

## Payment and Settlement Systems

11.1 Payment and Settlement System consists of a set of physical & electronic infrastructures and instruments with associated procedures and protocols for the transfer and settlement of financial obligations arising from the exchange of goods and services aiding the central bank to ensure the circulation of money. Well-integrated electronic payment and settlement systems have already proved their potential as fundamental tools for promoting financial stability in developed countries. Efficient payment and settlement system facilitates the central bank to achieve its monetary policy objectives by using the market-based instruments. Central banks worldwide perform either or both the operator and overseer role for enhancing the efficiency of the financial system and the economy as a whole.

**11.2 Functional Areas of Payment Systems:** According to 7A (e) of the Bangladesh Bank Order, 1972 one of the main functions of the Bangladesh Bank is - "to promote, regulate and ensure a secure and efficient payment system, including the issue of bank notes." In fulfilling this mandate and considering the importance of having a state-of-the-art payment and settlement system for Bangladesh, Payment Systems Department (PSD), BB has been working on payment systems strategy, automated cheque processing system, electronic funds transfer, national payment switch, mobile financial services, e-commerce, m-commerce, legal & regulatory framework for electronic payment systems in the country.

**11.3 Traditional Payments Scenario:** The traditional paper based payment system was semi-automated, time consuming and prone to many risks. The system was not at par with international best practices. It took t+2 or t+3 days to clear the cheques and other paper-based instruments within a clearing region. The inter-regional instruments required even much longer time to clear. Four payment and settlement systems had been in operation in Bangladesh prior to 7 October 2010. They were: (a) Bangladesh Bank's Clearing Houses in eight clearing regions; (b) Sonali Bank's Clearing Houses in 31 cities where there are no BB branches (c) the BB large value cheque settlement system and (d) the BB Foreign Currency Clearing System in Dhaka. The instruments like cheques, bank drafts, pay orders, dividend & refund warrants, etc. were being cleared through the manual clearing houses. Apart from such non-cash payment instruments credit card, debit card and ATM transactions are popular specially in the urban areas.

**11.4 Initiation of the Change:** Although the ever-changing fast-paced financial & trading landscape of Bangladesh was demanding more rapid payment mechanism, overnight overhauling of traditional paper-based system was impracticable. Moreover insufficient IT infrastructure and legal & regulatory framework were dominant barriers for developing electronic payment systems. As such point of time, BB took maiden initiative to replace the traditional paper based clearing and settlement system by an IT-centric fast, secured, and efficient system. With the

technical and financial assistance from Department for International Development, United Kingdom (DFID, UK), Bangladesh Bank started working to implement Bangladesh Automated Clearing House (BACH), the first electronic clearing house in the country, from October 2006.

**11.5 Payment Systems Strategy:** Bangladesh Bank's 'Strategic Plan 2010-2014' lists foremost near and medium term strategies for the development of payment and settlement systems of Bangladesh. Most of these goals are already achieved by this time while others are in the implementation process. PSD of DCMPS has revised the earlier strategies and devised newer priorities. The new strategy has been set to - "Develop effective and efficient currency management alongside establishing fast and secure electronic payment systems for facilitating financial inclusion." PSD has revised the earlier objectives and devised newer priorities. Importance was given to implement newer payment platforms i.e. National Payment Switch (NPS), e-payment Gateway and Real Time Gross Settlement (RTGS) as well as upgrading the required legal and regulatory framework befitting the electronic payment platforms. Table 11.1 lists the newly set objectives for modernising country's Payment and Settlement Systems.

**11.6 Payment Platforms Operating at Present:** The electronification of traditional paper-based clearing system started with the live operation of Bangladesh Automated Cheque Processing System (BACPS) from 7 October 2010. Later, electronic funds transfer, e-commerce, mobile financial services, and m-commerce facilities modernised further in line with the objectives of payment and settlement systems as set in the strategy. These payment platforms are briefly described in the following sections.

