

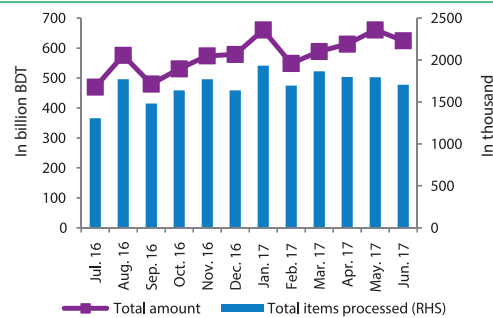
Payment and Settlement Systems

12.1 Efficient payment and settlement systems promote economic development and growth. Payment and settlement systems play a crucial role in the management of a market economy and in the effective implementation of monetary policy. The healthy growth of the financial market infrastructure is achieved through safe and efficient payment and settlement systems ensuring fast and secured transfer of money and financial instruments using modern technological innovations. By delivering the financial services in the rural and remote areas, it also helps the financial inclusions and boosts up the economic momentum and development thereby.

Functional Areas of Payment Systems

12.2 Bangladesh Bank has undertaken various efforts to upgrade existing payment systems with focus on the capacity building necessary to define a long-term strategy for payments in Bangladesh. Considering the importance of having a state-of-the-art of payment and settlement systems for Bangladesh, Payment Systems Department (PSD) of Bangladesh Bank (BB) has been working for the development of country's payment systems since 2006. In this context, Bangladesh Bank has gradually developed payment systems strategy, automated cheque processing system, electronic funds transfer, national payment switch, real time gross settlement, mobile financial services, e-commerce, m-commerce, legal & regulatory framework and appropriate oversight policy for the safe, efficient and smooth operation of technology based payment systems in alignment with international standard. It will

Chart 12.1 Number of regular value cheque and amount



Source: Payment Systems Department, Bangladesh Bank.

enhance faster economic growth and provide for all citizens of Bangladesh an easy access to banking system.

Traditional Payments Scenario

12.3 The earlier traditional paper-based payment systems was semi-automated, time-consuming and risk-prone. The system was not at par with international best practices. Four payment and settlement systems had been in operation in Bangladesh prior to BACH inception. 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 and debit card transactions through ATMs and POS are becoming popular specially, in the urban areas.

Payment Platforms Operating at Present

12.4 Bangladesh Automated Cheque Processing System (BACPS) started its live operation since October 07, 2010 as the first step of modern electronic payment and settlement systems in the country. Later on,

Electronic Funds Transfer, National Payment Switch Bangladesh (NPSB), e-Commerce, Mobile Financial Services, m-Commerce and Real Time Gross Settlement (RTGS) system joined the BACPS to further modernize the payment and settlement systems. These payment platforms are briefly described in the following sections.

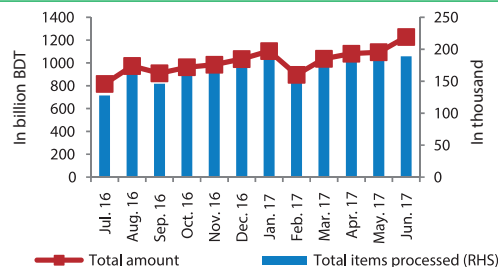
Bangladesh Automated Clearing House (BACH)

12.5 BACH has two components - the Automated Cheque Processing System and the Electronic Funds Transfer. Both the systems operate in batch processing mode. Transaction instruments or instructions 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 book maintained with the Bangladesh Bank. A Virtual Private Network (VPN) between the participating commercial banks and the Data Centre (DC) & Disaster Recovery Site (DRS) of Bangladesh Bank has been serving as a link for communication among the participants for necessary information relating to BACH. Digital Certificates are issued by BACH authority ensuring data communication.

