

Chapter 7: Financial Market Infrastructures

Although the pandemic triggered some operational constraints, the performance and resilience of Financial Market Infrastructures (FMIs) remained intact during CY20. Pakistan Real Time Interbank Settlement Mechanism (PRISM)—with uninterrupted availability—handled an increased volume of transactions, though, the value of transactions declined. The customer’s increased preference for digitization in the wake of the pandemic and policy measures of SBP gave a strong impetus to E-banking transactions. To realize the objective of a modern and efficient national payment system, SBP launched ‘Raast’—an instant payment system for retail transactions—as a major step towards implementation of National Payment Systems Strategy. The implementation of the strategy is expected to contribute towards achieving the objectives of increasing digitization, convenient and affordable payments, and financial inclusion in the country.

Financial Market Infrastructure (FMI)^{195 196} has a crucial role in maintaining financial stability and the steady functioning of the economy. Its smooth functioning supports the efficiency in the flow of payments, effectiveness of financial intermediation process, and economic growth.

The FMI assists the market participants such as firms, individuals, financial institutions and government in carrying out their payment transactions efficiently. The national FMI¹⁹⁷ of Pakistan comprises (i) large value payment system (LVPS) i.e. Pakistan Real-Time Interbank Settlement Mechanism (PRISM), (ii) Retail Value Payment System (RVPS), (iii) an inter-bank switch (1-Link), (iv) a clearing house of paper-based instruments (National Institutional Facilitation Technologies (NIFT)), (v) a corporate securities settlement company (National Clearing Company of Pakistan Limited (NCCPL)), and (vi) a corporate securities depository i.e. Central Depository Company (CDC).

7.1 Payment Systems and their performance

The sound and efficient functioning of the national payment and settlement systems that fall under its regulatory ambit is a primary objective of SBP. The Payment Systems and Electronic Funds Transfer (PSEFT)¹⁹⁸ Act, 2007 empowers SBP to regulate, operate and facilitate the national payment systems of the country.¹⁹⁹ SBP is playing its role in both the development and oversight of national payment system, and providing facilitation to the market with the objective of an efficient, inclusive and secure national payment system.

Reduced economic activity in the wake of the pandemic overshadowed the performance of Payment System ...

The performance of payment systems moderated during CY20 in comparison to previous years, as the country remained mired with reduced economic activity (specifically in H1CY20) due to the adverse shock of the pandemic. Even so, PRISM showed consistent growth in terms of volume of transactions. In retail segment, paper based transactions are on the decline for some time, while growth in e-banking transactions are on the rise. During CY20, as SBP took measures

¹⁹⁵ An FMI is defined as a multilateral system among participating institutions, including the operator of the system, used for the purposes of clearing, settling, or recording payments, securities, derivatives, or other financial transactions. [Principles for Financial Market Infrastructures (2012)] by Committee on Payment and Settlement Systems of BIS].

¹⁹⁶ FMI is broadly divided into Payment Systems, Central Securities Depositories (CSD), Securities Settlement Systems (SSS), Central Counter Parties (CCPs) and trade repositories.

¹⁹⁷ For comprehensive functional overview of Pakistan’s FMI, please see Box 5.1, FSR 2016.

¹⁹⁸ This act provides the framework for regulation of national payment systems and electronic funds transfers.

¹⁹⁹ The national payment system is broadly divided into LVPS and RVPS. The LVPS (i.e. PRISM) is a central platform for settlement of large value interbank fund transfers, government securities, retail clearing and customer transfers (over a certain lower limit), while RVPS is comprised of the various paper-based and electronic channels used for retail transactions.

to encourage digital payments, growing preference for electronic payment channels was further bolstered as customers actively avoided cash and paper based transactions to avoid the health hazards of the pandemic (**Table 7.1**).

Table 7.1: Profile of Payment System Mechanisms

Mechanism	CY17	CY18	CY19	CY20	Growth
	(Volume in millions and Value in PKR trillion)				(Percent)
a. PRISM					
Volume	1.4	2.2	2.4	3.4	39.24
Value	336.9	375.1	410.6	373.4	-9.06
b. Retail Payments (i+ii)					
Volume	1161.7	1281.6	1381.6	1382.7	0.08
Value	192.6	198.7	207.3	209.3	0.96
i. Paper based					
Volume	463.6	464.8	467.5	389.6	-16.65
Value	152.0	145.0	142.3	136.0	-4.43
ii. E-Banking					
Volume	698.1	816.8	914.2	993.0	8.63
Value	40.6	53.7	65.0	73.3	12.83

Source: SBP

PRISM efficiently handled higher volume ...

