

In Pakistan, Payment System constitutes the major form of Financial Market Infrastructure (FMI) as it serves both large value and retail transactions through established channels. The Pakistan Real Time Interbank Settlement System (PRISM) observed a substantial hike in both the value and volume terms due to large securities settlement in the review period. Retail payment by virtue of paper and e-transactions showed consistent growth relative to the preceding years. The unfolding demands and challenges related to national payment systems are duly being taken into account by SBP in the form of various initiatives taken on developmental and regulatory front.

FMI includes a spectrum of institutions...

In Pakistan, there exists an effective and efficient infrastructure of FMI which is spread across the different entities and jurisdictions. Financial Market Infrastructure (FMI) of Pakistan largely consists of systemically important payments systems which include large value transactions executed through PRISM and retail transactions routed through the paper based and e-transactions. Besides payment systems, depository and clearing companies are also the key manifestations of the FMI which provide effective and efficient platform for the market players of the financial infrastructure to execute their transactions in a safe and structured manner.

FMI are centric to the clearance and settlement of transactions in the financial institutions as well as the flow of money and securities. As per BIS¹⁷⁵, FMI essentially covers the Payment Systems¹⁷⁶, Central Securities Depositories¹⁷⁷ (CSDs), Securities Settlement Systems¹⁷⁸ (SSSs), Central Counter

Parties¹⁷⁹ (CCPs), and Trade Repositories¹⁸⁰ (TRs). Detail view of the FMI framework is given in Annexure A at the end of this chapter.

State Bank of Pakistan manages the securities settlement system of government securities through PRISM on gross basis and in real time, which is secure, low cost and one window solution. Government securities are settled using Delivery versus Payment (DvP) model. Additionally, SBP acts as a primary central securities depository for the book based government securities. SBP also manages the issuance and recording of secondary market transactions including repos. The government securities include Treasury Bills (T-bills) – Market T-bills (issued to commercial banks) and Market Related T-bills (government borrowing directly from SBP), Government of Pakistan Ijarah Sukuk and Pakistan Investment Bonds. State Bank of Pakistan introduced an Electronic Bond Trading platform (EBND) in January, 2010 with an objective to bring efficiency in secondary market trading of Government Securities. It provides a central platform where investors can easily access marketable securities i.e. Market Treasury Bills, Pakistan Investment Bonds and Ijara Sukuk.

¹⁷⁵ Committee on Payment and Settlement Systems, (2012). “Principles for Financial Market Infrastructure”, Bank of International Settlement.

¹⁷⁶ A payment system is a set of instruments, procedures, and rules for the transfer of funds between or among participants; the system includes the participants and the entity operating the arrangement.

¹⁷⁷ A central securities depository provides securities accounts, central safekeeping services, and asset services, which may include the administration of corporate actions and redemptions, and plays an important role in helping to ensure the integrity of securities issues.

¹⁷⁸ A securities settlement system enables securities to be transferred and settled by book entry according to a set of predetermined multilateral rules.

¹⁷⁹ A central counterparty interposes itself between counterparties to contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer and thereby ensuring the performance of open contracts.

¹⁸⁰ A trade repository (TR) is an entity that maintains a centralized electronic record (database) of transaction data. TRs have emerged as a new type of FMI particularly in the OTC derivatives market.

EBND helps in improving price discovery and enhancing liquidity in the Government securities. Further, the availability of real-time information about yields and turnover is beneficial for all investors and corporate issuers as it facilitates benchmarking of their upcoming corporate bonds or funding requirements. This system also provides international investors an additional window to access the country's financial markets.

Central Depository Company (CDC) serves as the sole securities depository in the country as far as the capital market is concerned. CDC handles the transactions like deposit of securities, transfer of securities, pledging of securities, pledge release, pledge call, withdrawal of securities and corporate actions¹⁸¹. CDC handles the electronic (paperless) settlement of transactions (both equity and bonds) carried out at the stock exchange of the country. As of June 30, 2015, CDC has managed 117.7 billion shares, with a total market capitalization of PKR 4,649.6 billion in central depository system¹⁸².

CDC is also providing the securities settlement of government securities Bond Automated Trading System (BATS).¹⁸³ Above arrangement has enabled the retail segment to participate in the trading of government securities.

Another significant FMI, National Clearing Company of Pakistan Limited (NCCPL) provides clearing and settlement services to the Pakistan Stock Exchange Limited (PSX) through fully automated National Clearing and Settlement Services (NCSS)¹⁸⁴. NCSS is the integrated system which provides settlement mechanism on DvP basis, without the involvement of physical instruments and manual intervention. Following are

the main segments of PSX which are dealt in the NCCPL for clearing and settlement purposes:

- Regular/Cash Market
- Odd-lot Market
- Derivative Markets (Futures and Stock Index)
- Negotiated Deal Market
- Debt Market
- Margin Trading System (“MTS”)
- Margin Financing System (“MFS”)
- Securities Lending and Borrowing System (“SLB”)

Role of central counterparty (CCP) has not been taken by any institution in the country. In most of the countries, the clearing companies assume the function of CCP due to their very relevance and nature. In Pakistan, NCCPL intends to adopt the charge of CCP. In doing so, multiple factors have to be premeditated, primarily on the account of associated cost, default risk, systemic risk and oversight function.

Trade repository (TR) is the emerging form of FMI which has been trying to establish its position globally in the face of many legal and technical hurdles¹⁸⁵. In the local context, low OTC derivative market has not inspired the formation of TR in the country.

