

Payment and Settlement Systems

12.1 An efficient payment system plays an important role in monetary transmission in the country's economy. A robust payment and settlement system ensures smooth flow of money and contributes to the economic growth. The infrastructure of modern payment systems is capable of delivering services in rural and remote areas which facilitates the path of financial inclusion and economic development.

Scope of Payment Systems

12.2 Considering the importance of payment and settlement system in Bangladesh, the Payment Systems Department (PSD) of Bangladesh Bank operates in three broad areas, namely Operations, Policy & Regulation and Oversight. At present, Bangladesh Bank operates four major inter-bank payment systems. Three of these systems are for Retail Value namely Bangladesh Automated Cheque Processing System (BACPS), Bangladesh Electronic Funds Transfer Network (BEFTN), National Payment Switch Bangladesh (NPSB) and one for High Value i.e. Bangladesh Real Time Gross Settlement (BD-RTGS) System. On the other hand, the department provides licenses to operate as mobile financial services, e-money services, and Internet-based payment gateway services. In last decade, FinTech or digital financial service innovations have become transformative force in the financial markets. FinTech brings efficiency improvements, risk reduction and greater financial inclusion with a challenge of monitoring and mitigating new risks arising from the technology. Realizing the above factors, to unleash the opportunity of new innovation BB has launched a regulatory

innovation office in last December. In parallel, Bangladesh Bank regulates and oversees country's payment systems and services. All the activities of this 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 inter-bank payment wings - 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 account maintained with Bangladesh Bank. The system is based on a centralized processing centre at Bangladesh Bank, Head Office, Dhaka and a Near Data Centre (NDC) 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 and 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.

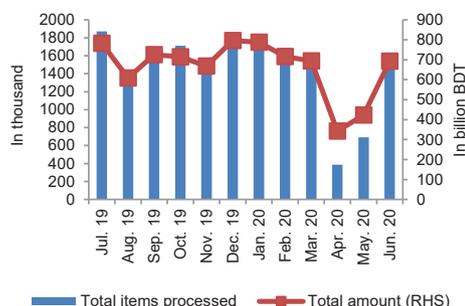
BACPS Transaction Status

12.5 During the last fiscal year ended on 30 June 2020, some 17.61 million regular value and 2.08 million high value cheques and other instruments were cleared valuing BDT 7,951.37 billion and BDT 13,391.51 billion respectively. Chart 12.1 and Chart 12.2 show the trends of instruments and amount cleared in respect of regular and high value cheques respectively in FY20.

Bangladesh Electronic Funds Transfer Network (BEFTN)

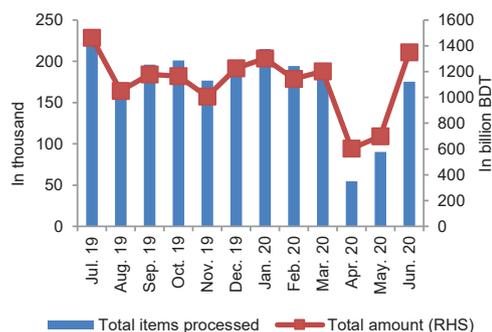
12.6 BEFTN started its Live Operation since February, 2011 with a view to establish a paper-less electronic payment method for secured & cost-effective transaction. BEFTN is a faster and efficient alternative to paper-based clearing and settlement system. Recently, the upgraded version of Bangladesh Automated Clearing House (BACH) has launched which facilitates clearing and settlement of electronic fund transfer twice a day. A wide range of credit transfers such as salary payment, foreign and domestic remittances, social safety net 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, in each month around 2-2.5 million government payments are made through EFT network for salaries

Chart 12.1 Number of Regular Value Cheque and Amount in FY20



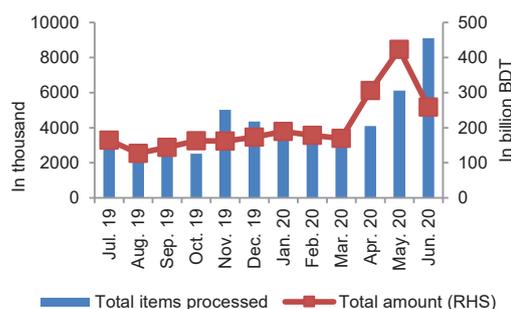
Source: PSD, BB.