PRISM handled higher volume of transactions; however, the total value of transactions declined from last year. The daily average volume of settled transactions rose to about 13,200 (2019: 9,500), while daily average value slightly declined to PKR 1,450 billion (2019: PKR 1,600 billion). In aggregate, 64.08 percent of total value of all transactions was settled through PRISM.

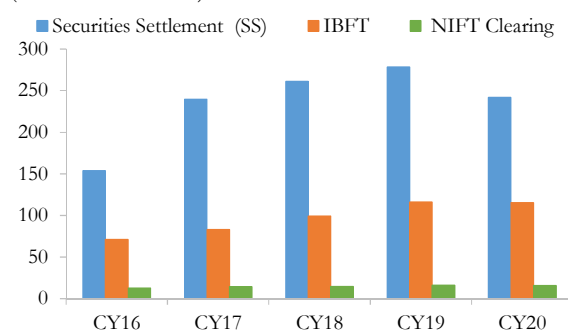
The decline in transacted value was attributed to the decrease in total value of securities settlement transactions (**Chart 7.1a**). The growth in volume primarily stemmed from the significant increase in volume of Inter-bank Funds Transfers (**IFT**) transactions²⁰⁰. IFT transactions - with 41.35 percent increase - contributed the highest share in total volume of PRISM transactions during CY20 (**Chart 7.1b**).

²⁰⁰ IFT transactions include bank-to-bank transfers and third party customer transfers. Third party fund transfers are processed via PRISM by direct participants on instructions of their customers/accountholders.

²⁰¹ PSD Circular No. 02 of 2020
<https://www.sbp.org.pk/psd/2020/C2.htm>

Chart 7.1a: Value profile of PRISM transactions

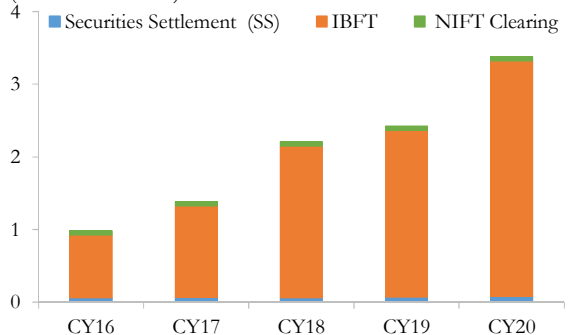
(Value in PKR trillions)



Source: SBP

Chart 7.1b: Volume profile of PRISM transactions

(Volume in millions)



Source: SBP

This was, in part, due to SBP's measure to waive transaction charges on interbank fund transfer (**IBFT**) and third-party customer transfers to promote the use of digital channels amid the pandemic.²⁰¹ Moreover, in view of the country-wide pandemic associated lockdowns, SBP and banks made additional efforts to create awareness among customers and promote the utilization of digital channels for efficient fund transfers.²⁰²

Additionally, increased foreign remittances inflow during CY20 contributed to growth in transactions of third-party fund transfers. As under the Pakistan Remittance Initiative (**PRI**), banks utilize PRISM for same-day settlement of domestic

²⁰² PSD Circular No. 02 of 2020;
<https://www.sbp.org.pk/psd/2020/C2.htm>

transfers of home remittances to their beneficiaries.²⁰³

PRISM maintained continuous availability ...

The uninterrupted availability of vital settlement mechanism, like PRISM, is essential for the smooth functioning of national payment system. Since its inception, PRISM maintained high level of system availability over the years. In CY20 too, despite the extraordinary difficulties created by the pandemic, SBP ensured the continuous availability of the PRISM system by utilizing its business continuity planning framework.

E-banking modes of payments are rapidly gaining preference over paper-based modes of payment ...

The retail payment system is divided into paper-based and electronic mode of transactions. In the overall retail segment, growth in volume and value of transactions largely remained unchanged during CY20. There was significant contraction in both volume and value of paper-based transactions, while electronic mode of funds transfer gained traction as shown by increasing volume and value of e-banking transactions (**Chart 7.2a and 7.2b**).