In the wider sense, FMI also encompasses the supporting entities such as credit bureaus, stock exchanges and mercantile exchange etc. which indirectly impact the FMIs. Thus, FMI plays a vital role in the smooth functioning of the financial system and contributes towards the financial stability and, in the broader sense, economic growth. At the same time it carries various FMI related risks which if not managed properly can trigger a

¹⁸¹ <http://cdcpakistan.com/businesses/central-depository-system/>

¹⁸² <http://cdcpakistan.com/downloads/>

¹⁸³ <http://cdcpakistan.com/media-center/cdc-to-provide-settlement-services-for-government-securities-traded-on-kses-bond-trading-system/>

¹⁸⁴ <http://www.nccpl.com.pk/>

¹⁸⁵ https://www.bis.org/ifc/events/ifc_isi_2015/089_heitfield_presentation.pdf

systemic distress in the financial market, a key concern for the regulators.

Payment System landscape...

Payment System, the most prominent form of FMI, mainly accounts for large value transactions and retail transactions facilitated through well-established products and channels. An efficient and effective payment system is the responsibility of the stakeholders of the system and requires management of the ever evolving challenges and risks. Smooth functioning of payment system is critical not only for the stability of the financial markets but also for the uninterrupted transmission of the monetary policy signals.

As one of its core objectives, SBP has included the strategic goal on payment systems in its vision 2020. It aims to extend the focused efforts on the developing, modernizing, regulating and maintaining the modern and robust payment systems in the country. Such efforts will complement the SBP vision 2020 by facilitating the development of efficient, effective and robust financial system of the country. SBP has made concerted efforts to ensure payment system’s safety, integrity, efficiency and reliability. Such endeavors remained well cognizant of market players’ investment in IT and core banking solutions.

In recent times, Payment systems have migrated from the backroom to the boardroom...

In CY15, payment system witnessed a robust growth in its various components significantly contributed by the large value transactions conducted through PRISM¹⁸⁶. Growth of retail

¹⁸⁶ PRISM started operations with the settlement of interbank money market transactions and the domestic leg of FX market operations in July 2008. Since then, the scope of PRISM has been enhanced over time to provide a range of services such as; a) settlement of government securities, b) Intraday Liquidity Facility (ILF), c) SBP’s internal transactions, e) bank’s own account transfer and f) access to stock exchange member through their settlement bank.

payment transaction is by and large consistent with the spike seen in the preceding years (**Table 8.1**). PRISM transactions accounted for almost 56.3 percent of the total value of the payment system in CY15.

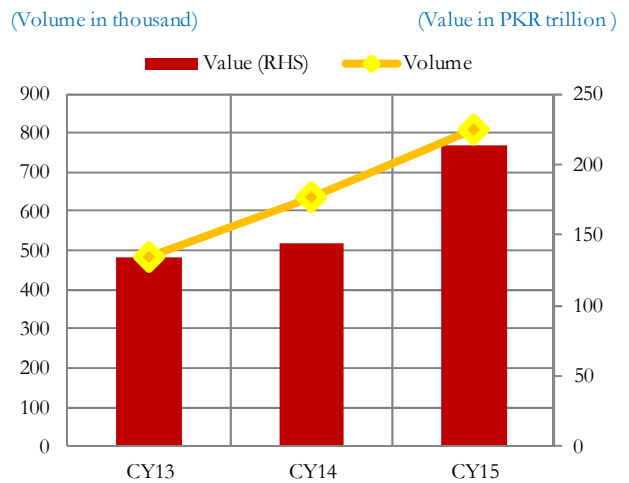
Table 8.1
Profile of Payment System Mechanisms

Mechanism	CY13		CY14		CY15	
	Volume	Value	Volume	Value	Volume	Value
Volume in thousands and value in PKR trillion						
PRISM	483.0	134.0	636.0	144.0	809.0	213.0
Retail Payments	718,312.0	140.4	802,020.0	158.0	856,298.0	165.0
Paper based	357,800.0	109.0	365,219.0	123.0	348,797.0	129.0
E-transaction	360,512.0	31.4	436,801.0	35.0	507,501.0	36.0

Source: PSD, SBP

Figure 8.1
PRISM shows hike in both value and volume terms

Growing trend of PRISM



Source: PSD, SBP

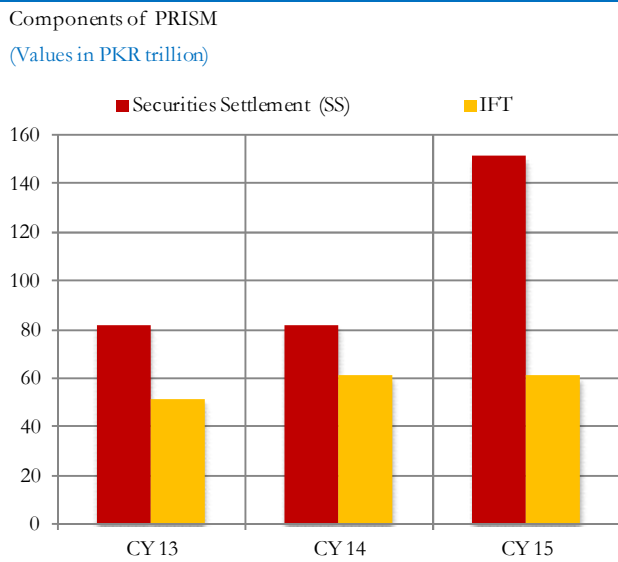
PRISM transactions grow in volume and value...