Chart 12.2 Number of High Value Cheque and Amount in FY20



Source: PSD, BB.

Chart 12.3 Number of Credit Entries and Amount in FY20



Source: PSD, BB.

of government officials, social safety net payments like; old age allowance, allowances for the widow, destitute and deserted women, allowances for the financially insolvent disabled.

Transaction Status of BEFTN

12.7 During FY20, some 50.44 million EFT credit transactions valuing BDT 2458.54 billion and a total of 3.73 million EFT debit transactions valuing BDT 229.60 billion have been completed through BEFTN. During this period, 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 FY20.

Mobile Financial Services (MFS)

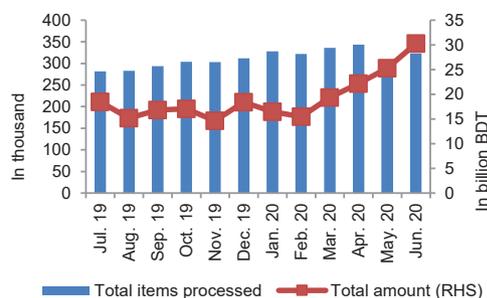
12.8 The financial sector in Bangladesh is continuously growing in response to the evolving needs of the vibrant economy. Rapid expansion of mobile phone users, modernization of payments and financial system based on IT infrastructure, country-wide reach of mobile operators network, availability of internet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

As of June 30, 2020 total 14 banks and 1 subsidiary of bank have been permitted to provide MFS. Bangladesh Bank permits only bank-led MFS providers to operate in the country.

The permitted Mobile Financial Services in broad categories are:

- i. 'Cash-in' to and 'Cash-out' from MFS accounts through agent locations, bank branches, ATM, linked bank account and other methods determined by BB;
- ii. Person to Business payments like utility bill payments, merchant payments, mobile

Chart 12.4 Number of Debit Entries and Amount in FY20



Source: PSD, BB.

Table 12.1 MFS Transaction Limit

Particulars		No. of registered customers (in million)	Transaction amount (in billion BDT)
Cash-in	Daily	5	30,000/-
	Monthly	25	2,00,000/-
Cash-out	Daily	5	25,000/-
	Monthly	20	1,50,000/-
Person to	Daily	--	25,000/-
Person (P2P)	Monthly	--	2,00,000/-

Source: PSD, BB.

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 BDT)
Jul. 19	0.94	73.10	227.41	374.77
Aug. 19	0.95	73.60	204.22	355.13
Sep. 19	0.95	75.98	212.37	354.33
Oct. 19	0.95	77.39	227.25	377.63
Nov. 19	0.97	78.59	230.42	379.19
Dec. 19	0.97	79.65	227.42	406.48
Jan. 20	0.98	80.92	230.09	421.03
Feb. 20	0.99	81.86	226.11	413.35
Mar. 20	0.99	82.58	235.86	397.85
Apr. 20	1.00	84.98	217.56	290.29
May. 20	1.00	87.94	281.78	476.01
Jun. 20	1.00	88.70	256.10	448.30

Source: PSD, BB.

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;

- iii. Business to Person payments like salary disbursements, dividend/refund warrant/ discount payments, etc.
- iv. 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);
- v. Business to Business payments like vendor payments, supply chain management payments, etc;
- vi. Online and e-commerce payments;
- vii. Government to Person payments such as pension payments, old age allowances, freedom-fighter allowances, subsidy payments to farmers and so forth;
- viii. Person to Government payments such as tax, fee, levy payments, toll charge, fine, etc;
- ix. Disbursement of BDT against inward foreign remittances collected by banks;
- x. Loan disbursements to borrowers, vendor payments, etc; and
- xi. Other payments approved by BB. Table 12.2 shows the present scenerio of MFS in Bangladesh and Chart 12.5 shows the market share of different MFS in June 2020.