Bangladesh Automated Cheque Processing System (BACPS)

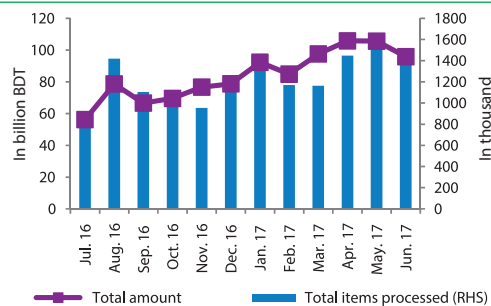
12.6 BACPS uses the Cheque Imaging and Truncation (CIT) technology for clearing the paper-based instruments, i.e. cheque, pay order, dividend & refund warrants, etc electronically. The system is based on a centralized processing centre located in Dhaka and in designated clearing regions and supports both intra-regional and inter-regional clearing .

Chart 12.2 Number of high value cheque and amount



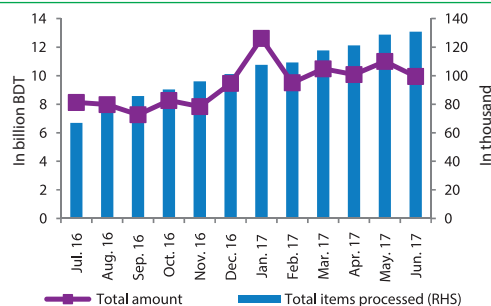
Source: Payment Systems Department, Bangladesh Bank.

Chart 12.3 Number of credit entries and amount



Source: Payment Systems Department, Bangladesh Bank.

Chart 12.4 Number of debit entries and amount



Source: Payment Systems Department, Bangladesh Bank.

The system not only represents the most cost effective solution for cheque processing throughout the country but also conforms to the international best practices in clearing and settling.

BACPS Transaction Status

12.7 During FY 2017, total 20.40 million

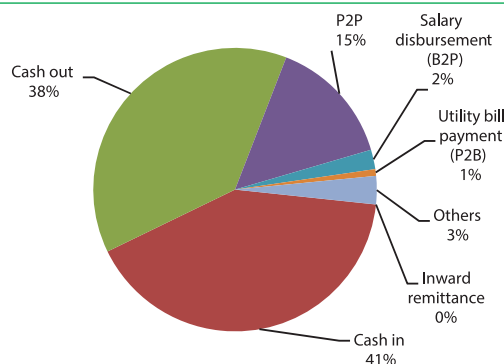
regular and 2.09 million high value cheques and other instruments valued at BDT 6903.23 billion and BDT 12119.36 billion respectively were cleared. The clearing cycle has been brought down to t+1 for regular value cheques and t+0 for high value cheques throughout the country. Chart 12.1 and Chart 12.2 show the trends of the number of instruments and amount cleared in respect of regular and high value cheques respectively in FY17.

Bangladesh Electronic Funds Transfer Network (BEFTN)

12.8 BEFTN started its 'Live Operation with credit transactions from February 28, 2011 with a view to encouraging paper-less electronic payment methods for secured, faster & cost-effective transactions specially at the corporate levels. Later the network started its operations with debit transactions from 15 September, 2011.

BEFTN has become the faster and efficient means of inter-bank clearing system over the existing paper-based system. A wide variety of credit transfers, such as, payroll, foreign and domestic remittances, social security, company dividends, retirement benefits, expense reimbursements, bill payments, corporate payments, government tax payments, veterans payments, government licence fees and person to person payments as well as debit transfers, such as, mortgage payments, membership dues, loan repayments, insurance premiums, utility bill payments, company cash concentration, government tax payments, government licences fees are settled under the network. Till June 30, 2017, officials of 57 ministries are receiving their salary through this system. Besides, salary of the officials of other government agencies of Chittagong and Rajshahi Divisions are being distributed through EFT.

Chart 12.5 Market share of different services in MFS in June 2017



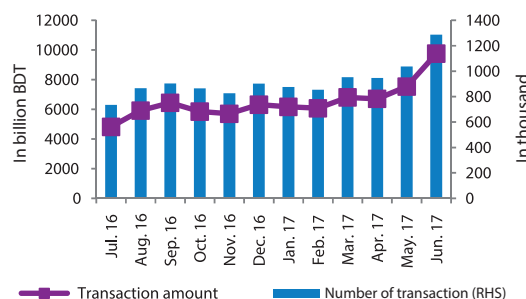
Source: Payment Systems Department, Bangladesh Bank.

