

Payment and Settlement Systems

12.1 Financial transactions among the economic agents of a country requires an efficient payment mechanism and a safe and secure settlement system. An efficient payment and settlement system plays a vital role in economic development as it enables to execute transaction expeditiously and hence resulting in more economic activities in the country. Payment and settlement system also plays an important role in monetary policy implementation. Modern Payment Systems infrastructure enables the service delivery in the rural and remote areas which in-turn paves the path for financial inclusions and boost the economic development. As the electronic payment mechanism becomes prominent world-wide due to mobile phone and internet penetration, the importance of payment system also has been gaining attention day by day.

Functional Areas of Payment Systems

12.2 Considering the importance of payment and settlement systems for Bangladesh, Payment Systems Department (PSD) of Bangladesh Bank is working in three broad areas: Operation, Regulation and Oversight of the payment systems. Bangladesh Bank now operates four major national interbank payment systems; these are Bangladesh Automated Cheque Processing System (BACPS), Bangladesh

Electronic Funds Transfer Network (BEFTN), National Payment Switch Bangladesh (NPSB) and Bangladesh Real Time Gross Settlement (BD-RTGS) system. In parallel, it licenses and regulates services such as mobile financial services, e-money services and internet based payment gateway services for facilitating e-commerce transactions. All the activities of the department are focused to ensure that country's payment systems are safe and efficient and are aligned with the international best practice standards.

Bangladesh Automated Clearing House (BACH)

12.3 Established in 2010, Bangladesh Automated Clearing House operates two interbank payment systems - the Bangladesh Automated Cheque Processing System (BACPS) and the Bangladesh Electronic Funds Transfer Network (BEFTN). Both the systems operate in batch processing and Deferred Net Settlement (DNS) mode. The central BACH system receives transactions (through instruments or instructions) from the member banks in 24/7 basis, while these are processed and settled at a pre-fixed time. After each clearing cycle a single multilateral netting figure on each participating bank is settled by posting it to their respective books of account maintained with Bangladesh Bank. The system is based on a centralized

processing centre at Bangladesh Bank, head office Dhaka and a Disaster Recovery (DR) site at Mirpur.

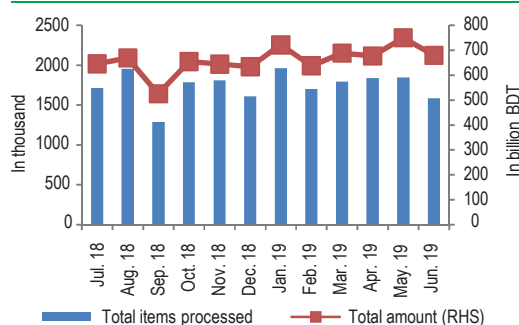
Bangladesh Automated Cheque Processing Systems (BACPS)

12.4 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. This electronic cheque presentment technique made possible to bring the whole country under single clearing umbrella. The clearing cycle has been brought down to t+1 for regular value cheques and t+0 for high value cheques. During the last fiscal year ended on June 30, 2019, 20.53 million regular value and 2.42 million high value cheques and other instruments were cleared valuing Taka 8287.33 billion and Taka 14686.43 billion respectively. Chart 12.1 and Chart 12.2 show the trends of amount of regular and high value cheques respectively in FY19.

Bangladesh Electronic Funds Transfer Network (BEFTN)

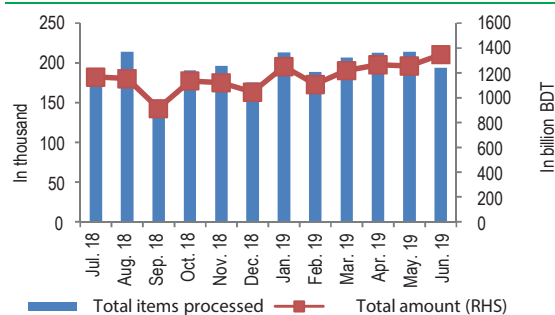
12.5 BEFTN started its Live Operation since February, 2011 with a view to establish a paper-less electronic payment method for secured & cost-effective transaction. BEFTN is a faster and efficient alternative to paper-based clearing and settlement system. A wide range of credit transfers, such as, salary payment, foreign and domestic remittances, social safety net

Chart 12.1 Number of Regular Value Cheque and Amount in FY19



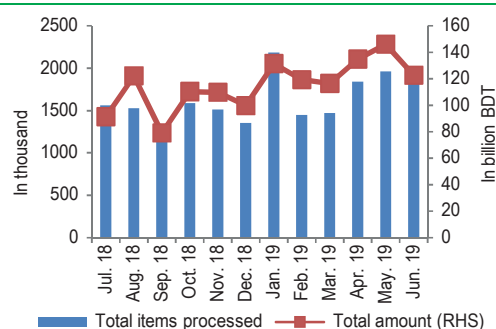
Source: Payment Systems Department, Bangladesh Bank.