**Table 11.1 New objectives for modernising country's payment and settlement systems**

1. Establish required legal and regulatory framework for electronic payment systems
2. Promote and encourage the use of electronic funds transfer, mobile financial services, e-commerce, m-commerce, shared ATM, POS, etc.
3. Establish National Payment Switch (NPS) for facilitating electronic payments originating from different delivery channels e.g. ATM, POS, Internet, Mobile, etc.
4. Establish e-payment gateway
5. Establish Real-Time Gross Settlement (RTGS)

**11.7 Bangladesh Automated Clearing House (BACH):** BACH, the first ever electronic clearing house of Bangladesh, has two components - the Automated Cheque Processing System and the Electronic Funds Transfer. Both the systems operate in batch processing mode; transactions received from the banks during the day are processed at a pre-fixed time and settled through a single multilateral netting figure on each individual bank's respective books maintained with the BB. A state-of-the-art Data Centre (DC) and a Disaster Recovery Site (DRS) have been established comprising of most modern software and hardware for dealing with the operations of BACH. A Virtual Private Network (VPN) has been created between the participating commercial banks and Data Centre (DC) & Disaster Recovery Site (DRS) for communicating necessary information related to BACH. Digital Certificate has been formulated for the first time in Bangladesh for secured data communication.

**11.8 Bangladesh Automated Cheque Processing Systems (BACPS):** BACPS uses the Cheque Imaging and Truncation (CIT) technology for electronic clearing of the paper-based instruments, i.e. cheque, pay order, dividend & refund warrants etc. The

system supports both intra-regional and inter-regional clearing and is based on a centralised processing centre located in Dhaka and in designated clearing regions. The system conforms to the international best practices and also represents the most cost-effective solution for cheque processing throughout the country. Following successful System Integration Test (SIT), Live Simulation Test (LST) and Live Day Simulation (LDS), Bangladesh Automated Cheque Processing Systems (BACPS) has started its 'Live Operation' on 7 October 2010. Gradually other clearing regions joined the system. Moreover, all commercial bank branches under jurisdiction of 33 chest-branches of Sonali Bank which carry out the clearing functions for BB are now connected to BACH data centre at Motijheel. Besides, some other areas like Savar EPZ, Tongi, Syedpur and Keranigonj have been connected to the BACH data centre, which are selected on the basis of volume and importance of their transactions. Previously there were no clearing houses in these areas.

11.9 At present 1,500,000 (approx.) regular and 90,000 (approx.) high value cheques & other instruments are cleared per month through BACPS (95 percent (approx.) of all the clearing instruments). Total amount of regular value instruments cleared is Taka 428 billion (approx.) and Taka 387 billion (approx.) for high value instruments per month. The clearing cycle has been brought down to t+0 for high value cheques and t+1 for regular value cheques throughout the country. Chart 11.1 and Chart 11.2 show the trends of instruments cleared and associated amount of the regular and high value cheques respectively since the inception of BACPS.

11.10 **Bangladesh Electronic Funds Transfer Network (BEFTN):** BEFTN has started its 'Live Operation' on 28 February

Chart 11.1

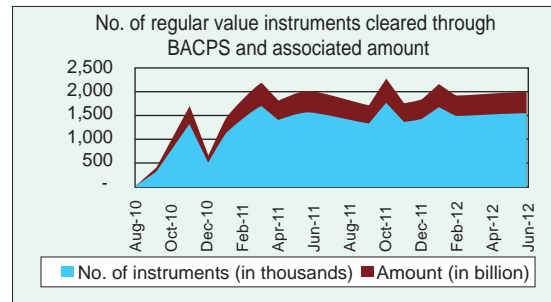
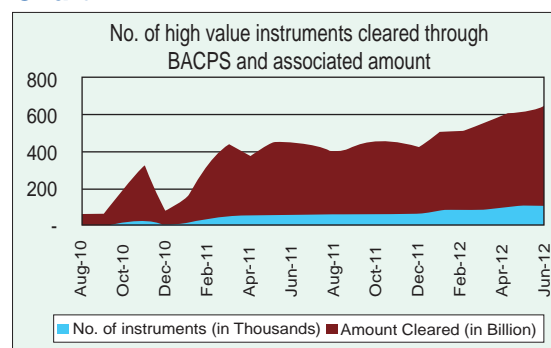


Chart 11.2



2011 with the objective to decrease paper-based payment methods and encourage paper-less payment methods for secured, faster, and cost-effective transactions specially at the corporate levels. The Network started with credit transactions and debit transactions started from 15 September 2011. BEFTN facilitates the transmission of payments between the banks electronically, which makes it faster and efficient means of inter-bank clearing over the existing paper-based system i.e. BACPS. It is able to handle a wide variety of credit transfers such as payroll, foreign and domestic remittances, social security, company dividends, retirement expense reimbursement, bill payments, corporate payments, Government tax payments, veterans payments, Government license fees and person to person payments. Debit transfers handled by BEFTN are: mortgage payments, membership dues, loan payments, insurance premiums, utility bill payments, company cash concentration,

Government tax payments, Government licenses and fees. EFT has been increasing transactions among the various corporate bodies. Apart from that Cabinet Ministers' salaries, salary of the officials of Government agencies like Ministry of Finance, Anti Corruption Commission and salary of Government Primary School Teachers are being distributed through EFT.