Chart 7.2a: Value profile of retail transactions

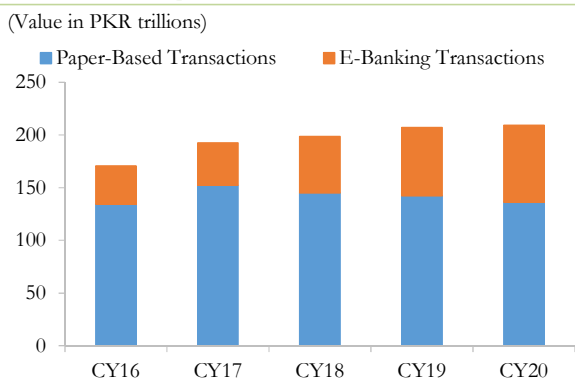
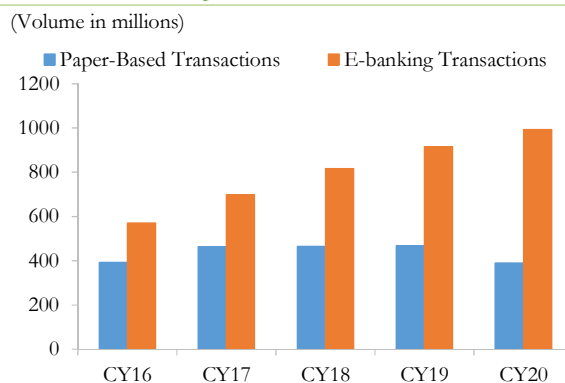


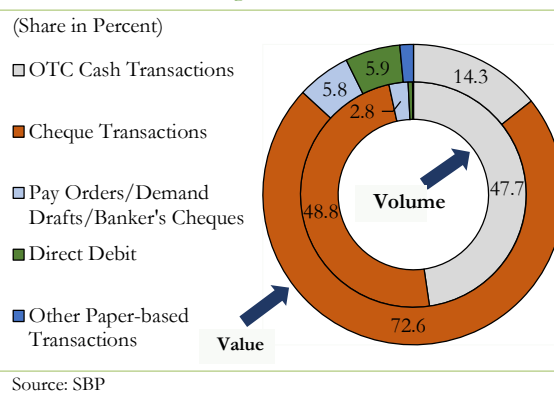
Chart 7.2b: Volume profile of retail transactions



Paper based transactions contracted across all segments...

In retail payments, paper based transactions in terms of volume and value fell during CY20, mainly because of the decline in footfall in bank branches due to the spread of pandemic and associated country-wide mobility restrictions. Overall transactions contracted by 16.65 percent in volume and 4.43 percent in value terms. Cheques dominated the paper-based transactions, contributing 48.77 percent in volume and 72.55 percent in value of these transactions (**Chart 7.3**).

Chart 7.3: Volume and Value wise share of paper-based retail transactions during CY20



Within chequing transactions, the decline in volume of transactions was visible in all the categories – that includes, cash withdrawal, transfers and clearing - during CY20 in

²⁰³ PSD Circular Letter No. 04 of 2015; <https://www.sbp.org.pk/psd/2015/CL4.htm>

comparison to previous year. Cash withdrawals held the majority share in terms of volume of transaction, while fund transfers took up the highest share in total value of chequing transactions (**Table 7.2**).

SBP facilitated cheques utilization and clearing operations under COVID-19 relief measures ...

In order to provide ease of services for customers during the pandemic, banks and microfinance banks (MFBs) were authorized to offer the facilities of direct-cheque deposit, and doorstep and drop box cheque collection to their customers.²⁰⁴

Moreover, SBP had issued comprehensive guidelines in 2017 for clearing and settlement mechanism of paper based transactions. In CY20, SBP revised them by allowing banks at locations, where clearing house services are unavailable, to utilize PRISM to meet their clearing obligations of paper-based transactions.²⁰⁵ This facilitated customers by reducing the turnaround time for these transactions, and ensured a secured settlement of remote area clearing obligations among the banks.

Table 7.2: Chequing transactions in CY20

Type	Number (Million)	Amount PKR billion	Volume share (Percent)	Value Share
Cash Withdrawals	153	21,501	54.51	14.80
Transfers	90	98,314	32.14	67.65
Clearing	38	25,511	13.35	17.55

Source: SBP

Growing e-banking transactions held the momentum ...

