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PAYMENTS AND SECURITIES SETTLEMENT INITIATIVE

PAYMENTS AND SECURITIES SETTLEMENT SYSTEMS IN PAKISTAN

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FOREWORD

In 2008, the World Bank launched the South Asia Payments and Securities Settlement Initiative (SAPI), following a high-level mandate from the South Asia (SA) Central Banks' Deputy Governors (Colombo Meeting, July 2007), confirmed by subsequent meetings of the SA Governors. The SAPI, which is funded by FIRST initiative, builds on the successful experience of other regional initiatives, such as the Western Hemisphere Payments and Securities Clearance and Settlement Initiative (WHI) in the Latin American and Caribbean region, the Commonwealth of Independent States Payments and Securities Settlement Initiative (CISPI), and the initiatives for the Arab Region and the Southern Africa Development Community.

The SAPI objective is to describe and assess the payments and securities settlement systems of the countries of South Asia with a view to identifying possible improvement measures in their safety, efficiency and integrity.

The long-term goal of the initiative is to build institutional capacity within the region in order to sustain the continued development of payment and securities settlement systems.

To assure quality and effectiveness, the SAPI includes two important elements. First, all studies are conducted with the active participation of country officials and the project builds on the existing work being undertaken in the respective countries. Second, the initiative draws on international and national expertise to provide guidance, advice and alternatives to current practices.

An important component of the initiative is the involvement of international experts from the Bank for International Settlements (BIS) and from the Committee on Payment and Settlement Systems (CPSS) central banks through the International Advisory Council (IAC). The Swiss National Bank, the National Bank of Belgium and the Hong Kong Monetary Authority have already joined the IAC. Other central banks, securities commissions and international organizations are expected to join the IAC over the course of the program.

The SAPI initiative is undertaking a number of activities. These include: the preparation of public reports containing an in-depth description of each country's payments, securities clearing and settlement systems, and remittance service arrangements; the delivery of recommendations reports to country authorities on a confidential basis; the organization of workshops focusing on issues of particular interest; and the promotion of working groups to ensure a continuation of the project activity.

This report, *Payments and Securities Settlement Systems in Pakistan,* is the first of the public reports in the SAPI series and was prepared with the active support of the State Bank of Pakistan.

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ABBREVIATIONS AND ACRONYMS

ACU	Asian Clearing Union
AD	Authorized Dealer
AML	Anti-Money Laundering
ATM	Automated Teller Machine
BCO	Banking Companies Ordinance
BCP	Business Continuity Plan
BIS	Bank for International Settlements
BPD	Banking Policy Department
BSD	Banking Surveillance Department
BSS	Banking Sector Strategy
BTB	Broker to Broker
B2B	Business-to-Business
CAR	Capital Adequacy Ratio
CDC	Central Depository Company
CDS	Central Depository System
CFS	Continuous Funding Settlement
CFT	Combating the Financing of Terrorism
CISPI	Commonwealth of Independent States Payments and Securities Settlement Initiative
CM	Clearing Member
CPSIPS	Core Principles for Systemically Important Payment Systems
CPSS	Committee on Payment and Settlement Systems
CRR	Cash Reserve Requirement
CSD	Central Securities Depository
DFI	Development Finance Institution
DVP	Delivery versus Payment
EC	Exchange Company
EFTPOS	Electronic Funds Transfer at the Point of Sale
EMV	Europay, MasterCard, VISA
FATF	Financial Action Task Force
FERA	Foreign Exchange Regulations Act, 1947
FIFO	First-In-First-Out
FIRST	Financial Sector Reform and Strengthening Initiative
FMAP	Financial Markets Association of Pakistan
FX	Foreign Exchange
GCC	Gulf Cooperation Council
GDP	Gross Domestic Product
IAC	International Advisory Council
ID	Identity Document
IDS	Institutional Delivery System
ILF	Intraday Liquidity Facility
IMF	International Monetary Fund
IPO	Initial Public Offering
ISIN	International Securities Identification Number
IT	Information Technology
IVR	Integrated Voice Response
KATS	Karachi Automated Trading System
KSE	Karachi Stock Exchange
KYC	Know Your Customer
MCR	Minimum Capital Requirement
MF	Margin Financing
MO	Money Order
MoU	Memorandum of Understanding
MRTB	Market-related Treasury Bill
MTB	Market Treasury Bill
MtM	Marked to Market
MTO	Money Transfer Operator