In CY15, PRISM has shown a noticeable elevation in terms of value which reaches the figure of PKR 213.0 trillion (**Figure 8.1**). Large value transactions observed rising trend which was characterized by

the high value transactions of government securities (PKR 151 trillion) (**Figure 8.2**).

The significant increase in value of Government Securities is basically due to increase in interbank Securities Settlement as well as Open Market Operations (OMOs) in CY15¹⁸⁷.

Figure 8.2
PRISM transactions increased substantially



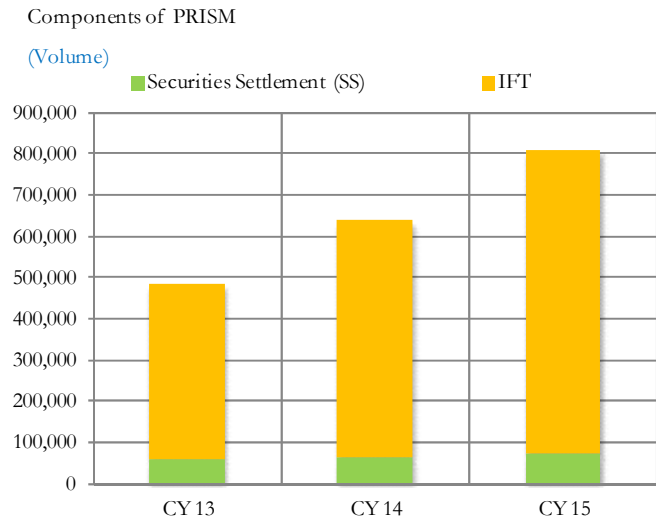
Source: PSD, SBP

In terms of volume also, PRISM transactions are growing steadily (**Figure 8.3**). Inter-bank Funds Transfer (IFT) carry the major portion in the PRISM transactions as far as the volume is concerned. In CY15, IFT transactions grew by 28.8 percent as compared to CY14. Rise in IFT is rationalized by the elevated confidence on the PRISM by banks for the speedy transfers and settlement among themselves.

Securities settlement transactions also kept growing and recorded 69,433 transactions in CY15. However, the instruments of retail cheque clearing

are settled in PRISM on multilateral net settlement batch (MNSB).

Figure 8.3
Number of PRISM transactions shown uphill trend



Source: PSD, SBP

As against volume of transactions, the value of the IFT transaction has shown a slight dip of 0.5 percent in CY15. This contradictory trend of volume versus value shows that banks have used PRISM platform more frequently for relatively low value transactions (**Figure 8.2**).

Since transactions in PRISM are settled on real time gross basis, this feature requires its participants to have instant liquidity at the time of transaction settlement. To address the liquidity risk so that shortages at one participant do not spread throughout the system, various techniques like queuing arrangements, prioritization algorithms, netting arrangements (e.g. in hybrid systems), intraday credit arrangements, and securities lending arrangements are employed for better execution of the liquidity management.

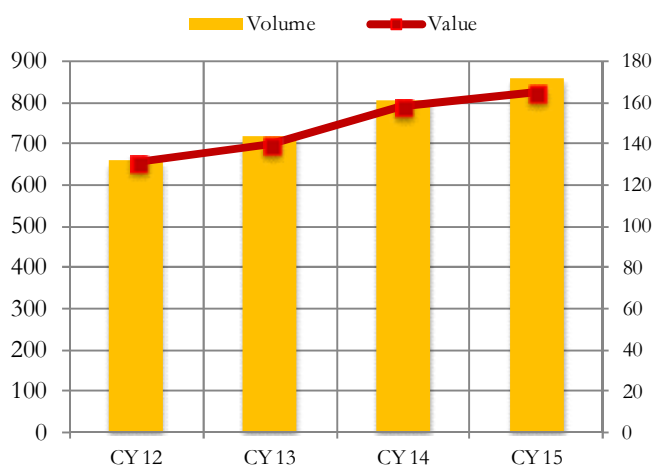
SBP also provides certain facilities for efficient settlement of transactions. For example, liquidity deficient participant may avail either (a) Intraday

¹⁸⁷ Securities are settled in PRISM system on DVP Model 1, because of which settlement risk is totally eliminated.

Liquidity Facility (ILF)¹⁸⁸ from SBP or (b) queue the pending transaction in PRISM till the availability of required funds. The ILF, generally, allows banks smooth settlement of transactions and avoids large queues and gridlock situations¹⁸⁹.

Figure 8.4
Retail payment growth trends consistent with previous years

Retail payment trend
(Volume in million) (Value in PKR trillion)



Source: PSD, SBP

Retail Payment transactions continue to grow...

Retail transactions are usually described as the transactions between consumers and the businesses. Consumers generally use the retail payments in areas like purchase of goods and services, bills payment, Person-to-Person payments (P2P) and cash withdrawals. In a granular view, paper based and e-transactions accumulate to form the retail transactions. Retail transactions of 856 million in number with a worth of PKR 165 trillion were executed in CY15; thus following the consistent

¹⁸⁸ The ILF is a fully collateralized liquidity facilities extended by SBP against approved government securities to ensure the smooth functioning of PRISM.

¹⁸⁹ If one bank face funding shortfall, it may create the shortage of funds for the recipient bank. A system wide similar situation where several banks' transactions are stuck is called Gridlock situation.