Table 12.1 Present scenario of MFS in Bangladesh

Months	No. Agent (in thousand)	No. of registered customers (in million)	No. of transaction (in million)	Transaction amount (in billion)
July 16	610.00	36.58	119.53	176.4
Aug 16	633.29	37.31	123.63	203.4
Sep 16	641.11	37.98	117.68	194.7
Oct 16	671.34	38.95	128.50	206.9
Nov 16	690.00	39.60	129.57	219.3
Dec 16	710.03	41.08	133.73	232.1
Jan 17	724.76	41.93	139.63	251.3
Feb 17	696.72	49.85	133.95	222.9
Mar 17	717.05	50.43	151.78	250.5
Apr 17	734.71	51.38	151.08	250.2
May 17	746.48	52.68	152.05	261.7
Jun 17	758.57	53.70	181.93	300.1

Source: Payment Systems Department, Bangladesh Bank.

Chart 12.6 Trends of interbank ATM Transaction



Source: Payment Systems Department, Bangladesh Bank.

Transaction Status of BEFTN

12.9 During FY17, total 14.9 million EFT credit transactions valuing BDT 1,008.5 billion and 1.2 million EFT debit transactions valuing BDT 112.5 billion have been completed through BEFTN. During this period, a positive or increasing trend in credit as well as debit transactions in respect of number and amount has been observed. Chart 12.3 and Chart 12.4 show the trend of EFT credit and debit transactions respectively in FY17.

Mobile Financial Services (MFS)

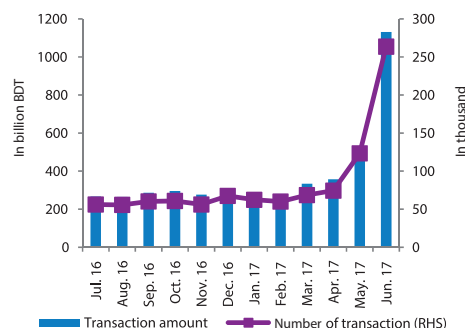
12.10 Rapid countrywide expansion of mobile phonenetworksandmassivemodernizationofthe country's payment systems and financial sector IT infrastructure have opened up opportunities for innovating cost efficient mobile phone based off-branch financial services delivery to the underserved population segments. Utilizing the opportunity, Mobile Financial Services, since inception in 2011, experienced a remarkable growth. MFS becomes a key driver of financial inclusion in transferring money from urban to rural, from privileged to under privileged to fuel the rural economy and in unblocking the advancement opportunities for the unserved and the underserved.

As of June 30, 2017, total 24 banks and 1 subsidiary have been permitted to provide MFS, whereas 16 Banks and one Subsidiary are in operation. Bangladesh Bank permits only bank-led MFS providers to operate in the country.

The permitted Mobile Financial Services in broad categories are as follows:

- Disbursement of Inward foreign remittances (Only the domestic part of transaction, no cross border transaction is permitted);

Chart 12.7 Trends of interbank POS transaction



Source: Payment Systems Department, Bangladesh Bank.

- Cash-in and cash-out using mobile account through agents, bank branches, ATMs and Mobile operator's outlets;
- Person to business payments. e.g. utility bill payments, merchant payments;
- Business to person payments. e.g. salary disbursement, dividend and refund warrant payments, vendor payments, etc;
- Government to person payments. e.g. elderly allowances, subsidies, etc;
- Person to Government Payments e.g. Tax, Levy payments;
- Person to Person Payments (One registered mobile account to another registered mobile account);
- Other Payments like microfinance, overdrawn facility, insurance premium, DPS, etc.

It is crucial for Mobile Financial Services Providers to be enabled technologically to deliver the services and to make the mass people aware of the possible benefits of the system. Massive campaign, wide span network of agents, any time-any place- anywhere nature

of the service makes it a household service to most of the people. But Over the Counter (OTC) transactions, fraudulent activities ignited from the lack of knowledge of the customers, high price of the services, and absence of interoperability are areas seeking more careful supervision from regulator and internal control and compliance from operators. With a view to overcoming the concerns mentioned above and providing an orderly, enabling and competitive environment for optimal utilization of the new windows of opportunity for extension of the outreach of mobile financial services, Bangladesh Bank is revisiting the existing guidelines, rules and regulations.