NBFC	Non-Banking Finance Company
NBFI	Non-Bank Financial Institution
NBP	National Bank of Pakistan
NCC	National Clearing Company of Pakistan Limited
NCSS	National Clearing and Settlement System
NIFT	National Institutional Facilitation Technologies
NPL	Non-performing Loan
NSS	National Saving Scheme
OMO	Open Market Operation
OTC	Over the Counter
PB	Policy Board (Securities and Exchange Commission of Pakistan)
PBA	Pakistan Banks' Association
PIB	Pakistan Investment Bond
PKI	Public Key Infrastructure
PKR	Pakistani Rupee
PO	Postal Order
POS	Point of Sale
PRI	Pakistan Remittance Initiative
PRISM	Pakistan Real Time Interbank Settlement Mechanism
PSD	Payment Systems Department
PSEFT	Payment System and Electronic Fund Transfer (Act)
PVP	Payment versus Payment
P2B	Person-to-Business
P2P	Person-to-Person
ROSC	Report on the Observance of Standards and Codes
RSA	Rivest, Shamir and Adleman
RTGS	Real Time Gross Settlement
RTOB	Real Time Online Banking Transaction
SA	South Asia
SBA	Stand-by Arrangement
SAPI	South Asia Payment and Securities Settlement Initiative
SBP	State Bank of Pakistan
SBP Act	State Bank of Pakistan Act, 1956
SBP BSC	SBP Banking Services Corporation
SBP CSD	SBP Central Securities Depository
SECP	Securities & Exchange Commission of Pakistan
SGLA	Subsidiary General Ledger Account
SLR	Statutory Liquid Reserve requirement
SML	Securities Markets Law
SMS	Short Message Service
SRO	Self-Regulatory Organization
STP	Straight-Through Processing
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TFC	Term Finance Certificate
UIN	Unique Identification Number
VPN	Virtual Private Network
VPS	Voluntary Pension System
WB	World Bank
WHI	Western Hemisphere Payments and Securities Clearance and Settlement Initiative

CHAPTER 1

ECONOMIC AND FINANCIAL MARKET OVERVIEW

1.1 OVERVIEW OF RECENT REFORMS

Economic developments in Pakistan during the last decade have—to a significant extent—been influenced by the Government's Program[1] for poverty reduction and the development of markets and the real economy.

Following the liberalization of markets and the implementation of economic reforms, the following developments in the economic and social sector have been identified:

- High gross domestic product (GDP) growth resulting from output and sales growth;
- Monetary stability;
- Developments of money and securities markets;
- Improvements in the standard of living and poverty reduction (based on economic growth);
- Development and reinforcement of the banking sector and enhancement of its role in the social and economic development of the country.

However, the economic development slowed down in 2008 and 2009, as the macroeconomic situation deteriorated significantly owing to adverse security developments, large price increase of some commodities such as oil and food, global financial turmoil, and national political and security issues.

1 *Poverty Reduction Strategy Paper: Government of Pakistan,* 2003.

1.2 MACROECONOMIC BACKGROUND

In the last decade, Pakistan's economy witnessed a major economic transformation. The country's real GDP increased from USD 60 billion in FY01 to USD 170 billion in FY08,[2] with per capita income rising from under USD 500 to over USD 1,000. During the same period (FY01 to FY08), the volume of international trade increased from about USD 20 billion to nearly USD 60 billion. For most of this period, the Pakistani economy grew quite strongly and registered a real GDP growth of more than 7 percent per year. Buoyant output growth, low inflation, and the government's social policies contributed to poverty reduction.