Special Usage of Mobile Financial Services (MFS) during COVID-19 Pandemic

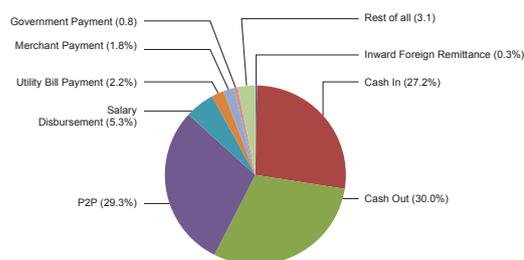
12.9 Bangladesh along with the whole

Table 12.3 Number of Card, ATM and POS in Bangladesh

Terminal	As on June, 2019	As on June, 2020	Growth (%)
Card	17239902	21905710	27.06
ATMs	10722	11047	3.03
POS	52846	65946	24.79

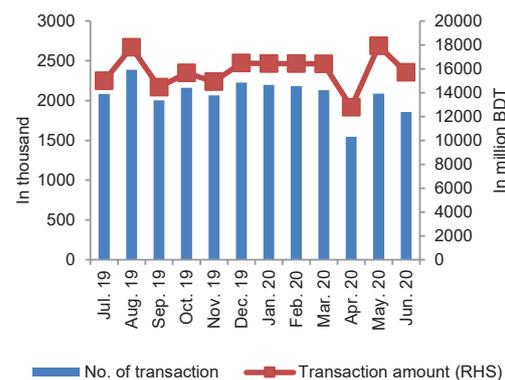
Source: PSD, BB.

Chart 12.5 Market Share of Different Services in MFS in June 2020



Source: PSD, BB.

Chart 12.6 Trends in Interbank ATM Transactions in FY20



Source: PSD, BB.

world has experienced an unprecedented outbreak of COVID-19 where the central bank has to come up with new business model to keep the payment ecosystem active to meet the new requirements of people. In case of Bangladesh, MFS has become a tool of trade to achieve many of the goals and to keep

BOX 12.1 Prospects of Digital Banking in Bangladesh

Usage of technology in every sphere of life is in the core of 4th Industrial Revolution (4IR). The financial sector is at the forefront of 4IR globally and Bangladesh is not an exception of that. Technological Innovations in financial services popularly known as Fintech brings disruptions to the conventional banking system. However, the wide acceptance of technology by this millennium generation forced financial market to revisit and adjust the way of doing business by adopting technology. Two aspects of such digital revolution in banking business are: (i) Digitization and (ii) Digitalization. Banking digitizing means converting currently manual or paper-based documentation into digital format and changing the business rules/procedures to accommodate those. Whereas digitalizing of banking is a whole new way of doing business. Digitalization of Banking or Digital Banking is the application of technology to ensure seamless end-to-end electronic processing of banking operations/ transactions. Digital Banking is also known as Electronic Banking, Cyber Banking, or Virtual Banking which can be conducted from anywhere. Usually it works in state through processing manner, initiated by the client, ensuring maximum utility to the client in terms of availability, usefulness and cost. For bank, it reduces operating costs, minimizes errors and enhances services i.e overall provides a better user experience as a whole. Financial technologies e.g. Internet of Things, Blockchain Technology, Augmented reality (AR), virtual reality (VR), Open APIs, Big Data , Machine Learning, Robo advice, Smart contracts and Cloud computing, etc. could be used separately or all together to bring numerous benefits to the financial system as well as to consumers.

This new business model of Digital Banking is getting very popular throughout the world especially at the retail level. Traditional banks understand the growing customer demand for digital access and convenience and aware of the emergence of new competition within and outside the banking industry. Banks also recognize adoption of various existing and emerging technologies will optimize their workflow and lower operational costs. On the other hand, the Fintech companies successfully address the gaps left by traditional financial institutions along with new product development and innovating existing products and services. The agility to adopt the latest technologies, combined with best practices from other industries has enabled Fintechs to develop these competitive advantages. From the experience of other countries it has been found that, collaboration between traditional banks and Fintech firms often resulted in the best form of digital bank. Countries like Australia, Brazil, Singapore, Hong Kong, Malaysia, UAE, KSA have already successfully implemented Digital Banking to meet the ever growing client demand. The prospect of such banking services in Bangladesh has already been partially demonstrated by the Mobile Financial Services providers in the country like Rocket, bKash and others.