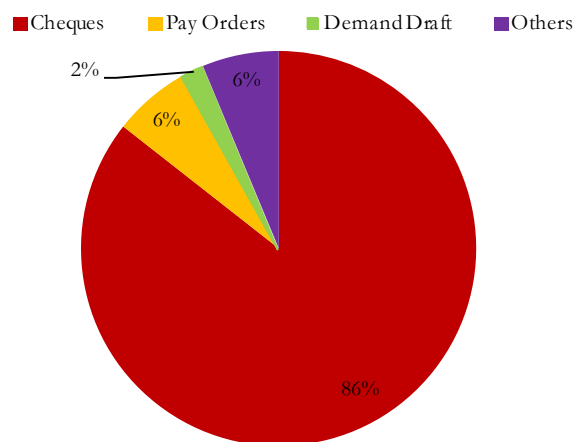
growth pattern in line with previous years (Figure 8.4).

Within retail, paper based transactions remained dominant as they accounted for 78.1 percent of the aggregate retail value of all transactions. E-transactions also showed an improvement by recording the value of PKR 36 trillion as compared to PKR 35 trillion in CY14 (Table 8.1).

Prevalence of paper based transactions shows that the use of digital channels is limited and low due to lack of customers' (households and businesses) trust, financial illiteracy, digital divide and habit persistence etc.

Figure 8.5
Cheque transactions dominated the paper based transaction

Value-wise share of paper-based retail transactions during CY15
(percent)



Source: PSD, SBP

Cheques still the dominant part of Paper-based transactions...

Historically, consumers have been using cheques more often than any other retail payment instruments other than cash. The spread out of paper based transactions reveals that the dominance of cheque based transactions persists as they comprised 85.6 percent share in value and 93.6 percent share in volume terms (Figures 8.5 & 8.6).

Other paper based transactions such as pay orders and demand drafts are low in value and volume depicting the limited but customized needs of the customer.

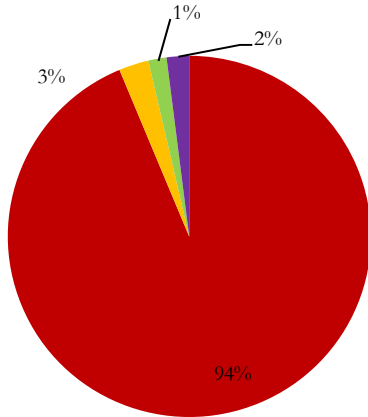
Figure 8.6

Cheque transactions remained highest in value

Volume-wise share of paper-based retail transactions during CY15

(percent)

■ Cheques ■ Pay Orders ■ Demand Draft ■ Others



Source: PSD, SBP

Among cheque based transactions, cash based transactions held the lead in volume terms by contributing 52.4 percent of the total chequing transactions, whereas cheque transfers were most preferred mode in value terms– about 61.4 percent of the total chequing transactions in CY15 (**Table 8.2**).

Table 8.2

Chequing Transactions in CY15

	Number (million)	Amount (PKR Billion)	Volume share (percent)	Value Share (percent)
Cash	172.0	18,354.0	52.4	16.5
Transfer	99.0	68,342.0	30.2	61.4
Clearing	57.0	24,444.0	17.4	22.0
Refund	0.0	210.0	0.0	0.2

Source: PSD, SBP

Keeping in view the high share of chequing transactions in the overall retail payment structure, there runs a parallel risk of frauds associated with the financial instruments like cheques. To address this important aspect, SBP has issued the guidelines¹⁹⁰ in 2014 on the standardization of security features and layout of cheques prescribing minimum requirements in respect of security features and printing techniques of cheques. This initiative is intended to speed up the overall cheque clearing process, facilitate truncation project and minimize fraudulent activities. Similar steps have been taken by SBP to standardize the layout and security features of Pay Order (PO), Demand Draft (DO) etc.

Clientele behavior, technology and regulation accelerating the E-banking.....

Financial sector of Pakistan, with SBP’s complementary efforts, has shown considerable growth in a wide spectrum of e-banking avenues, enabling customers to benefit from speedy, convenient and paperless ways of conducting financial transactions. With more banks stepping into the e-banking infrastructure and offering technology based banking services coupled with enhanced awareness among consumers; the e-banking is flourishing in a consistent manner.

E-banking has been growing in recent years. In CY15, value and volume of e-banking has increased by 14.6 percent and 40.7 percent respectively, as compared to CY13 (**Table 8.1**). The rising trend in e-banking was duly supplemented by enriched infrastructure such as ATMs, Real Time Online Branches (RTOBs), credit cards, debit cards etc. (**Table 8.3**).

¹⁹⁰ PSD’s Circular No.1 of 2014 and CPD’s Circular No.1 of 2014

Table 8.3

Overview of e-Banking in Pakistan (June 30, 2015)

Description	Numbers
Infrastructure	
Online Branches per 100,000 population	6
Manual Branches	622
ATMs per 100,000 population	5
Interoperable switches	2
Banks managing POSs	6
POS Machines	41,183
Banks' Services	
Banks providing internet banking	21
Banks providing mobile banking	16
Banks providing call center & IVR banking	16
Banks issuing credit cards	12
Banks issuing debit cards	27
Banks issuing prepaid cards	9
Banks having ATMs	28