This strong macroeconomic performance resulted from the implementation of a series of important structural reforms. In the early 2000s, the government expanded the role of markets in the economy, privatized a number of large state-owned enterprises, established market-based regulatory bodies, and took steps to reduce the cost of doing business in Pakistan.

The macroeconomic situation, however, deteriorated in 2008. Specifically, real GDP growth slowed to 5.8 percent in FY08 (6.8 percent in FY07) reflecting weaker performance of the agricultural and manufacturing sectors. Headline CPI 12-month inflation rose to 25 percent in October 2008, with core inflation (excluding energy

2 In Pakistan, fiscal year starts on July 1st. For example, FY08 started in July 2007 and ended in June 2008.

and food) increasing to 18 percent. The external current account deficit widened to about USD 14 billion (8.5 percent of GDP) in FY08. The growth of exports and workers' remittances recovered, but total imports rose by more than 30 percent owing to an increase of USD 4 billion (2.5 percent of GDP) in the value of oil imports and strong aggregate demand growth. The surplus in the financial account of the balance of payments declined to USD 7.7 billion, from USD 10.1 billion in FY07, which led to 40 percent decline in the gross international reserves of the State Bank of Pakistan (SBP) to USD 8.6 billion at end-June 2008. By then, the impact of the global crisis had also hit the economy through the contagion channels of trade and capital flows, as was the case for Asia in general. Reserves dwindled further to USD 3.4 billion (less than one month of imports) as of end-October 2008. The weakening of the economic conditions also led to turbulence in the financial markets resulting in severe liquidity shortages in both the money and foreign exchange markets.

The fiscal deficit (excluding grants) is estimated to have risen from 4.3 percent in FY07 to 7.4 percent of GDP in FY08 mainly because of a substantial increase in energy and food subsidies (in a context of rising international prices that were not passed through to consumers), higher than envisaged interest payments, and additional security-related expenditures. The deficit was largely covered through SBP financing.

All these developments had an adverse impact on the country's GDP growth, which declined to 2.0 percent in FY09.

In these circumstances, the SBP took a number of policy measures. To contain inflation, the SBP increased its policy rate in several steps and took corrective actions to ease the liquidity conditions in the financial markets. Later on, when towards the end of 2008, the economy started to pick a positive turn and the outlook of the economy appeared encouraging, the SBP reviewed its policy and decided not to continue with the further tightening of monetary policy.

The Government agreed on a macroeconomic stabilization program which was jointly implemented by the Government and the SBP from November 2009 onwards with the support of the IMF Stand-by-Arrangement (SBA). Implementation of the SBA and reforms undertaken by the SBP resulted in an improvement in the macroeconomic situation in the first quarter of 2009. As a consequence, inflation declined substantially, partly benefiting from a sharp decline in international prices. The fiscal deficit and external current account deficit had improved significantly by the end of FY09. Today, foreign exchange reserves have reached a decent level and confidence in the economy has improved.

1.3 FINANCIAL SECTOR

The current structure of the financial sector in Pakistan is the result of several policy shifts and developments. Prior to 1971, the primary focus of the governments was on developing commercial banks in the private sector and creating development institutions backed by government. The private sector development, however, almost clogged during the period 1971–1990, owing to the nationalization policy of the government. During this period, the banking sector came under the government's control. Since 1990s, the government has followed more liberal and market-based reforms.

The financial sector in Pakistan is dominated by banks. According to the SBP Financial Stability Review 2007–2008, as of end-June 2008 banks in Pakistan owned 72 percent of the total assets of the financial sector. As of June 2009, there were 36 commercial banks, 4 specialized banks, 7 Development Finance Institutions (DFIs), and 8 microfinance banks. The non-bank financial sector consisted of 11 leasing companies, 9 investment banks, 2 housing finance companies, 3 venture capital companies, and 102 mutual funds. In addition, there were 27 Modaraba and 45 insurance companies in Pakistan.