Electronic modes of funds transfer gained increasing share in the retail segment in recent years. CY20 was also encouraging, as e-banking transactions witnessed growth of 8.63 percent in

volume and 12.83 percent in value during CY20. This illustrates the customers' growing inclination towards more convenient, safer and efficient digital mode of payments.

Share of Internet banking and Mobile banking increased ...

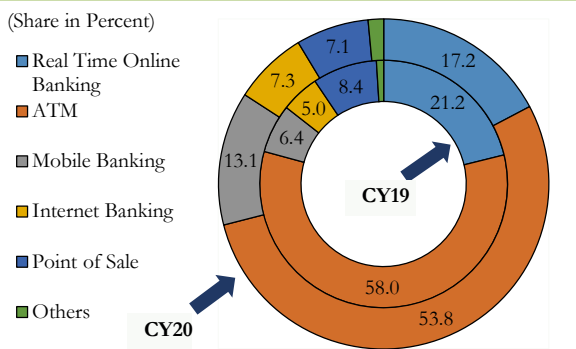
Within e-banking transactions, the significant development was the growing share of mobile and internet banking in total volume and value of transactions in CY20. In terms of volume, their share surged to 13.11 percent and 7.26 percent, respectively, while, in terms of value, they rose to 4.25 percent and 5.48 percent, respectively (**Chart 7.4a & 7.4b**). During the year, the number of registered users of internet and mobile banking saw significant growth of 26.31 percent and 27.51 percent, respectively. Most of the growth took place in the second half of CY20 due to resumption of economic activities, SBP's enabling policies and banks' efforts to promote e-payments.

Moreover, the increasing utilization of mobile, and internet banking are leading to gradual decrease in share of Real Time Online Banking (**RTOB**) and Automated Teller Machines (**ATMs**) in both volume and value terms. Though RTOB transactions still holds the predominant share in value terms, its share slightly contracted to 80.12 percent in CY20 from 83.95 percent in CY19. ATM led with 53.78 percent share in volume terms, witnessing a decline from 58.02 percent in CY19 possibly due to tendency on the part of customers to avoid physical touch-based modes of payments in the wake of the pandemic (**Chart 7.4a & 7.4b**).

²⁰⁴ PSD Circular No. 04 of 2020; <https://www.sbp.org.pk/psd/2020/C4.htm>

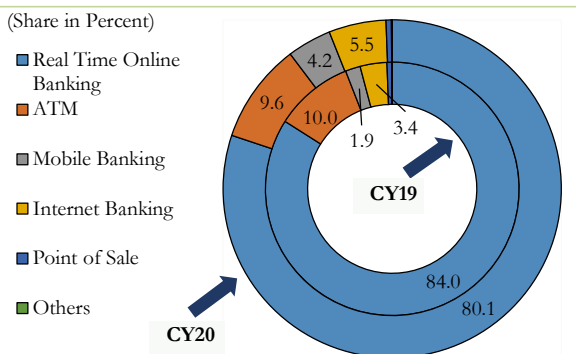
²⁰⁵ PSD Circular Letter No. 01 of 2020; <https://www.sbp.org.pk/psd/2020/CL1.htm>

Chart 7.4a: Instrument wise share in total volume of E-Banking transactions in CY19 and CY20



Source: SBP

Chart 7.4b: Instrument wise share in total value of E-Banking transactions in CY19 and CY20



Source: SBP

SBP incentivized the utilization of digital financial services amid COVID-19 pandemic...

The spread of pandemic and the associated mobility restrictions especially during H1CY20 limited customers' ability to safely access the financial services offered through bank branches. Accordingly, SBP took various measures to incentivize the customers' utilization of financial services through digital channels.²⁰⁶ The major steps taken comprised of: 1) waiver of all charges on customer funds transfers through PRISM, and intra- and inter-bank funds transfers; 2) enabling digital collection of all challan/invoice based payments; 3) relaxation in requirement of

²⁰⁶ PSD Circular No. 02 of 2020 <https://www.sbp.org.pk/psd/2020/C2.htm>

²⁰⁷ These measures include, prescribed set range (1.5 to 2.5 percent) of Merchant Discount Rate (MDR) for all new and existing

biometric verification for activation of internet and mobile banking services; and 4) awareness campaigns for promotion of digital financial services. Such measures played a significant role in promoting the use of digital modes of payments, particularly mobile and internet banking, during CY20.

E-banking infrastructure expanded in the wake of growing preference for digital financial services ...