But it is important to remember that every benefit has some inherent risk. High proliferation of Digital Banking also fight with certain associated risk e.g. Security Risks, Breach of Privacy, Disparity in Services, Cybercrime, Systemic risks, etc. So, for the particular targeted client segment of Digital Banking who wants to experience the benefits of improved consumer experience, benefits of reduced costs, and to have greater transparency in all services also need to develop a richer insight into own financial well-being along with actionable advice on steps. Regulators also need to take appropriate stance to strike the balance between innovations customer protection and monetary policy transmission.

Banks in Bangladesh have already realized the importance and opportunities of Digital Banking in the country and are experimenting different models like creating partnership with MFS to offer banking services or creating subsidiaries with Fintech firms for offering digital banking services. However, necessary policy to unleash the opportunity created by Digital Banking is to be adopted by the regulators to materialize the concept of Digital Banking. Therefore, Digitalization of Banking industry is no longer an option, it's a simple bare necessity – the collaboration of banking and Fintech will be the key to flourish.

financial activities uninterrupted. MFS played a crucial role in distributing various government payments in different forms among low-paid and jobless people. Moreover, BB has taken policy initiatives to adjust limit and charges to ensure the maximum benefit for the population at distress.

- i. The Government has provided subsidies to the export oriented industries in form of soft loans to pay the workers' salaries which will have to be distributed only through the workers' bank account or mobile wallets. Under such circumstances, the MFS providers have been instructed to open new MFS wallets for the workers of export oriented industries and 2.2 million new mobile wallets have been opened after the instructions were issued. Moreover, the providers have been instructed to keep the agent points open, active and with sufficient cash to serve the worker's needs. Also, the cash-out charge of salaries have been reduced to 0.8 percent from 1.85 percent.
- ii. The Government has provided cash assistance to 50 lakh families who lost their livelihood due to COVID-19 pandemic through mobile wallets and four (04) major MFS providers have been used as the distribution channel to reach the beneficiary.
- iii. The Electronic Know Your Customer (e-KYC) procedure has been adopted by the MFS market.
- iv. Initiatives have been taken to introduce 'Personal Retail Account' for the micro-merchants.
- v. 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. Person to Person (P2P) transaction limit of MFS has been enhanced from BDT 75,000 to BDT 200,000 for the purpose of customers' convenience during COVID-19 pandemic (Table 12.1).

Summary of MFS Data

12.10 As of June 30, 2020, a total of 1.00 million agents have been serving 88.70 million registered customers. Total number of agents, customers, number and value of transactions are still growing, which is a clear indication of increasing usage of MFS in the country. MFS market is not only growing in number of accountholders and agents, but last year significant change also has been observed in products and customers behavior. Link between banks and MFS providers' makes users' life easy to do banking transaction, paying utility bill and various fees staying at home. Even after that, cash in and cash out consists more than 50 percent of the market-which is a clear indication of the scope of flourishing both for new services and for providers.

National Payment Switch Bangladesh (NPSB)

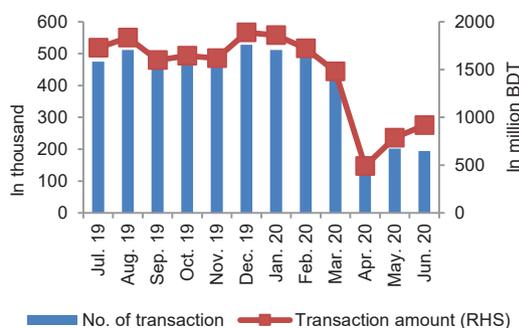
12.11 In order to facilitate interbank electronic payments originating from different channels like Automated Teller Machines (ATM), Point of Sales (POS), internet, etc. Bangladesh Bank introduced National Payment Switch Bangladesh (NPSB) on December 27, 2012. The main objective of NPSB was to act as

