

3 Payment and Settlement Systems

3.1 Overview

A sound and efficient payment and settlement system is essential for efficient functioning of the modern financial system. Smooth functioning of the payment systems is crucial for maintaining the financial and monetary stability in the economy. The State Bank of Pakistan has played an important role in creating an institutional framework for development of a safe, sound and efficient payment system for the country. In recent years, the pace of developments in technology has helped in improving the efficiency of the payment and settlement systems. Development in computer and electronic technologies has made it possible for the banking system to introduce new financial instruments and open avenues for electronic payments. With a view to promote efficient payment system, the SBP has taken several initiatives to develop and promote electronic payments infrastructure. Towards this end, SBP has arranged automated clearing facilities through National Institutional Facilitation Technologies (NIFT) and recently introduced a Real Time Gross Settlement System (RTGS) that would enable banks to settle their large value payments in real time using a computerized network.

While the SBP oversees the payment system, BSC handles operational areas of the system and support SBP in maintaining an efficient and reliable payment and settlement system through a wide network of its sixteen field offices across the country. Field offices of BSC assist SBP in managing clearing services, providing exchange settlement accounts to the financial institutions, implementation of RTGS, and issuance of banknotes and coins etc. All of these activities are aimed at promoting and maintaining a sound and efficient payment and settlement system.