Other information relating MFS

12.11 Bangladesh Post Office (BPO) introduced the “Post e-Pay” service from 5 September 2011 which will gradually be launched in all branches (9886) of the post office in phases with the help of the mobile operators’ countrywide network. Clients have to register themselves with the post office to get the services.

As of 30 June, 2017, a total of 0.758 million agents are serving 53.7 million registered customers. And the number of agents and customers are growing. Under the umbrella of Mobile Financial Services (MFS), Inward remittances, Cash-in, Cash-out, P2P transactions, B2P transactions, P2B transactions, etc. are being provided.

National Payment Switch Bangladesh (NPSB)

12.12 In order to facilitate interbank electronic payments originating from different channels like Automated Teller Machines (ATM), Point of Sales (POS) and Internet, etc., Bangladesh Bank introduced National Payment Switch Bangladesh (NPSB) on December 27, 2012.

The main objective of NPSB is to act as a mother switch and to connect all child switches (owned and operated either by bank or a non bank entity) ultimately to create a common platform for the switches which settle the electronic payment in Bangladesh. At present, 53 banks are operating card based electronic payment process in Bangladesh. Among those, interbank ATM transactions of 51 banks and POS transactions of 48 banks are being routed through NPSB. Other banks are also likely to join NPSB soon. The number and volume of the interbank ATM and POS transactions through NPSB are growing rapidly. There are sharp rises in transactions in ATM and POS in last couple of months after accommodating branded chip cards’ transactions through NPSB. Considering the risks of card-based payments, banks have been advised to introduce chip and PIN, second factor authentication, in the system. Initiatives have been taken to make the internet banking and mobile financial services interoperable under the NPSB. Chart 12.6 and 12.7 show the trends of NPSB interbank ATM and POS transactions in terms of number and amount till 30 June, 2017.

Payment Systems Department (PSD) of Bangladesh Bank is working closely with all banks and stakeholders towards the achievement of digital payment systems as well as digital Bangladesh. NPSB is contributing in popularizing card-based electronic payment in Bangladesh. As a result, number of cards and various card-based payment terminals are growing very fast. Table 12.2 shows growth of card, ATM and POS in Bangladesh.

To ensure safe, efficient and digital payment system, PSD is also working on to formulate and publish national chip specification, NPSB operating manuals, ATM operating guidelines and other regulatory framework.

Real Time Gross Settlement (BD-RTGS) system

12.13 BD-RTGS system went into operation during October 2015 with a vehicle to settle large value time critical payment in the country.

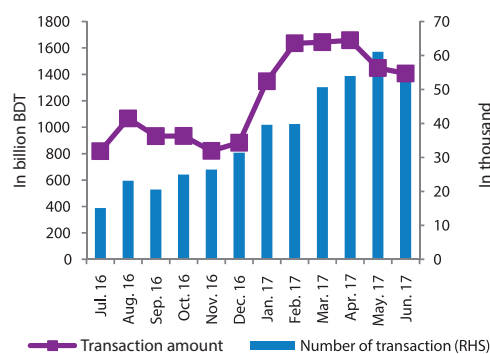
As an electronic payment and settlement system RTGS system is used to facilitate transfer of funds from one account of a bank to that of another bank on a real-time and on gross basis. Settlement in 'real time' means transaction is not subjected to any waiting period. 'Gross settlement' means the transaction is booked in central bank's account on one to one basis without netting with any other transaction. Transactions are settled as soon as they are executed. System is designed to settle high value (more than or equal to 1, 00,000 BDT) local currency transactions as well as domestic foreign currency transactions. It is worthwhile to mention that more than 7000 online branches of 55 scheduled banks are currently connected to this system out of existing 11000 bank branches of 57 banks in the country. The system is currently allowed to handle only local currency transactions and domestic foreign currency transactions are expected to be executed soon. This system also facilitates all other Deferred Net Settlement (DNS) system file to settle the net position in the CBS account. Government initiatives have been taken under ASYCUDA to collect the customs duties through RTGS system and to facilitate the customs clearance process. Trend of the transactions with RTGS in FY 2017 is shown in chart 12.8.