Chart 12.2 Number of High Value Cheque and Amount in FY19



Source: Payment Systems Department, Bangladesh Bank.

Chart 12.3 Number of Credit Entries and Amounts in FY19



Source: Payment Systems Department, Bangladesh Bank.

payments, interest and principal payment of Sanchayapatra, company dividends, retirement benefits could be settled through EFT credits while utility bill payments, loan

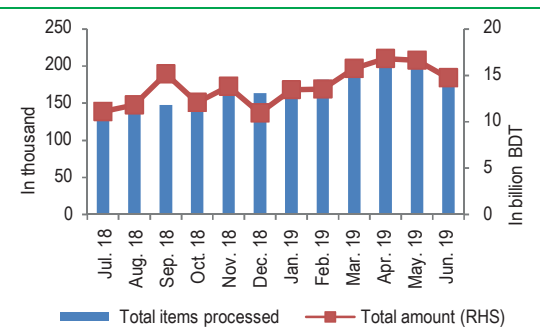
repayments, insurance premiums, corporate to corporate payments could be accommodated in EFT debits. Bangladesh Government is an early adopter of the EFT network, currently; salaries of most govt. officials are being paid through this system. During FY19, 27.22 million EFT credit transactions valuing Taka 1691.53 billion and a total of 2.92 million EFT debit transactions valuing Taka 187.56 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 FY19.

Mobile Financial Services (MFS)

12.6 The financial sector in Bangladesh is continuously growing in response to the evolving needs of the vibrant economy. Rapid expansion of mobile phone users, modernization of payments and financial system based on IT infrastructure, country-wide reach of mobile operators network have opened up the opportunities for spreading innovative cost efficient and prompt Mobile Financial Services (MFS) especially for the underserved, un-banked/under-banked and low income group of population.

As of June 30, 2019, total 15 banks and 1 subsidiary of bank have been permitted to provide MFS. Bangladesh Bank permits only bank-led MFS providers to operate in the

Chart 12.4 Number of Debit Entries and Amounts in FY19



Source: Payment Systems Department, Bangladesh Bank.

Table 12.1 MFS Transaction Limit

Particulars	Number of Transactions (Maximum)	Amount in BDT (Maximum)
Cash -in	Daily	5
	Monthly	25
Cash -out	Daily	5
	Monthly	20
Person to Person (P2P)	Daily	---
	Monthly	---

Source: Payment Systems Department, Bangladesh Bank.

Table 12.2 Present Scenario of MFS in Bangladesh

Months	No. Agent (in million)	No. of registered customers (in million)	No. of transaction (in million)	Transaction amount (in billion)
Jul. 18	0.84	64	192.46	308
Aug. 18	0.85	64.7	195.34	343.99
Sep. 18	0.86	66.7	205.96	301.65
Oct. 18	0.86	66.8	201.88	324.74
Nov. 18	0.87	67.1	196.13	315.27
Dec. 18	0.88	67.5	210.08	321.06
Jan. 19	0.89	67.2	214.61	346.26
Feb. 19	0.9	67.3	194.77	315.13
Mar. 19	0.91	67.5	209.07	346.78
Apr. 19	0.92	68.2	211.35	349.76
May. 19	0.93	70.4	231.37	422.36
Jun. 19	0.93	72	199.53	317.08

Source: Payment Systems Department, Bangladesh Bank.

country. The permitted Mobile Financial Services in broad categories are:

- 'Cash-in' to and 'Cash-out' from MFS accounts through agent locations, bank

branches, ATM, linked bank account and other methods determined by BB;