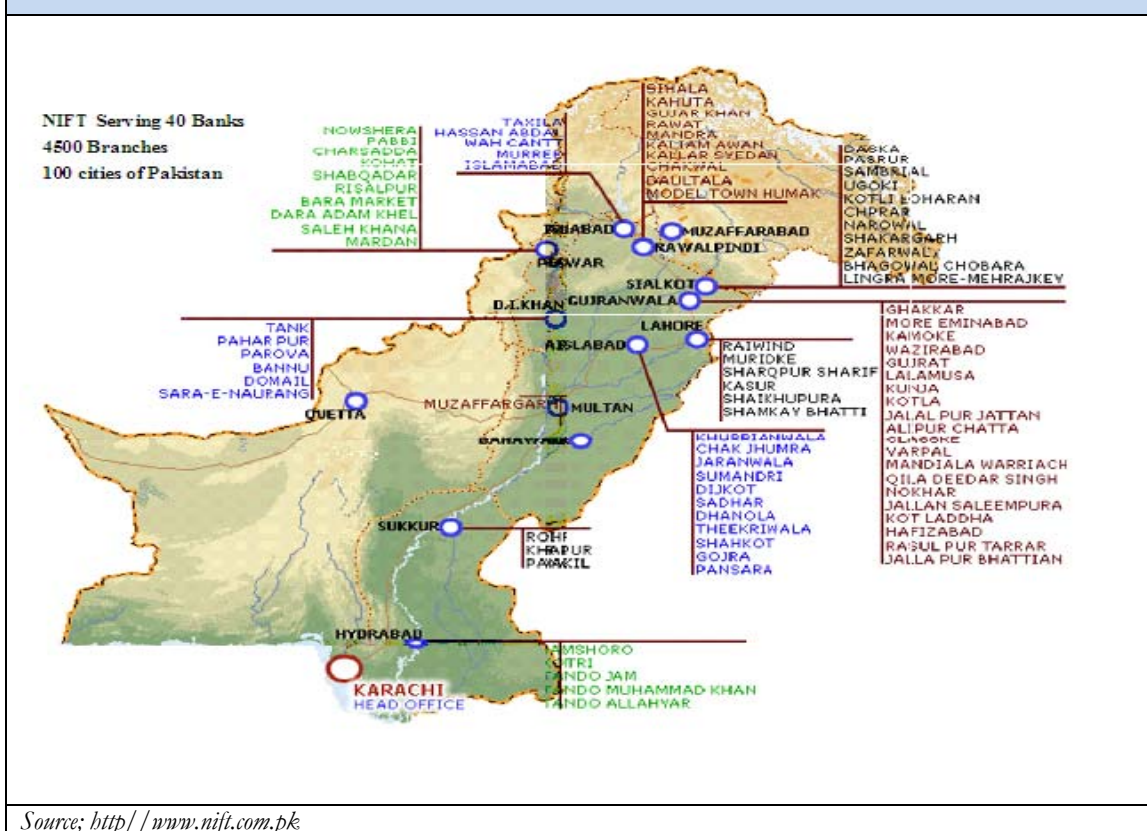
3.2 Clearing Services

The clearing of transactions is one of the major functions of payment system and BSC has actively contributed in the development of automated clearing services in the country. For this purpose, an agreement was executed with NIFT, which provides a nation-wide mechanism to process and settle the transactions between the commercial banks with the extensive coordination of BSC field offices. The automation of clearing operations which commenced with the establishment of first centre at Karachi (in 1996) has now been extended to all major cities of Pakistan. The automated clearing operations which were previously available at 15 cities where BSC offices are located covering 80 satellite cities have now been extended to 107 satellite cities providing services to 751 satellite branches of commercial banks located in these cities. This has resulted in an overall coverage of over 4,500 branches of commercial banks country-wide. Further, NIFT is in the process of extending its services to Mirpur, Jehlum, Sargodha, Abbotabad, Sahiwal, Bahawalnagar, Sadiqabad, Larkana and Nawabshah to undertake automated clearing of financial instruments. Almost entire country is now on NIFT Automated Clearing House Grid (see figure 3.2). At such places where BSC offices are not located and the area is also not covered by NIFT the clearing and settlement services are provided by National Bank of Pakistan. The NIFT clearing system is now supported by a Public Key Infrastructure (PKI) which is a

secured web based reporting service. This facility, which was primarily created to support countrywide multilateral netting, has a number of business advantages for the user. This system is active for all bank branches serviced by NIFT. In addition, NIFT is also offering the value added services through internet access of scanned copy of the payment instruments and clearing details as an additional facility to member banks.

As manual processing of cheques has been discontinued in above mentioned cities, same are processed through automated clearing houses run by NIFT, instruments are required to be standardized and made “Machine Readable” by using Magnetic Ink Character Recognition Code Line (MICR) as per practice adopted by the developed countries. In this perspective, BSC initiated the project relating to standardization of financial instruments a few years back and due to its extensive efforts, all the payment instruments issued by the BSC field offices, commercial banks and other financial institutions have since been standardized and made machine readable. Meanwhile, the government departments are being actively pursued and coordinated for standardizing their payment instruments as well.

Figure 3.2 Nationwide Clearing Grid (NIFT)



Source: <http://www.nift.com.pk>

Presently the NIFT is processing six clearing cycles namely; Normal, Intercity and Same Day clearing cycles and their respective returns. The remaining three cycles pertaining to clearing returns which are currently settled directly are expected to be settled soon through the RTGS system. In this connection, BSC field offices have assumed the responsibility that all the participating banks and members including themselves will adhere to the timeline fixed to send the cheques to NIFT for clearing and that any additional cheque will not be sent after finalization of composite net. NIFT has also started to provide RTGS specific settlement messages to the RTGS project office. For this purpose, special business window as per the following schedule has been introduced to settle first three main clearing cycles:

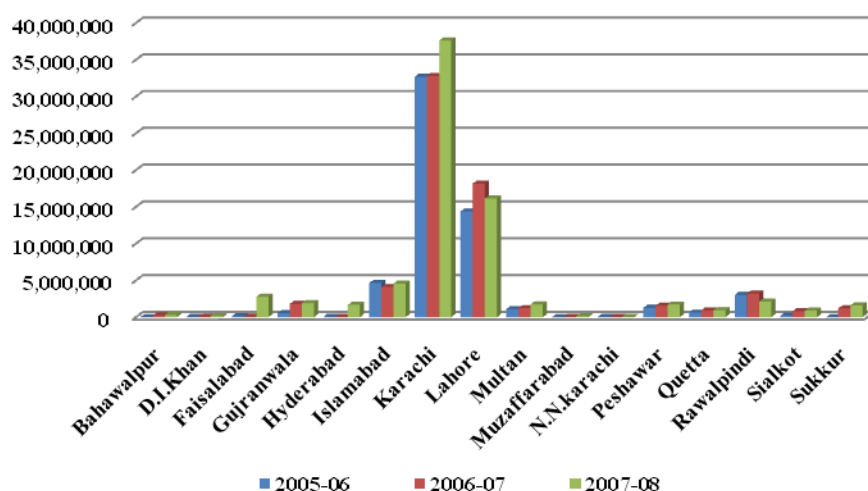
- Normal clearing 9.30 am
- Intercity clearing 1.00 pm
- Same day clearing 1.00 pm