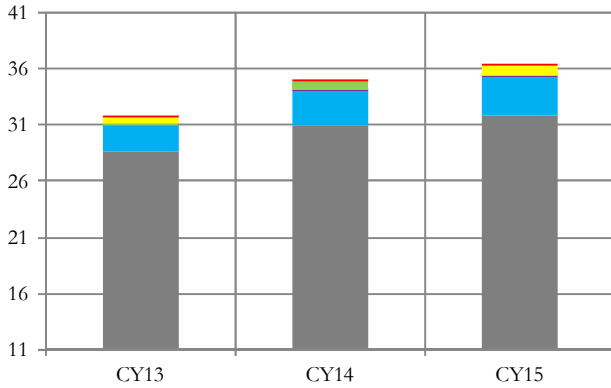
Source: PSD, SBP

Figure 8.7

E-Banking transactions show slight improvement in value

Value of E-Banking Transactions
(PKR trillion)

■ Mobile Banking ■ Internet Banking ■ Call Center
■ POS ■ ATM ■ RTOB



Source: PSD, SBP

RTOB the lead component of e-banking in value terms...

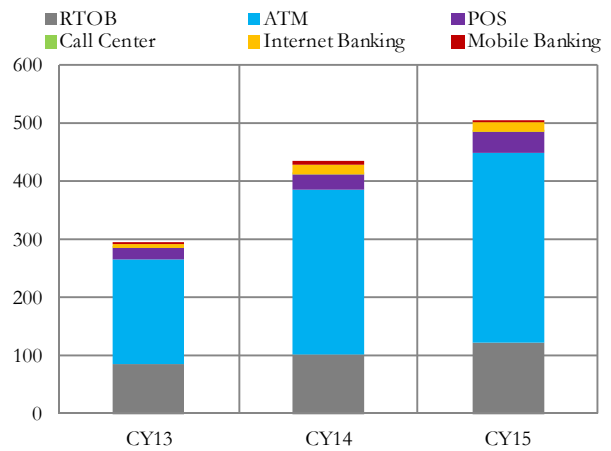
Real Time Online Banking (RTOB) transactions are relatively large value-low frequency Alternative

Delivery Channel (ADC) in e-banking which comprises the value share of around 87.6 percent compared to significantly low volume contribution of 24.3 percent in e-banking repertoire (**Figures 8.7 & 8.8**). With addition of 1,293 online branches in the banking network of Pakistan, the total figure of online branches reached 12,442 (around 95.6 percent of total branches) by the end of CY15. There is an addition of PKR 795 billion value in the RTOB transactions.

Figure 8.8

Number of E-Banking transactions increased

Volume of E-Banking Transactions
(In million)



Source: PSD, SBP

ATM's penetration has improved...

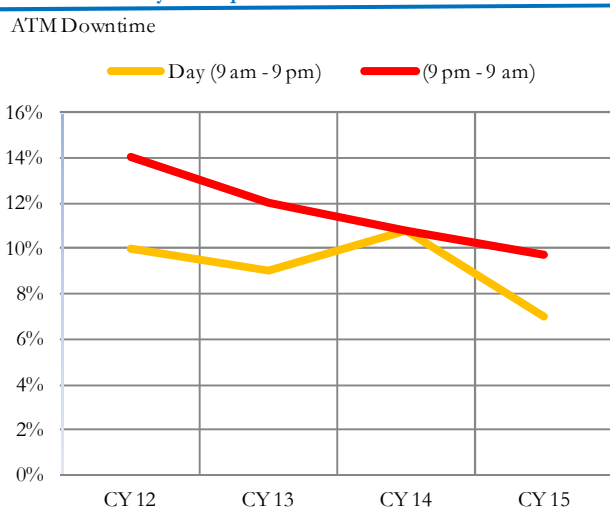
ATMs are one of the user friendly and convenient tools of e-banking. SBP has endeavored to ensure round the clock availability of ATMs with consistent monitoring, resolving issues (like out of cash, hardware/software issues, power outages, connectivity or network issues) in minimum possible time and ATM penetration.

With a decent growth of 19.1 percent the cumulative number of ATMs reached 10,736 in CY15 (**Table 8.4**). Expansion of ATMs is spurred

by the business as well as regulatory reasons¹⁹¹. Though overall penetrations of ATMs have improved and on average 5 ATMs are available for 100,000 people, it still lags behind the international standards of outreach.¹⁹²

In CY15, there were 325 million transactions routed through ATMs out of a total of 507 million e-banking transactions. The value shared by ATMs is PKR 3.4 trillion which is almost 9.4 percent of the total e-banking transaction value of PKR 36 trillion.

Figure 8.9
ATM Efficiency has improved



Source: PSD, SBP

Keeping a check on the operational efficiency of the ATMs, the downtime (time ATMs not operational) serves as an important yardstick. The downtime of the ATMs has reduced in CY15 when compared with the previous years. Enhanced regulatory efforts have been made and supervisory tools are exercised

¹⁹¹ As per SBP's instructions, banks are required to open at least one ATM with each new branch and bring number of ATMs at par with number of branches in next five years w.e.f. end December 2013 such as covering 20 percent gap each year.

¹⁹² 17 ATMs per 100,000 people is the average of (50th percentile) 26 countries sample as per analysis in the report of World Bank. <http://siteresources.worldbank.org/INTTOPACCFINSE/Resources/Bnkoutrech.pdf>

for the availability of working ATMs especially during occasion days. The average downtime has reduced to 7 percent and 10 percent for the day and night time, respectively from 10 percent and 14 percent in CY14 (**Figure 8.9**).

Stats related to issuance of ATM cards has also shown an unprecedented upheaval (419.9 percent) due to the fact that for the first time ATM cards of Microfinance banks have been included in the reported e-banking infrastructure (**Table 8.4**).