TABLE 1: FINANCIAL SOUNDNESS INDICATORS FOR THE BANKING SYSTEM, 2005–2008

Indicator	December 2005	December 2006	December 2007	June 2008
Capital adequacy				
Regulatory capital to risk-weighted assets	11.3	12.5	13.2	12.1
Asset composition and quality				
Provisions to NPLs	76.7	66.5	75.0	75.0
NPLs net of provisions to capital	14.3	13.5	8.3	10.2
Earnings and profitability				
Return on assets (after tax)	1.9	2.1	1.5	1.7
Return on equity (after tax)	25.8	24.2	15.5	16.7
Liquidity				
Liquid assets to total assets	33.7	32.0	33.6	31.6

Source: Pakistani authorities (Pakistan Request for Stand-By Agreement, November 2008)

1.3.1 Recent Performance of the Banking Sector

Over the last 10 years, the Pakistani banking system has gradually evolved from a state-owned system to a predominantly private sector system. This has been largely due to the privatization program of the Government of Pakistan. The liberalization of the financial markets, which resulted in a number of mergers and acquisitions, was another driving force behind the reshaping of the banking system.

The scope of consolidation through mergers and acquisitions has not been limited to the banking sector, but has been much broader, incorporating the entire financial sector. The mergers among banks and Non-Banking Finance Companies (NBFCs) were further accelerated by the raising of regulatory Minimum Capital Requirements (MCRs) for banks and certain tax incentives offered by the government in this regard. Over the last 7 years, the SBP processed 10 acquisition and 40 merger transactions. Most of the transactions were mergers of investment banks with commercial banks, while the others involved mergers of DFIs/leasing companies with commercial banks. Foreign participation in both ownership and management of the banks increased during the last few years. As a result of the restructuring of the Pakistani banking sector, three of the four largest state-owned banks were privatized.

The National Bank of Pakistan—majority state-owned—is the largest bank in Pakistan in terms of assets and deposits. Other major banks are HABIB Bank Ltd, United Bank Ltd and MCB Bank. The four largest banks jointly constituted about 45 percent of total assets and 47 percent of total deposits of the nation's banking system as of September 2008. Second-tier banks operate in major cities and are mostly regional. The National Bank of Pakistan, HABIB Bank Ltd and United Bank also have operations in Europe and the Middle East.

Foreign banks having a global Tier I paid up capital of USD 5 billion, or banks from regional groups of which Pakistan is a member, can operate in Pakistan by opening a branch, or as a fully owned locally incorporated subsidiary. Among the commercial banks there are 6 branches of foreign banks and two large foreign banks that have established local subsidiaries. Almost half the assets of banks are now owned by foreign banks that are introducing innovation and technological improvements.

In general, banks in Pakistan are well capitalized, profitable and liquid (see Table 1).

Political instability and the deterioration of the global economic environment in 2008, however, resulted in a

worsening performance of the banking sector. Some small and mid-sized banks have experienced serious liquidity problems in 2008 because of deposit withdrawals, which prompted the authorities to reduce the cash reserve requirement by 4 percentage points in two steps during October–November 2008 and to broaden the range of assets that can be used to meet the statutory liquidity requirement. The SBP also facilitated mergers of four small banks with sound banks. These policy initiatives resulted in improvement of the situation over the next couple of months, and by the end of March 2009 all banks were comfortably compliant with statutory liquidity requirements. Despite the negative influence of economic slowdown on banking activities (such as a sharp deceleration in private sector credit, weakening deposit growth, deterioration in asset quality, and losses in equity investments) banks remained adequately capitalized and were able to post a profit of Pakistani Rupee (PKR) 43 billion for 2008.