In order to cater to the shifting preference of banking customers towards electronic modes, the commercial and microfinance banks also invested to expand their e-banking infrastructure and services as evident from the growth in Online Branches, ATMs and Point of Sale (POS) machines during recent years. Likewise, the network of bank cards also experienced expansion as shown by the growth in credit cards and debit cards. (Table 7.3)

Table 7.3: E-Banking Infrastructure

Description	CY16	CY17	CY18	CY19	CY20
Online Branches	13,926	14,610	15,346	15,930	16,165
ATMs	12,352	13,409	14,361	15,252	16,041
POS	52,062	52,506	49,621	47,567	62,480
	Number in Thousands ('000)				
Total Payment Cards	36,202	39,361	41,708	42,083	44,285
of which:					
Credit Cards	1,209	1,374	1,522	1,644	1,691
Debit Cards	17,470	19,848	23,303	26,440	27,592
ATM Only Cards	6,806	8,385	8,805	7,650	7,246
Social Welfare Cards	10,358	9,501	7,848	6,180	7,624
Pre-paid Cards	359	253	230	168	133

Source: SBP

SBP introduced measures to improve payment card acceptance infrastructure ...

The digital payment infrastructure has achieved considerable growth in the recent years; however, growth in the number of POS terminals had remained somewhat restricted till CY19. To address this issue, SBP introduced new measures²⁰⁷

merchants, cap on Interchange Reimbursement Fee (IRF) for debit and pre-paid cards, and that, card issuers shall offer SBP approved

aimed at mitigating the challenges faced by the POS acquiring industry.²⁰⁸

These measures helped in improving the payment card acceptance infrastructure in the retail sector, which is also a key objective of the National Payment Systems Strategy (NPSS). As a result, the number of acquired POS machines in the country posted a robust increase of 31.35 percent during CY20, compared to reduction witnessed in both CY18 and CY19.

SBP has launched “Raast” – an instant payment system for retail transactions ...

To realize the objective of a modern and efficient national payment system, SBP has launched ‘Raast’²⁰⁹ – an instant payment system for retail transactions – at the start of 2021 as a first major step taken for implementation of NPSS.²¹⁰ This development would contribute towards achieving the policy objectives of increasing digitization, convenient and affordable payments, and financial inclusion in the country.

The ‘Raast’ system would enable faster and cost effective payments, increase payment system efficiency, and support interoperability across payment services operating in the country. It envisages providing access to all players in the financial services industry (banks, Electronic Money Institutions (EMIs), etc.) and acting as a secure medium for transactions between customers, businesses, and government entities. It would offer the features of real-time settlement of transactions, alias based payments, bulk transfer of funds, and the capability to on-board participants through Application Programming Interfaces (APIs).

The system would be rolled out in a phased manner. Its full implementation would result in end-to-end digitization of payment transfers

Domestic Payment Scheme (DPS) Card as the default card at the time of issuance or renewal of debit cards.

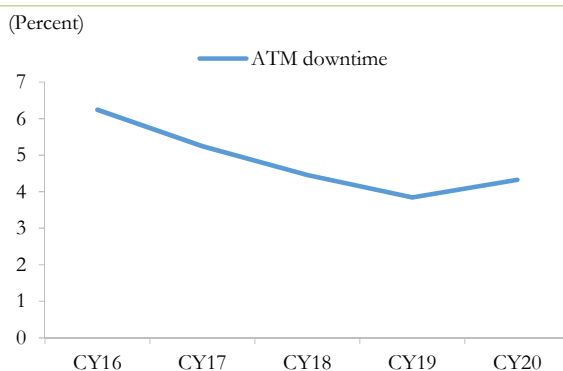
²⁰⁸ PSD Circular No. 01 of 2020
<https://www.sbp.org.pk/psd/2020/C1.htm>

between individuals, government entities, and businesses. In the initial phase, bulk payment module will be implemented to digitize transfers including dividend payments, salaries and pensions of government departments, etc. Subsequently, the system would digitize person-to-person payments, and payments made to and among the businesses.

ATM efficiency remained within expectations despite pandemic-induced lockdowns and mobility restrictions ...

The efficient functioning and upkeep of ATMs is of critical importance as in terms of volume, ATM transactions have the highest share in total e-banking transactions. ATM downtime can occur due to several reasons including system failure at bank’s end, poor connectivity, power outages, and inadequate cash; consequently, outage of services can result in service interruption to customers and may contribute to reputational risk.