Table 8.4
E-Banking Infrastructure Position

	CY12	CY13	CY14	CY15	Growth
	number				percent
ATMs	6,232.0	7,684.0	9,018.0	10,736.0	19.1
Online Branches Network	9,896.0	10,596.0	11,149.0	12,442.0	11.6
POS	34,724.0	33,734.0	34,945.0	50,072.0	43.3
Credit Cards (000)	1,271.2	1,336.0	1,332.0	1,394.0	4.7
Debit Cards (000)	18,571.5	20,048.1	23,727.0	26,489.0	11.6
ATM Only Cards (000)	873.8	996.2	935.0	4,861.0	419.9

Source: PSD, SBP

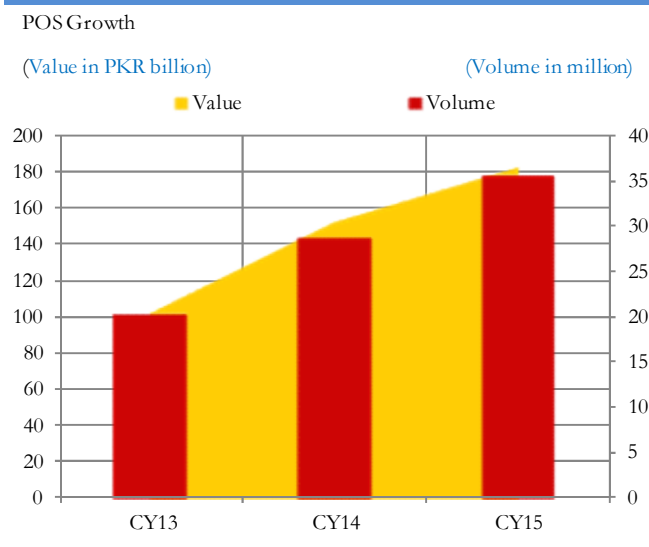
PoS, the other e-banking channel, also grow...

Among other e-banking channels, Point of Sale (PoS) was the most impressive channel of e-banking in CY15 as far as the growth rate (43.3 percent) is concerned. Elevated trust of customers accompanied with available PoS infrastructure has improved the PoS based transactions.

In consonance with the growth rate, PoS achieved the splendid increment of 78.4 percent and 76.5 percent in value and volume terms, respectively, in CY15 relative to the CY13. Though, proportionate share of the PoS is not prevailing in terms of both value and volume terms, when compared to other e-banking avenues, yet it has recorded improved figures of volume (35 million) and value (PKR 182 billion) on standalone basis in CY15 (**Figure 8.10**).

Figure 8.10

POS recorded spike in volume and value



Source: PSD, SBP

Nonetheless, more efforts and investments are needed for the encompassing outreach of the e-banking services to the unbanked population of the country. At the same time, such efforts are needed to be accompanied by sophisticated and prudent risk management systems at bank level to minimize the losses and frauds associated with e-transactions.

Branchless Banking on the surge...

The Branchless Banking (BB) regulations, first of its kind and based on the spirit of financial inclusion, were developed and issued by the State Bank way back in 2008. Differing from the international models that were teleco-based, the central bank owing to peculiar social settings opted for the bank-led model; underlying themes being the “responsibility viz-a-viz the depositor”, consumer protection and compliance with the AML/CFT.

Given the fact that the idea of financial inclusion revolves around the dispossessed sections of the society and the bank-led model matched the industries’ move towards technology based banking, branchless banking initiative of the SBP gained early

acceptance from the market, which took quick strides for its implementation. Seven years down the road, the experiment seems to strongly indicate that it has contributed positively in reaching the target audience.

The interest shown by the well-known banking groups illustrates the viability of the BB from a purely business development standpoint. There are about 8 players in the BB business, five belonging to main stream top private banks and three MFBs.

With the growing participation of banks in branchless banking, the sector holds promise for eliminating financial exclusion of the depressed sections of society. Fast expanding BB network, both due to entry of new players and increase in number of agents offering BB remained the key to this extraordinary growth.

Table 8.5

Key Highlights of Branchless Banking

	CY14	CY15	Growth (percent)
No. of Agents	204,073.0	301,823.0	47.9
No. of Accounts (thousands)	5,414.0	15,322.0	183.0
No. of Transactions (millions)	278.0	375.0	34.9
Average No. of Transactions Per Day (thousands)	772.0	1,041.0	34.8
Deposits (PKR million)	6,668.0	8,827.0	32.4
Value of Transactions (PKR billion)	1,353.0	1,872.0	38.4
Average Size of Transactions (PKR)	4,867.0	4,992.0	2.6

Source: AC&MFD, SBP

In CY15, number of accounts grew by 183.0 percent as compared to CY14, thus showing the interest of the public in the branchless banking (**Table 8.5**). Furthermore, the telecom companies’ balance air time network has also been instrumental in padding up the agents’ network. Elevated market penetration of BB network has duly impacted the value and volume, which hiked up to PKR 1,872 billion and 375 million, respectively, in CY15.

Risks, Challenges and Developments...

The host of risks associated with FMI includes major risks like systemic risk, credit risk, liquidity risk, legal risk and operational risk (**See Box: 8.1**) which are critical, especially in the context of supervisory oversight. Failure to address these risks can lead to sources of financial shocks such as liquidity dislocations and credit fallouts. Failure of payment system has a negative impact on the execution of the monetary policy and confidence of the public in the financial system at large.