The State Bank of Pakistan has been playing a leading role in strengthening the regulatory framework for banking in the country. The central bank's policies, regulations and supervision systems have been substantially transformed, thereby bringing the SBP regulatory and supervisory framework in line with the international best practices and norms. This transformation of the central bank was supported by the development of capacities and induction of highly qualified cadre of staff that has been trained abroad and in-house. Basel II has been implemented in Pakistan with standardized approaches for Credit and Market Risk and Basic Indicator/Standardized approach for operational risk from January 1st, 2008. The SBP is planning to gradually enhance capital requirements for banks and DFIs within the next 5 years (see also section 2.5.3).

In 2008, the SBP formulated and published a 10-year strategy for guiding banking sector reforms. The Banking Sector Strategy (BSS) is centered on reforms involving the SBP and the banking sector, as well as reforms which the SBP has the power and resources to implement or substantially influence. The BBS strategy includes, among other priorities, the development of the financial infrastructure, especially payment systems.

1.4 CAPITAL MARKETS

Capital markets followed a similar path to the banking sector developments described above. In the initial phase of the development of the securities market, prior to the 1990s, the government, federal as well as provincial, used to finance its fiscal deficit through borrowing directly from the SBP. Companies were predominantly state owned and there was no scope for the functioning of an efficient securities market. The post-1990 era was marked by liberal and market based economic reforms, which resulted in the gradual development of equities and fixed income securities markets in Pakistan.

During the five-year period 2004–2008, the market reached its best performance. The overall volume of shares traded at the Karachi Stock Exchange (KSE) amounted to 63.4 billion in FY08. During the last year of this period, however, financial market indicators deteriorated. After climbing to new record highs by end-April 2008, the Karachi KSE-100 index dropped by one third, prompting the Karachi Stock Exchange Board to impose a floor on the decline of all stock prices on August 27, 2008. The price floor was subsequently lifted in December 2008. Following the removal of the price floor, the stock market witnessed an outflow of foreign portfolio investment and this, coupled with a planned phase out of the Continuous Funding Settlement (CFS) market, as approved by the Securities & Exchange Commission of Pakistan (SECP), along with other factors, resulted in a sharp decline in stock markets and the KSE-100 Index went down as low as 4,815 points. Since then, the improvement in some key economic indicators such as twin deficit, declining inflation trend, relaxation of monetary policy, improvement of foreign currency reserves along with strong fundamental base of companies has helped the recovery of stock markets. The KSE-100 Index increased by 12 percent from March to end-June 2009.

As at end-December 2009, there were 651 companies listed on the stock exchange with registered capital amounting to PKR 814.5 billion. In 2009, the main types of instruments traded in the stock exchange markets were equities, corporate debt securities and futures contracts.

The capital market of Pakistan has a triangular foundation comprising the three stock exchanges, namely the KSE, the Lahore Stock Exchange and the Islamabad Stock Exchange, the Central Depository Company (CDC), and the National Clearing Company of Pakistan Ltd (NCC). There is also an Over the Counter (OTC) market in Pakistan.

The SECP, a financially independent institution, established under the Act for the establishment of the Securities and Exchange Commission of Pakistan, No. XLII of 1997, is the regulator of the securities market in Pakistan. The SECP's main goal is to promote the development of a robust corporate sector, protect investors, as well as mitigate systemic risk by promoting a sound and efficient capital market in Pakistan.

The SECP is overseen by the Securities and Exchange Policy Board (Policy Board), which is appointed by the Federal Government under the Act for the establishment of the Securities and Exchange Commission of Pakistan, No. XLII of 1997. The Policy Board formulates policies in consultation with the SECP, provides guidance to the SECP, and advises the Government on matters relating to the securities market. A regulatory framework has been put in place to create conditions for the effective functioning and development of the securities market and is constantly improved.