Table 12.2 Number of Card, ATM and POS in Bangladesh

Terminal	As on 30 April 2016	As on 30 April 2017	Growth (%)
Card	9,852.4	11,513.6	16.9
ATMs	8.3	9.2	10.2
POS	30.4	34.9	14.9

Source: Payment Systems Department, Bangladesh Bank.

Chart 12.8 Trends of RTGS transaction



Source: Payment Systems Department, Bangladesh Bank.

Payment Systems Operator (PSO) and Online Payment Gateway Service Providers (OPGSPs)

12.14 As a growing economy, e-commerce and online purchases are gradually getting popular and increasing in the country. Online Payment Gateway Service Providers (OPGSPs) play a crucial role for settling the payment leg of e-commerce and online purchases. Considering the market demand, Bangladesh Bank has permitted 05 (five) organizations to work as Payment Systems Operator (PSO) to facilitate the payment leg of the e-commerce and online purchases. Banks are now allowed to offer the facility of receiving remittances against small value service exports in non-physical form such as data entry/data process, off-shore IT service, business process outsourcing etc. The exporters of the above services will be able to receive their overseas payments through the OPGSPs.

Legal and Regulatory Frameworks

12.15 BB published a number of legal and regulatory documents to provide legal and regulatory support for electronic transfer of funds. Existing legal and regulatory frameworks of payment and settlement systems of Bangladesh are mentioned below:

- “Bangladesh Automated Cheque Processing Systems (BACPS) Operating Rules and Procedures” was published on 11 January, 2010.
- “Guidelines on Mobile Financial Services for the banks” was published on 22 September, 2011.
- “Guidelines on Agent Banking for the Banks” was published on 09 December, 2013.
- “Bangladesh Payment and Settlement Systems Regulations (BPSSR), 2014” was published on 15 May, 2014.
- “Bangladesh Electronic Funds Transfer Network (BEFTN) Operating Rules” was published on 15 May, 2014.

Other Payment Systems Initiatives

12.16 In order to fulfill the ever-growing demand for faster and efficient payment methods, the Payment Systems Department (PSD) of Bangladesh Bank has been working closely with the international organizations to develop a safe, secured and efficient payment infrastructure for the country following the international best practices. Bangladesh Bank has finalized the draft Payment and Settlement Systems Act 2017 which is now under process to be sent to the respective ministry for approval. In addition, PSD is working closely with the government organizations for introducing online VAT payment system. In this continuation, a

new initiative has been undertaken with IFC of World Bank Group.

Awareness Raising Campaign

12.17 Bangladesh Bank has been taking initiatives for raising awareness on the new electronic payment systems like automated cheque processing, electronic funds transfer, national payment switch, real time gross settlement and mobile financial services. BB has organized seminars and workshops for officials of all commercial banks, Government offices and industry alliances. Besides, BB has been working to popularize electronic funds transfer network among the stakeholders like Chamber of Commerce, Stock Exchanges, Bangladesh Security and Exchange Commission, Central Depository Bangladesh Limited, National Board of Revenue, etc. PSD has arranged several seminar, rally and road-show at different divisional cities as a part of awareness raising campaign.

12.18 Electronic payment and settlement systems has already proved its potential by offering fast, secure and cost-effective financial services. Specially, paper-less EFT transactions are gaining increased popularity among the corporate bodies, stock exchange members and industry alliances. The mobile financial services, m-commerce and e-commerce have significantly changed the financial services landscape of the country. NPSB will increase end-user centric electronic payments and broaden the landscape for financial transactions in the country. These electronic modes of payments have already improved operational efficiency, increased transaction frequency and brought stability and flexibility in all spheres of the financial market. Implementation of RTGS has taken the country's Payment and Settlement Systems to international standard.