SBP has largely eliminated the settlement risk in large value payments by implementing PRISM system and its success is evident as it is not only used by institutions but also by high value customers.

With the growing landscape of e-banking worldwide, the probability of cyber attacks has also increased. In 2015, there were 3 billion digital users and it is estimated that network traffic will be more than double from 2015 to 2019¹⁹³. Accordingly, routes for exploitation and disruption will also augment. It is clear that the risks are on the rise and a growing cause of concern to the industry and regulators alike. Recent episode of cyber heist on Bangladesh bank has provoked the regulators and financial institutions globally to ramp up their efforts against cyber threats. SBP is aware of the recent cyber-attacks on various financial institutions and has reviewed its operational set-up and system security infrastructure for cross border payments. Adequate measures have already been taken to secure the SBP systems.

SBP has issued regulations¹⁹⁴ for security of internet banking that sets minimum benchmarks for financial institutions requiring the assessment of

risks and implementing internal controls and security measures. Further, SBP is also working on other aspects like drafting regulations on card security etc.

Along with underlying risks, FMI also faces many challenges related to infrastructure and market discipline. Taking a stock of all these risks and challenges, SBP has remained engaged with a number of important domestic and international regulatory initiatives relevant to its mandate of payment systems and related infrastructure. Major developments in this connection include¹⁹⁵:

- Real Time Gross Settlement System (RTGS) implementation and encouraging Financial Institutions to implement Straight Through Processing (STP)
- Enhancing access of PRISM for Microfinance Banks
- Interoperability of ATM Switches
- Branchless Banking Regulations
- Collaborative launching of Pakistan Remittance Initiative (PRI)
- Supporting government initiated social safety nets such as Benazir Income Support Program (BISP) by waving off inter switch fee.
- IBAN standard adoption.
- Introduction of cheque layout and security standards.
- Introduction of Guidelines on Standardization of Payment Orders (POs) and Demand Drafts (DDs),
- Introduction of domestic payment scheme i.e. PayPak.

In order to establish an environment conducive for competition and discipline among the payment

¹⁹³https://www.ecb.europa.eu/press/key/date/2016/html/sp160113_1.en.html

¹⁹⁴ <http://www.sbp.org.pk/psd/2015/C3-Annexure-A.pdf>

¹⁹⁵ Payment systems review 2014-15- PSD-SBP
<http://sbpweb/payment/pdf/FY/FiscalYear-2014-15.pdf>

system stakeholders, SBP has issued Rules for Payment System Operators (PSOs) and Payment System Providers (PSPs) in 2014. One of the objectives of these Rules is to encourage the participation of non bank entities in payment industry to provide new products and services. Under these Rules, existing and new Payment System Operators/institutions would come under a formal regulatory ambit.

Payment System Oversight...

Payment system oversight is a critical function of a central bank which is carried out by developing regulatory framework, effectively monitoring the existing systems, ensuring compliance of systems with best domestic laws/regulations and best international practices and promoting cost effective e-banking technologies and cross-border connectivity in a safe way.

With the growing concern about financial stability, the role of central banks oversight of payment and settlement system has gained immense attention as one of the key policy objectives. The scope of oversight has broadened multifold in response to more direct and active role of the private sector in providing payment and settlement systems.

Furthermore, other oversight demanding factors include significantly large increase in the value of transfers cleared and settled, centralized channeling of activities through smaller number of key systems, and enhanced technological interconnectedness of many systems. Besides ensuring efficiency with safety, payment system oversight helps in maintaining public confidence on money as a mean of exchange and performing the monetary policy in smooth and efficient way.

Quite cognizant of the importance of payment system oversight, CPMI introduced Principles of Financial Market Infrastructure (PFMI) **(See Box**

8.1). These standards stress upon that FMIs be more resilient to financial crises, particularly, the participant defaults to minimize likelihood of systemic risk. Importantly, PFMI also set forth responsibilities of central banks, market regulators and other relevant authorities for FMI related to the regulation, supervision and oversight of FMI. These responsibilities highlight that relevant authority;

- should have adequate powers and resources to develop regulation, supervise and to carry out oversight,
- should clearly define and disclose oversight policies,
- should apply CPMI-IOSCO principles,
- should cooperate with each other, both domestically and internationally, as appropriate, in promoting the safety and efficiency of FMIs

In Pakistan, SBP conducts the regulatory oversight of Payment System through a well established legal and regulatory framework. In 2007, Payment System and Electronic Fund Transfer Act was passed which empowers SBP to conduct oversight of payment system to ensure its safety, integrity, efficiency or reliability. The Act covers all areas related to payment system including RTGS, payment instruments, clearing, and electronic fund transfers, e-banking / ATMs, fines and penalties, etc.

Way Forward...

In the backdrop of ever evolving challenges and risks, efforts are being made to protect all FMI stakeholders. SBP has given guidance to banking industry on various aspects like efficiency and automation of payment systems. In the same vein, regulations for Electronic Funds Transfers are also under considerations at SBP which shall help in achieving the stable and uninterrupted payment system structure in the country.

On the part of PRISM participants, core banking and PRISM systems are not integrated, thus requiring manual feeding of the payment instructions which is inefficient and error prone. In order to improve efficiency and minimize errors in payment processing, SBP has instructed the participants of PRISM to implement “Straight Through Processing (STP)”. It ensures automated processing of transactions through PRISM system by integrating it with their core banking systems.