Securities in Pakistan can be issued in both dematerialized and physical form. All securities traded in organized markets and settled in Central Securities Depositories (CSDs) are dematerialized or immobilized.

The government debt market has grown in recent years to meet the government's growing financing needs. However, the framework for issuing, pricing and trading government securities remains under-developed.

The Government of Pakistan issues three types of debt securities: Government of Pakistan Market Treasury Bills (MTBs), Pakistan Investment Bonds (PIBs) and Government of Pakistan Market-related Treasury Bills (MRTBs). The Government of Pakistan MRTBs are six months treasury bills, which are created when the Government borrows directly from the State Bank. In addition, in FY09 the government introduced domestic Shariah compliant government instrument (Ijara Sukuk bonds).

The placement of government securities is mostly performed via auction sales. The SBP is the Ministry of Finance's agent in the primary market for such securities. Rates are determined by the demand and supply. The rates of the Government of Pakistan MRTBs are determined on the basis of weighted average from the last six month Market Treasury Bill auctions. Only Primary Dealers (PDs) are allowed to participate in the auctions. The placement of government securities among individuals is performed through the PDs.

1.5 MAJOR TRENDS IN PAYMENT SYSTEMS

The payments system in Pakistan is characterized by the use of credit transfers for interbank large-value payments and a cheque-based system for customer payments. The usage of payment cards has increased considerably in Pakistan during the last years. Three types of payment cards are issued in Pakistan: debit cards, credit cards and Automated Teller Machine (ATM) only cards (for cash withdrawals at ATMs). Most of the retail payments, however, are cash based. The Pakistani Rupee (PKR) is the sole legal tender in the country.

The two major payment systems in the country are the Pakistan Real Time Interbank Settlement Mechanism (PRISM)—the large value payment system, and the National Institutional Facilitation Technologies (NIFT)—the retail cheque clearing system.

PRISM is the core element of the Pakistani national payment infrastructure. It was launched by the SBP on July 1st, 2008 as a fully automated Real Time Gross Settlement (RTGS) system. PRISM is designed to handle all large-value payments as well as government securities transactions in the country. The payment component of PRISM settles payments resulting from interbank money market, securities market transactions, foreign exchange transactions and net settlement positions of the cheque clearing. The second component of PRISM is a securities settlement system for government securities transactions resulting from sale/purchase of MTBs and PIBs in the primary and the secondary market. Because of its importance to the financial sector and the economy as a whole, PRISM is considered a systemically important payment system for Pakistan. The system is owned and operated by the SBP. During the first year of its operation (July 2008–June 2009), PRISM processed 236,412 transactions. The value of these transactions was PKR 62.2 trillion, which is 4.8 times the GDP for FY09.

NIFT is an important part of the payment infrastructure in Pakistan. It is a clearinghouse that is owned by commercial banks and provides for centralized multilateral netting of cheques. Although the bulk of the cheques cleared through NIFT are of small value, there are still large value items processed through this system. In 2007, NIFT clearing operations were changed from decentralized processing to centralized multilateral netting on a countrywide basis. Under the new arrangements, the NIFT Karachi office collects and consolidates data from all NIFT automated centers (14 local offices plus the Karachi office). The NIFT system, however, still requires physical exchange of cheques. During FY09, a total of 66.8 million transactions amounting to PKR 23,749 billion were cleared in NIFT.

There are four clearing sessions a day in NIFT. The net obligations arising from each clearing are sent to PRISM and settled through participants' accounts in central bank money. At that moment, the interbank settlement is considered final. Small value cheques are processed on T+1, while large-value payments are processed separately and cleared on the same day basis (T).

Electronic payment instruments and the related infrastructure have been expanding at a fast rate in Pakistan during the last 5 years. As of end-June 2009, the share of retail electronic payment transactions in the total of retail payments (excluding cash) reached 32.3 percent in terms of volume and 10 percent in terms of value. During FY09, the retail electronic payments grew by 28 percent in volume. For the same period, the growth in volume of paper-based payments was slower and accounted for 0.1 percent.