The number of instruments cleared through automated clearing houses operated by NIFT during the last three years (Table 3.2) clearly indicates a significant increase in the volume of instruments cleared through the system. The total number of instruments cleared during 2007-08 stood at 74,264,349 as compared to 66,347,664 instruments in 2006-07 showing an increase of 11.9 percent. The volume of instrument cleared during 2007-08 registered a substantial increase of 26.4 percent when compared to 58,747,655 instruments cleared in 2005-06.

Table 3.2 Instruments cleared through NIFT clearing houses

S#	Office	2005-06	2006-07	2007-08
1	Bahawalpur	9,300	238,041	289,312
2	D. I. Khan	23,483	88668	144315
3	Faisalabad	131,202	93343	2787335
4	Gujranwala	545,616	1818430	1912816
5	Hyderabad	51,046	49484	1,671,053
6	Islamabad	4,631,761	4,108,620	4,565,596
7	Karachi	32,689,355	32,800,758	37,613,610
8	Lahore	14,382,386	18,156,103	16,129,445
9	Multan	1,100,476	1,232,908	1,722,821
10	Muzaffarabad	-	23,325	127,387
11	N. N. Karachi	15,940	28247	27857
12	Peshawar	1,280,824	1558274	1713414
13	Quetta	622,202	921,115	936,147
14	Rawalpindi	3,037,832	3,218,694	2,116,794
15	Sialkot	226,232	818753	889633
16	Sukkur	-	1,192,901	1,616,814
Total		58,747,655	66,347,664	74,264,349

Figure 3.2 Instruments cleared through NIFT Clearing Houses



3.3 Real Time Gross Settlement

Real-Time Gross Settlement (RTGS) is a concept designed to achieve sound risk management in the settlement of interbank payments. In RTGS system, transactions are settled across accounts held at the central bank on a continuous gross basis where settlement

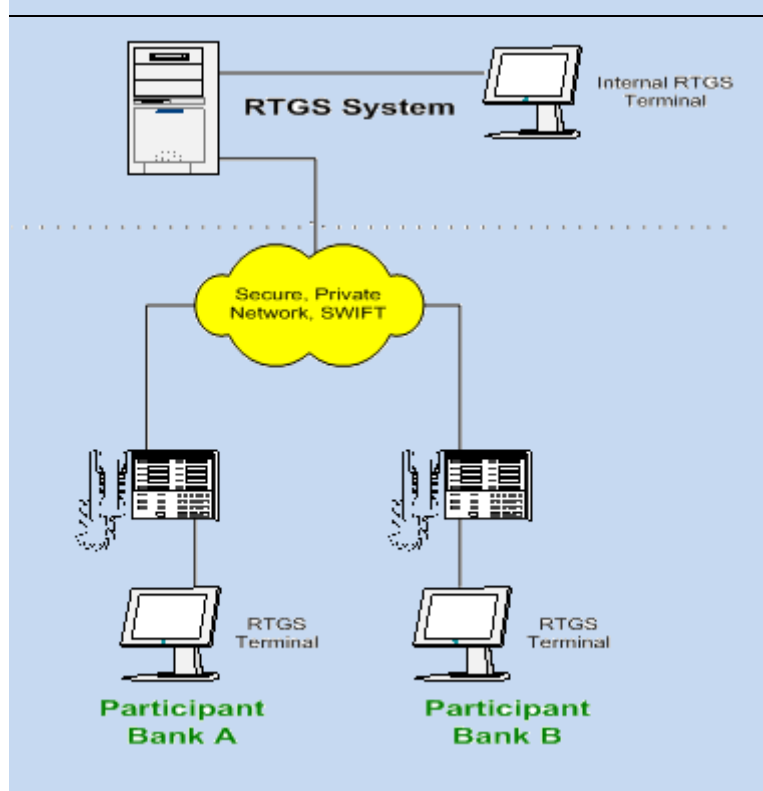
is immediate, final and irrevocable. The RTGS system in Pakistan has been named as Pakistan Real-time Interbank Settlement Mechanism (PRISM). Using this system, the banks maintaining their accounts with SBP-BSC field offices would be able to operate their accounts in real time from their own premises via computerized network between SBP and the participating banks. This system will enable the banks to settle with finality their large value transactions affecting their accounts at BSC field offices (e.g., interbank lending/ borrowing) immediately, provided sufficient balance is available in their accounts. At times,