11.11 Approximately 200,000 EFT credit transactions and 2,000 EFT debit transactions are processed per month with an increasing trend. The amount of EFT credit transactions is approximately Taka 17.4 billion per month while the amount of debit transactions is Taka 1.29 billion. Chart 11.3 and Chart 11.4 show the trends of EFT credit and debit entries and associated amount since the inception of BEFTN.

11.12 **Mobile Financial Services:** The rapid growth of mobile phone users and countrywide coverage of mobile operator's network have made their delivery channel an important tool-of-the-trade for extending banking services to the unbanked/ banked population, specially to expedite faster delivery of remittances across the country. From legal and regulatory perspective, only the bank-led model is allowed to operate in Bangladesh. Table 11.2 lists the approved Mobile Financial Services (in broad categories) while Table 11.3 shows the prevailing status of MFS in Bangladesh.

11.13 Bangladesh Bank has fixed the maximum transaction limit at Taka 10,000 per day for the account holders of mobile financial services and a total of Taka 25,000 on monthly basis (vide DCMPS Circular No-10/2011, 14 December 2011). Beside the banks, bKash, a BRAC Bank subsidiary, has got approval for facilitating mobile financial services, launched its operation from 21 July 2011. Bangladesh Post Office (BPO)

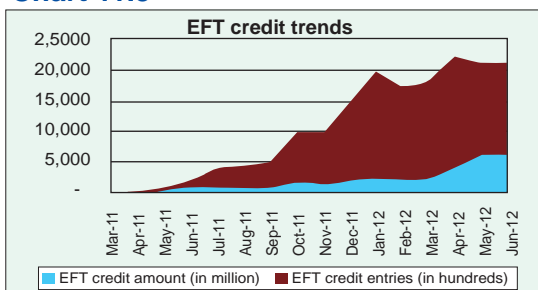
**Table 11.2 Approved mobile financial services (in broad categories)**

1. Disbursement of inward foreign remittances
2. Cash in /out using mobile account through agents/Bank branches/ ATMs/Mobile Operator's outlets
3. Person to business payments (a. utility bill payments, b. merchant payments)
4. Business to person payments (salary disbursement, dividend and refund warrant payments, vendor payments etc.)
5. Government to person payments (elderly allowances, freedom-fighter allowances, subsidies, etc).
6. Person to Government payments (tax, levy payments)
7. Person to person payments (One registered mobile account to another registered mobile account)
8. Other payments like microfinance, overdrawn facility, insurance premium, DPS etc.

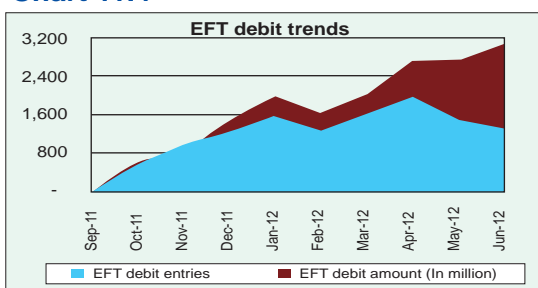
**Table 11.3 MFS status\***

No. of banks permitted	:	23
No. of banks started MFS operation	:	14
Registered customers	:	779,532
Agents	:	18,581
Transactions (billion Taka)	:	10.08
*as of June 2012.		

**Chart 11.3**



**Chart 11.4**



introduced the service - 'post e-pay' from 5 September 2011 with 1968 branches which will gradually be launched in all the 9,886 branches of the post office in phases with the help of countrywide mobile operators' network. Clients have to register themselves with the post office to get the service.

**11.14 m-commerce:** In order to start m-commerce in Bangladesh, mobile network operators have been given permission to sell railway tickets and tickets of cricket matches organised by the Bangladesh Cricket Control Board (BCCB) using mobile technology. Three Telcos have got permission for m-commerce related transactions. Approximately 425,000 utility (water, gas, and electricity) bill payments are made and 12,000 train tickets are sold per month. Besides, tickets of the cricket matches organised by Bangladesh Cricket Control Board are also sold via m-commerce.