Chart 7.5: ATM Downtime



Source: SBP

During CY20, lockdowns, mobility restrictions and other pandemic related measures amplified the difficulties for banking staff to adequately cater to the upkeep of ATMs. Despite these challenges, the banking industry’s efforts ensured that the ATM downtime remain minimal during the pandemic. Consequently, ATM uptime stood at 95.68 percent for CY20, slightly lower than the level observed in

²⁰⁹ SBP’s launched Raast in collaboration with Bill & Melinda Gates Foundation and Karandaaz, Pakistan.

²¹⁰ SBP Press Release, January 11, 2021;
<https://www.sbp.org.pk/press/2021/Pr-11-Jan-21.pdf>

CY19, but still remained above the CY18 level (i.e. 95.53 percent) **(Chart 7.5)**.

Branchless Banking showed higher growth ...

Branchless banking offers tremendous opportunities for expansion of the financial services to the financially excluded populace of the country. Since its inception, branchless banking has consistently showed growth and played a key role in offering financial services to the financially underserved population.

During CY20, branchless banking performance rebounded in comparison to somewhat modest growth in CY19. The total branchless banking accounts surged by 36.12 percent, while, deposits touched an all-time high of PKR 52 billion. The total transactions in volume and value terms increased by 38.95 percent and 50.63 percent, respectively. This highlights both the increasing confidence of the customers in branchless banking as well as the high potential of growth in branchless banking.

Table 7.4: Key Highlights of Branchless Banking

Description	CY18	CY19	CY20	Growth (percent)
No. of Agents	425,199	437,182	481,837	10.21
No. of Accounts (thousands)	47,165	46,103	62,755	36.12
No. of Active Accounts (thousands)	19,800	24,530	37,020	50.92
Deposits at period end (PKR million)	23,678	28,770	51,671	79.60
No. of Transactions (millions)	955	1,309	1,819	38.95
Average Daily Transactions (thousands)	2,653	3,637	5,053	38.95
Value of Transactions (PKR billion)	3,659	4,505	6,786	50.63
Average Size of Transactions (PKR)	3,831	3,445	3,715	7.84
Average deposit in accounts (PKR)	502	624	823	31.89

Source: SBP

Encouragingly, the role and importance of branchless banking in offering convenient mode of payments to customers for their daily transaction needs have increased, which is evident from the

increasing average daily transactions that have almost doubled in CY20 compared to CY18. Further, consumers' demand for financial services offered through branchless banking accounts also improved, as the share of number of active accounts in the total accounts reached 58.99 percent in CY20 from just 41.98 percent in CY18. Moreover, in the same period, the average deposit per account also increased to about PKR 823 from PKR 502 in CY18 **(Table 7.4)**.

Enhanced measures to mitigate heightened cyber security risk in the context of the pandemic ...

Financial institutions working in the country strive to have effective arrangements in place to cope with IT security risk and ensure the security of their network infrastructure. However, the spread of the pandemic compelled financial institutions to adjust their working processes, particularly, by allowing remote access to their IT systems and business applications from outside the trusted network. To maintain the resilience and robustness of cyber security measures, SBP introduced additional cyber/information security requirements for the financial institutions during CY20.²¹¹ These measures helped to ensure the system-wide cyber security of the financial industry.

7.2 FMIs other than Payment Systems

NCCPL is a key part of the national FMI, performing the critical function of settlements of trade in the corporate securities market. During CY20, it took various measures to improve operational efficiencies and strengthen risk management regimes.

NCCPL overhauled its BCP in wake of the pandemic ...

In March 2020, NCCPL overhauled its Business Continuity Plan **(BCP)** in view of the outbreak of the pandemic. Under the overhauling process,

²¹¹ PSD Circular No. 03 of 2020; <https://www.sbp.org.pk/psd/2020/C3.htm>

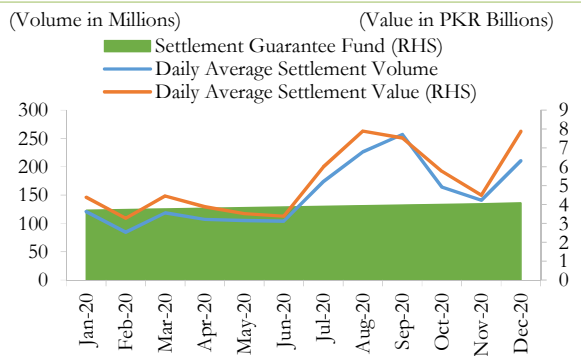
drills were conducted from operational business continuity alternative sites, which helped to ensure that NCCPL would be able to maintain the smooth functioning of the markets, and the provision of business services to clients.²¹²

Mechanism to diminish Settlement Risk worked efficiently ...