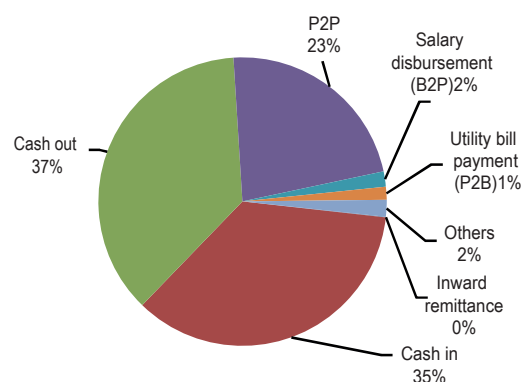
- Person to Business payments like utility bill payments, merchant payments, mobile top up, deposits into savings accounts/schemes with banks, loan repayments to banks/non-bank financial institutions (NBFIs)/non-governmental organizations-microfinance institutions (NGO-MFIs), insurance premium payments to insurance companies and so forth;
- Business to Person payments like salary disbursements, dividend/refund warrant/ discount payments etc.
- Person to Person payments (One MFS personal account to another MFS personal account with the same MFS provider or another MFS provider as well as the payments from one MFS account to a bank account and vice versa with the same parent bank or of another bank);
- Business to Business payments like vendor payments, supply chain management payments etc.
- Online and e-commerce payments;
- Government to Person payments such as pension payments, old age allowances, freedom-fighter allowances, subsidy payments to farmers and so forth;
- Person to Government payments such as tax, fee, levy payments, toll charge, fine etc.

Table 12.3 Number of Card, ATM and POS in Bangladesh

Terminal	As on June, 2018	As on June, 2019	Growth (%)
Card	1,37,34,605	1,72,39,902	25.5
ATMs	9,747	10,722	10.0
POS	41,130	52,846	28.5

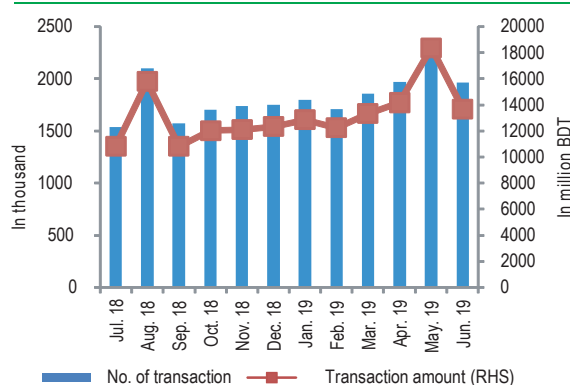
Source: Payment Systems Department, Bangladesh Bank.

Chart 12.5 Market Share of Different MFS in June 2019



Source: Payment Systems Department, Bangladesh Bank.

Chart 12.6 Trends in Interbank ATM Transactions in FY19



Source: Payment Systems Department, Bangladesh Bank.

- Disbursement of inward foreign remittances.
- Loan disbursements to borrowers, vendor payments etc.
- Other payments approved by the BB.

BOX 12.1 Bangladesh Towards a Cash less Society: Issues and Prospects

Bangladesh is predominantly a cash-based society, an overwhelming majority of the total retail payments are done in hard cash. In order to achieving the vision of *Digital Bangladesh*, Government is working relentlessly to digitize different services including banking and payments services. The Banking and payment systems modernization drive has been underway for more than a decade now. Major infrastructure established in this period includes Automated Cheque Clearing system, Electronic Funds Transfer Network, Card Payment Switch and Real Time Gross Settlement System. Side-by-side to achieve financial inclusion, the bank-led Mobile Financial Services (MFS) was introduced. MFS alone has been able to attract more than 72 million populations under the formal financial services network while most of these people were outside the formal financial services earlier.

As a result of these efforts, the use of electronic payments has increased while the user base also broadened. However, Infrastructure alone can't achieve the objective of a *less cash society*, there are other issues to be addressed like geographical divide, adaptability, incentives, awareness, gender inequality etc. These challenges, now, needed to be addressed and in a planned and comprehensive manner.

Though most FIs have similar kind of electronic payments infrastructures, their level of engagement to spread these services throughout their consumer base varies considerably. Some of these institutions are not coping with the pace of advancement that have achieved so far in relation to digitizing the payment ecosystem as well as convincing consumers to use the same. Now, the focus is shifted to influence the FIs to leverage most from these latest infrastructures and be able to harness the capability of ICT in making better alignment with their customers.

Although all forms of digital payments have been increasing in Bangladesh, the mobile financial services industry in particular is notable for its rapid expansion. Government-to-Person (G2P) digital payments have also grown significantly, and further digitization of G2P payments are in progress. Currently, about 69% of the value of the payments made by governments are digital.

The Vision 2021, implementation of a Digital Bangladesh is one the priority agenda of the current government. Thus, the government has given immense importance on the adoption of digital technologies throughout every service in the country. Different government ministries and offices including Banking Sector have undertaken a number of projects involving digital technologies, among which, New Digital Payments initiatives are on the top priorities. As implemented these systems will further broaden the depth and breadth of digital payments in Bangladesh and contribute towards establishing a less cash society.