a mother switch and to connect all child switches in the country. At present, 54 banks are operating card business in Bangladesh. Among them, interbank ATM transactions of 53 banks and POS transactions of 52 banks are being routed through NPSB. Internet Banking Fund Transfer (IBFT) through NPSB was started in November, 2017. Currently, NPSB is processing IBFT transactions originate from 25 banks. In addition, other banks are also likely to join IBFT transactions through NPSB soon. The number and volume of the interbank ATM, POS and Internet Banking Fund Transfer transactions through NPSB are growing fast. Chart 12.6, 12.7 and 12.8 show the trends of NPSB interbank ATM, POS and IBFT transaction number and associated amount till 30 June, 2020. Payment Systems Department (PSD) of Bangladesh Bank is working closely with all banks and stakeholders to develop a modern payment eco-system in the country. NPSB is contributing to popularize card based electronic payment in Bangladesh. As a result, number of cards and several card based payment terminals are growing very fast. Table 12.3 shows the growth of card, ATM and POS in Bangladesh.

Real Time Gross Settlement (BD-RTGS) System

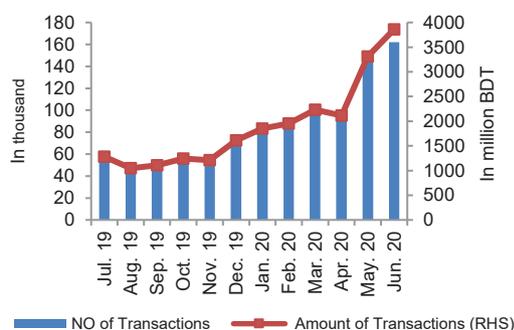
12.12 With its introduction in 2015, BD-RTGS opened a new horizon in the payment ecosystem accommodating instant settlement of large value and time critical payments in the country. The system is designed to settle high value (BDT 1,00,000 ≥) local currency transactions as well as domestic foreign currency transactions. More than 9,915 branches of 56 scheduled banks are now connected to this system out

Chart 12.7 Trends in Interbank POS Transactions in FY20



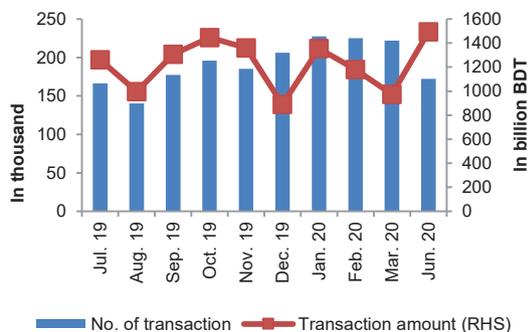
Source: PSD, BB.

Chart 12.8 Trends in IBFT Transactions in FY20



Source: PSD, BB.

Chart 12.9 Trends in RTGS Transactions in FY20



Note: System was closed in April & May, 2020 due to general holidays in COVID-19 situation.

Source: PSD, BB.

of existing 10,500 branches of 59 schedule banks. The system is currently handling only local currency transactions. In FY20, the total number of transactions was 1.92 million and the total amount of transactions was 12,220 billion. However, during general holidays due to COVID-19 pandemic RTGS system was not in operation in the month of April and May, 2020. Trend of RTGS transactions in FY20 is shown in chart 12.9.

Alternate Delivery Channel and Licensing

12.13 With a view to promote, regulate and ensure a secure, efficient and cashless electronic payment system in the country, Bangladesh Bank issues license to FinTech entities in two broad categories; these are: Payment System Operator (PSO) and Payment Service Provider (PSP). Currently, there are four PSOs and three PSPs operational in the country while dozens others are in different phase of licensing process.