To mitigate the settlement risk arising from a potential default by the settlement party, NCCPL has in place mechanisms involving a Settlement Guarantee Fund (SGF). At the beginning, fund valued at PKR 3 billion were dedicated to SGF. Since then, the fund has been gradually increased over the years; it stood at PKR 4 billion by end December 2020.

In CY20, the daily average settlement value stood at PKR 5 billion. However, the SGF remained unutilized as the margins provided by clearing members, which are the first line of defense against default risk, worked efficiently (Chart 7.6).

Chart 7.6: Comparison of settlement guarantee fund with daily average of settlement



Source: NCCPL

Simplification of account opening process with NCCPL ...

Under its Centralized “Know-your-Customer” Organization (CKO) functions, NCCPL undertook various changes in its requirements for

opening and maintenance of accounts to make the process more transparent and efficient²¹³.

Moreover, NCCPL has extended the scope of CKO regime to investors of Pakistan Mercantile Exchange Limited (PMEX) as well.²¹⁴ Securities and Exchange Commission of Pakistan (SECP) had granted license to NCCPL as CKO in CY19.

To facilitate digital onboarding of market participants, NCCPL introduced the feature of online account opening. This would help in attracting higher participation and liquidity in the market, which could be beneficial in mitigation of settlement risk.²¹⁵

Implementation of clearing, settlement and risk management for newly introduced ETF products at PSX ...

NCCPL introduced amendments to its regulatory and risk management frameworks for trading in products related to newly introduced Exchange Traded Funds (ETFs) at Pakistan Stock Exchange (PSX). ETFs products were launched by PSX for the first time, in March 2020.²¹⁶

CDC performed efficiently...

CDC acts as the CSD of the country.²¹⁷ It performs a two-pronged function i.e. the facilitation of trade in securities and management of the custodial risk associated with it. During CY20, it continued to hold the trust of the public as evident by the increasing number of investor accounts, which stood at 59,919 at the end of CY20, an increase of 5.5 percent from CY19. The CDC handled 155 billion shares with a market capitalization of PKR 5 trillion during the reviewed period.²¹⁸

²¹² NCCPL’s Newsletters, January-March, 2020

²¹³ In view of the pandemic situation, NCCPL provided relaxation in biometric verification and documentation requirement, under KYC process, for account opening.

²¹⁴ NCCPL’s Newsletters, January-March, 2020

²¹⁵ NCCPL’s Newsletters, October-December, 2020

²¹⁶ NCCPL’s Newsletters, January-March, 2020

²¹⁷ It manages and operates the Central Depository System (CDS), which is an electronic book-entry system used to record and maintain securities and register their transfers.

²¹⁸ CDC Newsletter, April-Dec 2020

CDC ensured business continuity despite pandemic ...

CDC strengthened its business continuity plan under the challenging environment created by the pandemic during CY20. This ensured the continuous availability of key business services offered by CDC, including central depository system (**CDS**), and trustee and custodial services.

Moreover, CDC introduced various measures in order to facilitate the consumers and market that included the launch of zakat repository system, regularization of expired CNIC sub-accounts, e-dividend direct facility to improve investors' access to information, reduction in CDC tariff structure, and simplification in investors account opening process.²¹⁹

National Payment Systems Strategy (NPSS) implementation remains a top priority ...

SBP introduced the NPSS in November 2019. NPSS sets out a roadmap to structure the National

Payments System on the principles of efficiency, accessibility and safety, and to provide an innovative market environment in the national payment landscape.

Under this vision, SBP set in motion various significant developments during CY20. One such key development in the area of retail payment segment has been the launch of “Raast” which will be a cornerstone of the national digital financial services ecosystem and can bring efficiency gains across all areas. Moreover, SBP made successful regulatory intervention in the national payment card acceptance infrastructure to increase the penetration of existing digital channels of payment under NPSS.

²¹⁹ CDC Newsletters, Jan-Mar 2020 and April-Dec 2020