Development of Mobile Financial Services (MFS)

12.7 With a view to provide an orderly, enabling and competitive environment for optimal utilization of the new windows of opportunity created by extension of the traditional financial services, Bangladesh Bank revisited the Guidelines on Mobile Financial Services for the Banks and issued

Bangladesh Mobile Financial Services (MFS) Regulations 2018 on 30 July, 2018. On the basis of increasing demand of MFS market and to maintain the market equilibrium, Bangladesh Bank has increased the MFS transaction limit on 19 May, 2019 (Table 12.1).

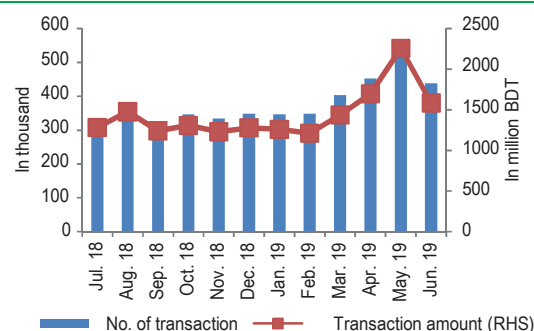
As of June 30, 2019, a total of 0.93 million agents are serving 72.0 million registered

customers. Total number of agents, customers, number and value of transactions are still growing, which is a clear indication of MFS increasing usage in the country (Table 12.2). Chart 12.5 describes the position of market share of different types of Mobile Financial Services in June 2019.

National Payment Switch Bangladesh (NPSB)

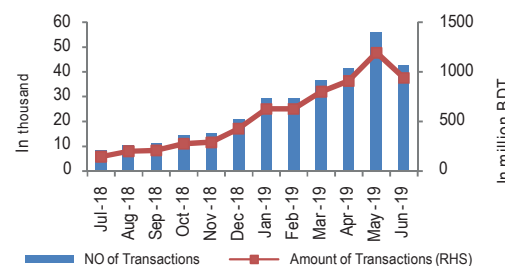
12.8 In order to facilitate interbank electronic payments originating from different channels like Automated Teller Machines (ATM), Point of Sales (POS), and Internet etc. Bangladesh Bank introduced National Payment Switch Bangladesh (NPSB) on December 27, 2012. The main objective of NPSB is to act as a mother switch and to connect all child switches owned or shared (owned and operated either by bank or a non bank entity) gradually, to create a common electronic platform for the switches in Bangladesh. At present, 53 banks are operating card business in Bangladesh. Among those, interbank ATM transactions of 51 banks and POS transactions of 50 banks are being routed through NPSB. Moreover, Internet Banking Fund Transfer (IBFT) has started in November, 2017. Now NPSB is processing IBFT transactions of 19 banks. In addition, other banks are also likely to join IBFT transactions through NPSB soon. The number and volume of the interbank ATM POS transactions and Internet Banking

Chart 12.7 Trends in Interbank POS Transactions in FY19



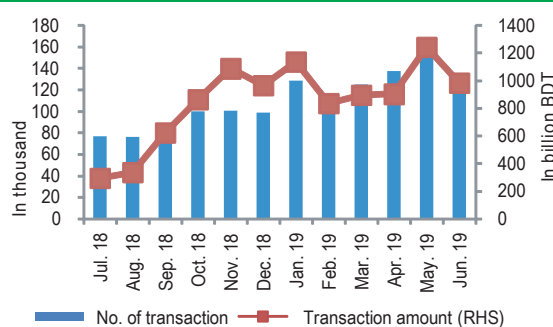
Source: Payment Systems Department, Bangladesh Bank.

Chart 12.8 Trends in IBFT Transactions in FY19



Source: Payment Systems Department, Bangladesh Bank.

Chart 12.9 Trends in RTGS Transactions in FY19



Source: Payment Systems Department, Bangladesh Bank.

through NPSB are growing fast. Chart 12.6, 12.7 and 12.8 show the trends of NPSB interbank ATM, POS and IBFT number of transaction and associated amount till 30 June, 2019 respectively. Payment Systems Department (PSD) of Bangladesh Bank is

working closely with all banks and stakeholders towards digitizing payments towards achieving a digital Bangladesh. NPSB is contributing to popularize card based electronic payment in Bangladesh. As a result, no. of cards and several card based payment terminals are growing very fast. Table 12.3 shows growth of card, ATM and POS in Bangladesh.

