and the corresponding payment leg happens in RTGS. Exchange of message occurs between Central Depository System and RTGS system for the acknowledgement of delivery and payment respectively. Hence the delivery of securities and the corresponding payment occur in one logical unit of work.

Payment versus Payment

The Payment versus Payment (PvP) settlement means the two legs of the foreign exchange settlement happens in one logical unit of work. Thus Payment in one currency and the corresponding payment in another currency occur together, and none of the legs can be revoked later. By this way, both the legs reach finality eliminating the foreign exchange settlement risk. This is a great benefit because of the unpredictable movements in the exchange rates of currency.

The advantage for companies

The benefits to the companies are:

1. Float Reduction

2. Better supplier-buyer relationships and improvements in working capital

3. Reduction in overall payment processing and tracking costs and ability to reconcile receivables automatically

1. Float Reduction

Float cost is defined as the (principal amount x cost of funds x no of days) ÷ 365. Float in respect of a cheque can arise due to: a) the mail\courier time taken between dispatch and receipt by the beneficiary; b) time beneficiary takes in depositing the cheque at their bank; and c) the cheque clearing time for good value to be received on the beneficiaries' account. Because of the vast geography in India, such float costs can be high. For example, if a corporate with annual sales of INR100 million, makes all payments by cheque - when cost of funds is 10% and the average cheque float days is 10 days - the annual cost to the company is

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INR273,972 or 0.27% of sales.

If we ignore the bargaining power between payer and beneficiary for the time being, the payer would appear to have some financial advantage in paying by cheque rather than electronic. Firstly, he is probably not incurring any charges for issuing a cheque. (I have always found it counter-intuitive that banks in this part of the world don't charge for cheques when there is such a high cost involved in processing such items, not to mention the increased risk of fraud versus electronic payments). Secondly, the float cost is actually in the remitter's favour. That is to say, the remitter may get the use of funds for an additional ten days and if his cash forecasting model is effective he can make use of these funds, even if it is only to the extent of reducing his overdraft and borrowing cost.

But if the remitting company were to solely concentrate on the float cost and ignore the other benefits associated with electronic payments, it may miss the bigger picture and the 'Holy Grail' which leads to the next benefit.

2. Better Supplier-Buyer Relationships and Improvements in Working Capital

A more timely and transparent payment mode can certainly improve supplier relationships and this should also result in improvements in overall working capital management. As counterparties are now able to respond faster to a payment credit, expectations rise goods will be shipped faster, thus facilitating the trend to just-in-time deliveries and thus reduction in overall working capital cost. These savings will be considerably greater than the float costs mentioned above. Indeed, if companies were to adopt electronic mechanisms for both payments and receipts, the float considerations would largely cancel each other out and one could concentrate on improving the working capital cycle.

3. Reduction in Overall Payment Processing and Tracking Costs and Ability to Reconcile Receivables Automatically

Tracking paper remittances - from issuance of a cheque, to dispatch and clearance - is far more costly for both the remitter and the beneficiary than for electronic payments as audit trails are readily available, especially if the transaction is delivered and reported electronically. Electronic payments should also enable straight-through processing and if initiated with a sufficient amount of remittance detail (and such details are passed through the payment chain), this should lead to corporates being able to auto reconcile their accounts receivables, thereby reducing administration expense and improving cash flow forecasting ability. However, discipline is required to enable STP auto reconciliation. Perhaps the best way to explain this is to illustrate how reconciliation typically happens in today's environment.

If payment is made by cheque, the instrument is usually accompanied by instructions or invoice level details in respect of the application of those funds. The beneficiary is therefore knowledgeable as to the 'Who' and the 'What' in respect of the payment. Reconciliation still needs to be made manually and this is both time consuming and costly causing some organizations to outsource this to their banks. Now if the payment is to be made by electronic means, the various parties involved in the payment transaction must allow for sufficient and correct information to flow through to the beneficiary for reconciliation. Unfortunately, electronic payment platforms, including India's RTGS, restrict the amount of information that can pass through the system; to exacerbate the problem further the banks' own operating platforms can have similar restrictions. Thus the beneficiary could get a credit to his account with little knowledge as to the 'Who' and the 'What'. Clearly what is needed is a process and commitment to pass sufficient data through the payment chain to allow for auto reconciliation. Since there is a limitation on the data that can pass through the payment chain, there needs to be a link between payment and remittance advice by some form of Unique Reference Identifier (or URI) which is of sufficient length to enable unique recognition as well as short enough to pass through the entire payment chain. This URI must enable reconciliation back to a Full Remittance Advice that can pass outside the payment process. The full remittance details can pass by paper or electronic means between the Buyer and Supplier. Indeed it can be outsourced to a 3rd Party, even a Bank.

The cost of RTGS

Banks will charge an RTGS transaction fee depending on their relationship with the customer. Bankers said prices will vary from Rs 50 to Rs 200 per transaction. Pricing terms could be negotiated and special offers could be given if a customer maintains a permanent account with the bank in the form of savings or current account or has housing loan or credit card facility with the specific bank. The pricing will also differ if the amount is more than Rs 1,00,000.Another reason for Indian banks to hike their fees is to make up for loss of 'float money' or interest earned while funds take up to five days to move from one account to another. You see, commercial banks clear cheques worth roughly Rs 25,000 crore (Rs 250 billion) a day and they earn 4.5 per cent annually by deploying those funds on an overnight basis. But float money will fall with the introduction of RTGS, so banks will have to recover not only the transaction fee that the RBI will be charging them, but would also have to compensate for the loss of float-based earnings. Banks, which earn an average six per cent of their total income from fees, charge retail customers between Rs 10 and Rs 20 to send Rs 10,000 to a rival bank in another city. Moreover the banks will charge a higher fee if the funds are flowing out of the bank or the customer is making a payment from his bank's account.

Conversely, the fees will be less if the funds are coming into the bank.

Conclusion

The RTGS system implemented by the Reserve Bank has been in operation for more than five years. The system has also stabilized over the years and has been witnessing increased coverage in terms of bank branches and transaction volume. The volume of RTGS (Real Time Gross Settlement System) transactions is increasing rapidly. RTGS settled 49.27 million transactions in the year 2013-14 as against 33.25 million transactions in the year 2012-13 and 13.38 million in the year 2011–12. Customer transactions settling in RTGS presently constitute 89 percent of total RTGS transactions and are growing. From the above data it can be concluded that an efficient payment system like RTGS is essential for conducting trade, commerce and other forms of economic activities in any country because an efficient payment system functions as a lubricant speeding up the liquidity flow in the economy and creating a momentum for economic growth.

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