12.14 In broad categorization, PSPs provide e-wallet services while PSOs provide merchant aggregation, payment gateway and switching solution services. Recently, Bangladesh Bank has published guidelines for interested entities to provide white label ATM and Merchant Acquiring Services. These new companies will fall under PSO category and is expected to increase ATM and POS penetration throughout the country especially in the rural Bangladesh.

Legal and Regulatory Framework

12.15 Bangladesh Bank has already published a number of legal and regulatory guidelines supporting the electronic transactions within the country. The existing legal and regulatory

frameworks of the payment and settlement system of Bangladesh are as followed:

- “Bangladesh Automated Cheque Processing Systems (BACPS) Operating Rules and Procedures” was published on January 11, 2010 and its’ revised edition named “BACPS Operating Rules and Procedures V 2.0” was published on December 05, 2019.
- “Bangladesh Electronic Funds Transfer Network (BEFTN) Operating Rules” was published on August 10, 2010.
- “Guidelines on Mobile Financial Services for the banks” was published on September 22, 2011 and its’ revised edition was published on July 30, 2018.
- “Bangladesh Payment and Settlement Systems Regulations (BPSSR), 2014” was published on May 15, 2014.
- “Bangladesh Real Time Gross Settlement (BD-RTGS) System Rules” was published on September 09, 2015.

12.16 Besides, in order to meet the ever-increasing demand for faster and efficient payment methods, Payment Systems Department (PSD) has been working closely with several international organizations to develop safe, secured and efficient national payments infrastructure adhering to the international best practices. Necessary steps have been taken to enact the “Payment and Settlement Systems Act”. Furthermore, for ensuring the automation of government’s various payment and collection procedures such as paying salaries and different types of allowances, social safety allowance and collecting VAT, Tax, Duties etc., PSD is also working closely with the government.

Payment System Oversight

12.17 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 policy changes as and where necessary.

12.18 Payment Systems Department formally started oversight functions from the year 2016. To strengthen and streamline oversight activities BB worked closely with regulatory and oversight experts of the 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 the BB. It explains why and how Bangladesh Bank oversees its payment and settlement systems and also recognizes the fields of BB’s oversight responsibilities.

12.19 As per the Payment Systems Oversight Policy Framework, Bangladesh Bank monitor 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.

12.20 Oversight is also engaged in reviewing legal and regulatory framework of payment

systems, setting standards, ensuing 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. And suggestion 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.

Other Payment Systems Initiatives

12.21 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 payment infrastructure conforming to international best practices. Bangladesh Bank has finalized the draft ‘National Payment and Settlement Systems Act’ which is now under final review considering comments of different stakeholders. In addition, PSD is working closely with the government for automating their various kinds of payments and receipts including payroll, social safety net payments, receipt of VAT, Tax, Customs duty, etc.

Regulatory Fintech Facilitation Office (RFFO)

12.22 Technological innovation and its successful implementation have created a new horizon in digital financial service. Digital

financial innovation is playing a significant role to build digital financial infrastructure by creating new business model, providing financial inclusion through new type of financial services. To materialize the benefit, it is immensely important to make co-ordination between innovation, risk and policy regulations. It is mandatory to consider and analyze the granular aspects of these innovative fintechs who are fostering financial sector and innovating new ideas, so that people can avail highest benefit from these fast approaching fintechs within proper legal framework.

12.23 Considering the above, Bangladesh Bank established Regulatory Innovation Office for Fintech in October, 2019 to ease the entry process of these Fintechs in financial sector by providing required regulatory assistance to set up proper infrastructure and bring them within specific jurisdiction. This office is later renamed

as Regulatory Fintech Facilitation Office (RFFO).

12.24 This office will analyse, whether the proposed innovative idea of any Fintech is required for the country, whether it is contradictory with any existing policies or services in the country and whether these new ideas are within the legal periphery of the country. Besides these activities, this office will also analyze the permanence of any innovation idea by applying it within a limited scale and in a controlled scope.

12.25 Regulatory Fintech Facilitation Office will extend their range of operations not only by providing regulatory assistance to the new incumbents but also make harmonization among banks and other regulatory organizations to improve customer experience and applied excellence.