Real Time Gross Settlement (BD-RTGS) System

12.9 The BD-RTGS system was implemented in 2015 with the assistance of Asian Development Bank and the World Bank. The central RTGS system was developed by a Swedish company.

BD-RTGS opened a new horizon in the payment ecosystem accommodating instant settlement of large value and time critical payments in the country. The system is designed to settle high value (BDT 1,00,000) local currency transactions as well as domestic foreign currency transactions. More than 9,583 online branches of 56 scheduled banks are now connected to this system out of existing 10,396 (June 2019) branches of 59 schedule banks. The system is currently handling only local currency transactions. Trend of the transactions with RTGS in FY 2019 is shown in chart 12.9.

Payment Systems Operator (PSO) and Payment Service Providers (PSPs)

12.10 With a view to promote digital payments in the country, Bangladesh Bank

has been issuing license to non-bank organizations as Payment System Operator (PSO) and Payment Service Provider (PSP). PSOs are mostly engaged in a role of payment processor, merchant aggregator and providing payment switching solution. These licensed PSOs facilitate e-commerce and inter-bank card based transactions. At present, five non-bank institutions have been providing PSO services. On the other hand, PSP provides e-money service through e-wallet. Customers or merchant can open e-wallets with these PSPs and use the account balance for online & in-store merchant payment, bill payment, person to person (P2P) transfer and other transactions. Bangladesh Bank has issued PSP license for two non-bank institution for providing e-wallet services.

Legal and Regulatory Framework

12.11 To support the electronic transaction in the country, a number of legal and regulatory guidelines have been published and some are underway of publication from BB. Existing legal and regulatory framework of payment and settlement systems of Bangladesh are mentioned below:

- Bangladesh Automated Cheque Processing Systems (BACPS) Operating Rules and Procedures" was published on January 11, 2010.
- Bangladesh Electronic Funds Transfer Network (BEFTN) Operating Rules" was published on August 10, 2010.

- An updated version of "Guidelines on Mobile Financial Services for the banks" was published on 30 July, 2018.
- Bangladesh Payment and Settlement Systems Regulations (BPSSR), 2014" was published on May 15, 2014.
- Bangladesh Real Time Gross Settlement (BD-RTGS) System Rules" published during September 2015.

In order to fulfil the ever-growing demand for faster and efficient payment methods, Payment Systems Department (PSD) has been working closely with the international organizations to develop safe, secure and efficient national payments infrastructure conforming to the international best practices. Initiatives have been taken to enact Payment and Settlement Systems Act. In addition, PSD is working closely with the government for automating their various kinds of payments and receipts including payroll, social security payments and for receipt of VAT, Tax, Customs duty etc.

Payment System Oversight

12.12 Payment systems oversight is a specialized form of supervision of Payment, Clearing and Settlement Systems undertaken by Central Banks around the globe. It is treated as one of the key functions of Bangladesh Bank (BB) to achieve the objectives of safety and efficiency of payment systems by monitoring and assessing existing and

planned payment systems and inducing changes as and where necessary. Payment Systems Department formally started oversight functions from 2016. To strengthen and streamline oversight activities BB worked closely with regulatory and oversight experts of World Bank and come up with "Payment Systems Oversight Policy Framework-2019" which has been approved and made enforceable from January 2019. This Policy Framework will help to ensure effective oversight of payment systems, instruments, procedures and all the related parties licensed by BB. It explains why and how Bangladesh Bank will oversee its payment and settlement systems and also recognizes the fields of BB's oversight responsibilities.

As per the Payment Systems Oversight Policy Framework, Bangladesh Bank monitors payment systems and participants by collecting template-based off-site information on a regular basis. It also takes into account the findings of other departments regarding payment systems issues and the information collected through market intelligence. In parallel BB performs onsite inspection for validation of collected information as well.

Oversight is also engaged in reviewing legal and regulatory framework of payment systems, setting standards, ensuring fair access, protecting consumer rights etc. Oversight will assess payment systems, processes, participants, providers and instruments using appropriate national

standards as well as international best practices. As a part of oversight, self-assessment of payment platforms as well as Non Bank PSP/PSOs have been started. Assessment is done based on the collected data where various analytical tools are being used, identify potential risk and

reports are prepared thereby. Suggestions and recommendations are put forward where it deems necessary. Besides, Oversight publishes 'Payment Systems Indicators: Quarterly Update' on regular basis which may be treated as a significant input of maintaining sustainable financial stability.