**11.15 e-commerce:** BB has issued directives to the banks for starting e-commerce activities. Permitted transactions are - online payment of utility bills from client's accounts to recipient's accounts, transfer of money from one account of a client to another account in the same bank, payment/collection of money from/to buyer's bank account to seller's bank account for purchase/sale of products and transaction via internet using credit card in local currency. From 11 March 2011 following transactions have been given permission: maximum Taka 5,00,000 can be transferred from one client's account to another client's account maintained with the same bank using internet/online facilities subject to the fact that it will fully comply with prevailing Money Laundering Prevention legislations and related circulars.

**11.16 Online Payment Gateway Service Providers (OPGSPs):** In view of the growing role of the services provided by the Online Payment Gateway Service Providers

(OPGSPs), it has been decided to allow the Authorised Dealers (ADs) to offer the facility of repatriation of remittances against small value service exports in non-physical form such as data entry/data process, off-shore IT service, business process outsourcing etc. Under this initiative, the exporters of the above services will be able to receive their overseas payments through the OPGSPs such as Paypal, Moneybookers, Best Payment Gateway, and Virtual Pay online platforms.

**11.17 New Payment Systems Initiatives:** A number of new end-user centric & real-time payment system initiatives have been taken in order to mitigate the ever growing demand for faster and efficient payment methods. Among the new initiatives, implementation of the National Payment Switch (NPS) has been started. A brief description of NPS is mentioned below:

**11.18 National Payment Switch (NPS):** Bangladesh Bank has taken initiative to establish National Payment Switch (NPS) in order to facilitate interbank electronic payments originating from different delivery channels e.g. Automated Teller Machines (ATM), Point of Sales (POS), Internet, Mobile Applications, etc. The main objective of NPS is to create a common platform among the existing shared switches already built-up by different private sector operators. NPS will facilitate the expansion of the card based payment networks substantially and promote e-commerce throughout the country. Online payment of Government dues, using cards and account number information through internet will greatly be enhanced using NPS. PSD, BB has started the implementation of NPS which is funded by the International Finance Corporation-Bangladesh Investment Climate Fund (IFC-BICF).

**11.19 Legal & Regulatory Framework:** In order to give legal and regulatory support for

electronic transfer of funds, BB has published a number of legal and regulatory frameworks which is listed in Table 11.4.

11.20 Steps have also been taken to bring amendment in certain provision of the existing Negotiable Instruments Act, 1881 and Bankers Book of Evidence Act, 1891 in order to provide comprehensive legal backing to the operation of Electronic Clearing House. BB in cooperation with IFC-BICF has drafted Payment Systems Act; reviewed the existing BPSSR, 2009; drafted a new BPSSR, 2012 and reviewed regulations for Electronic Funds Transfer, 2012 and is drafting rules for electronic payments.

11.21 **Awareness Raising Campaign:** Bangladesh Bank has taken a number of initiatives for raising awareness on the new electronic payment systems like automated cheque processing, electronic funds transfer and mobile financial services. BB has organised seminars and workshops for officials of all commercial banks, Govt. offices and industry alliances. Besides, BB has been working to popularise electronic funds transfer network among the stakeholders like Chamber of Commerce, Stock Exchanges, Security Exchange Commission, Central Depository Bangladesh Limited, National Board of Revenue etc.

11.22 Automated cheque processing, electronic fund transfer and mobile financial services have already proved their potential by offering fast, secure and cost-effective

**Table 11.4 Existing legal and regulatory framework of payment and settlement systems of Bangladesh**

1. Bangladesh Payment and Settlement Systems Regulations (BPSSR), 2009 published on 27 April 2009
2. 'Bangladesh Automated Cheque Processing Systems (BACPS) Operating Rules and Procedures' published on 11 January 2010
3. 'Bangladesh Electronic Funds Transfer Network (BEFTN) Operating Rules' published on 11 August 2010
4. 'Guidelines on Mobile Financial Services for the Banks' published on September 2011

financial services. Specially, paper-less EFT transactions popularity is increasing among the corporate bodies, stock exchanges members and industry alliances. Besides, the introduction of mobile financial services, m-commerce, and e-commerce is significantly changing the financial services landscape of the country. When implemented, the NPS will increase end-user centric electronic payments and broaden the landscape for financial transactions in the country. These electronic modes of payment methods have already improved operational efficiency, increased transaction frequency, and brought stability & flexibility in all spheres of the financial market. Implementation of other payment infrastructures as stated earlier will result into an effective and efficient 'National Payment and Settlement System' consistent with its neighbours and international standard.