banks may face temporary shortage of funds in their accounts during the day. This shortage would be catered for in the system through the availability of intraday repurchase agreements (a form of collateralized lending). Alternatively, the transaction can also be queued in the system until the required liquidity becomes available. The system will offer a powerful mechanism for limiting settlement and systemic risks in the interbank settlement process, because they can effect final settlement of individual funds transfers on a continuous basis during the processing day. It will also contribute to the reduction of settlement risk in securities and foreign exchange transactions by providing a basis for Delivery Versus Payment (DVP) or Payment Versus Payment (PVP) mechanisms.

3.3.1 PRISM (RTGS in Pakistan) – Features & Implementation

The first and second phases of the PRISM viz settlement of interbank clean transactions and settlement of NIFT's retail clearing were started with effect from 1st July and 14th July 2008 respectively. The officers of BSC field offices particularly of Karachi office have played a proactive role in timely implementation of the system, trouble shooting, removing teething problems and coordinating amongst the participants. The system has features that would benefit the market participants by enabling them to effectively utilize their liquidity and reduce payment related risk. Some broad features of the system are as under:

Figure 3.3 RTGS Architecture



- Around forty (40) commercial banks and DFIs would be the initial direct participant members of PRISM. Some other account holders with SBP-BSC would be the indirect members of the RTGS system.
- Intraday Liquidity Facility (ILF) would be offered to banks collateralized against government securities so that the payments may be cleared immediately.
- The system also has queue management features and mechanisms for Grid Lock resolution.
- The system will also hold government securities portfolios and will enable securities trade matching for DVP and intraday liquidity management
- The security component of the system will provide Public Key Infrastructure (PKI) and transactional and link encryptions for data security.
- Centralized multilateral netting of retail clearing was a mandatory pre-launch requirement for smooth functioning of the PRISM system. Previously the country-wide retail clearing operations were done in the sixteen field offices of BSC across the country. Now with the help of NIFT, SBP has started country-wide multilateral netting and centralized settlement of cheques.

3.3.2 Impact of PRISM

- Banks will be able to receive/ pay funds on real-time basis, trade government securities on DVP basis whereby securities will be transferred to buyer's account only against the simultaneous payment of funds to the seller of securities, thus eliminating the settlement risk.
- Banks will be able to monitor their payments in real-time and change their payment priority (if queued) giving them more control over their funds.
- Centralized multilateral net settlement in the system will enable banks to efficiently use their liquidity, which previously they had to maintain in different current accounts with the BSC field offices for retail clearing.
- Corporate customers of the banks will also be able to use the system for their time critical payments.
- RTGS implementation provides the capability of connecting with various other regional/ international payment systems for foreign exchange, government bonds, and private equity settlements.
- RTGS system will also provide enhanced capability to SBP to monitor the inter bank transactions and to conduct OMO thus affecting the monetary policy.