Designation and oversight of payment system is important and in this realization, SBP is working on the framework of payment system oversight, which is in line with the related international best practices including CPMI & IOSCO supervisory & oversight principles.

Cybercrime risks emanating from the ever rising landscape of e-banking requires due attention of all market players as well as regulators. To circumvent cyber related risks, cyber resilience mechanism needs to be formulated and executed. Proactive steps are required to be taken on account of improved legislation, market awareness and program formulation to counter the cyber related risks. Part of this actualization has been translated into the legislation and approval of law on cyber crime titled as “Prevention of Electronic Crime Act 2015” by National Assembly of Pakistan. Enforcement of this law will extend the legal shelter for the market players of the industry against the cyber crimes.

In relation to global recognition on cyber threats, it is pertinent to mention that international “Committee on Payments and Market Infrastructures” (CPMI) and the “Board of the International Organization of Securities Commissions” (IOSCO) have joined their efforts in

developing the **Guidance on cyber resilience for financial market infrastructures**¹⁹⁶.

¹⁹⁶ CPMI-IOSCO consultative paper "Guidance on cyber resilience for financial market infrastructures", November 2015, <https://www.bis.org/press/p151124.htm>

Box 8.1
CPMI & IOSCO Supervisory & Oversight Principles for FMIs¹⁹⁷:

Committee on Payment and Market Infrastructure (CPMI) and Technical Committee of the International Organization of Securities Commissions (IOSCO) have jointly published 24 principles for financial market infrastructures (FMIs). FMIs are systemically important payment systems, securities settlement systems, central securities depositories, central counter parties and trade repositories. Some of the principles are applicable to all types of FMIs, while most of the principles are only relevant for specific FMIs. Key issues covered by the principles encompass financial risk, participant default rules and organization. A brief overview of the principles is listed below:

1. **Legal basis:** An FMI should have a well-founded, clear, transparent, and enforceable legal basis for each material aspect of its activities in all relevant jurisdictions.
2. **Governance:** An FMI should have clear and transparent governance arrangements aimed to promote the safety and efficiency of the FMI.
3. **Framework for the comprehensive management of risks:** An FMI should have a robust and overarching risk management framework for managing legal, credit, liquidity, operational, and other risks.
4. **Credit risk:** An FMI should measure, monitor, and manage its credit exposures to participants and those arising from its payment, clearing, and settlement processes.
5. **Collateral:** An FMI that requires collateral to manage its or its participants' credit exposure should accept collateral with low credit, liquidity, and market risks.
6. **Margin:** A central counter parties should cover its credit exposures to its participants for all products through an effective margin system that is risk-based and regularly reviewed.
7. **Liquidity risk:** An FMI should effectively measure, monitor, and manage its liquidity risk. An FMI should maintain sufficient liquid resources in all relevant currencies.
8. **Settlement finality:** An FMI should provide clear and certain final settlement, at a minimum by the end of the value date. Where necessary or preferable, an FMI should provide final settlement intraday or in real time.
9. **Money settlement:** An FMI should conduct its money settlements in central bank money where practical and available. If central bank money is not used, an FMI should minimize and strictly control the credit and liquidity risk arising from the use of commercial bank money.
10. **Physical deliveries:** An FMI should clearly state its obligations with respect to the physical deliveries and should identify, monitor, and manage the associated risks.
11. **Central securities depositories (CSDs):** A CSD should have appropriate rules and procedures to help ensure the integrity of securities issues.
12. **Exchange-of-value settlement systems:** Sometimes FMIs settle transactions that involve the settlement of two linked obligations. Settlement of one obligation should take place if, and only if, the associated liability is settled. This is called "delivery versus delivery" in foreign exchange settlement and "delivery versus payment" in securities settlement.
13. **Participant-default rules and procedures:** An FMI should have effective and clearly defined rules and procedures to manage a participant default.
14. **Segregation and portability:** This principle concerns the protection of CCP members' customers. In the case of a member default, the member's customer should be able to move their positions and the relevant collateral to an account in another institution.
15. **General business risk:** An FMI should identify, monitor, and manage its general business risk.
16. **Custody and investment risks:** An FMI should safeguard its own and its participants' assets and minimize the risk of loss on and delay in access to these assets.

¹⁹⁷ Committee on Payment and Settlement Systems, (2012). "Principles for Financial Market Infrastructure", Bank of International Settlementment.

17. **Operational risk:** An FMI should identify the plausible sources of operational risk and mitigate their impact through the use of appropriate systems, policies, procedures, and controls.
18. **Access and participation requirements:** An FMI should have objective, risk-based, and publicly disclosed criteria for participation, which permit fair and open access.
19. **Tiered participation arrangements:** An FMI should identify, monitor, and manage the material risks to the FMI arising from tiered participation arrangements.
20. **FMI links:** An FMI that establishes a link with one or more FMIs should identify, monitor, and manage link-related risks.
21. **Efficiency and effectiveness:** An FMI should be efficient and effective in meeting the requirements of its participants and the markets it serves.
22. **Communication procedures and standards:** An FMI should use, or at a minimum accommodate, relevant internationally accepted communication procedures and standards for communication
23. **Disclosure of rules, key procedures, and market data:** An FMI should have clear and comprehensive rules and procedures and should provide sufficient information to participants to have an exact understanding of the risks and related costs.
24. **Disclosure of market data by trade repositories:** A trade repository should provide timely and accurate data to relevant authorities and the public in line with their respective needs.

Annexure: A