Electronic retail payments in Pakistan comprise various instruments and channels for payments such as debit, credit and ATM-only payment cards, Real Time Online Banking transactions (RTOBs), banking through Call Centre/Integrated Voice Response (IVR), internet and mobile banking.

The use of payment cards has been growing with a high rate. In June 2009, the number of payment cards reached 6.7 million. As of that date there were around 4,000 ATMs installed across Pakistan and more than 49,715 Point-of-Sale (POS) terminals installed with merchants in Pakistan were accepting payment cards as a form of payment for goods and services. Payment cards are issued by banks licensed by the SBP. There are two interoperable ATM card schemes (ATM switches) for payments with payment cards issued in Pakistan: *1Link* and *MNet.*

International remittances are significant in Pakistan and continue to show a rising trend. Banks, International Money Transfer Operators (MTOs) (e.g. Western Union, MoneyGram) and Exchange Companies (ECs) are the

main players in the market of remittances. The SBP in consultation with other stakeholders has taken a number of steps to promote the remittance business and to further enhance the flows of international remittances through the financial system. The efforts undertaken by the SBP have resulted in total remittances to reach historic high level of USD 7.8 billion in FY09, registering a growth of 21 percent over FY08. Another breakthrough related to the remittances was the launching of the Pakistan Remittance Initiative (PRI) by the Federal Government and the State Bank of Pakistan, which is expected to bring a fundamental change in the country's remittance service regime to boost and facilitate the flow of remittances sent to Pakistan by non-resident Pakistanis.

For cross-border payments, the SBP and most commercial banks use the SWIFT network with settlement being made through foreign correspondent banks.

1.6 MAJOR TRENDS IN SECURITIES SETTLEMENT SYSTEMS

The trading, clearing and settlement infrastructure for securities has been gradually modernized in Pakistan. The following institutions are involved in the clearing and settlement of securities: the National Clearing Company of Pakistan Limited (NCC), the Pakistan Central Depository Company (CDC), the SBP Central Securities Depository (SBP CSD), and commercial banks.

A National Clearing & Settlement System (NCSS) was fully implemented in 2004 as a single and centralized entity to replace the separate and individual Clearing Houses of the three stock exchanges (in Karachi, Lahore and Islamabad). The NCSS is managed by the NCC. The NCSS clears all book-entry securities that are registered in the Central Depository System (CDS).

The CDS is an electronic book-entry system for the registration and transfer of securities. It is operated by the CDC, which also acts as a custodian for corporate securities. In accordance with the legislation of Pakistan, all corporate securities registered in the CDS are dematerialized or immobilized. The cash leg of the transactions is executed through commercial banks (settlement banks approved by the NCSS), based on the clearing instructions from the NCSS on Delivery versus Payment (DVP) basis.[3]

All government securities are issued in dematerialized form and are registered in accounts with the central depository. The SBP is the operator of the securities settlement system and the central depository for government securities. Each bank holds government securities accounts with the SBP. Transactions are settled by book-entry. The system for settlement of government securities for both the primary and the secondary market transactions is part of PRISM and as such is integrated with the settlement of funds.

Transactions with government securities are settled on the same day basis (T). Transactions with corporate securities traded at the three stock exchanges and cleared in the NCSS are settled on T+2 and T+1 (for spot trades). Non-exchange transactions are registered for clearing in the NCSS based on the information provided by the seller and the buyer of securities.

The NCC and the CDC in cooperation with participating banks, Non-Bank Financial Institutions (NBFIs), and brokers have been working together to establish an efficient and transparent clearing and settlement for all types of securities. Efforts are ongoing at the NCC to introduce comprehensive risk management system and to implement securities lending and borrowing through the NCC. The NCC is also working with the stock exchanges to provide centralized clearing and settlement along with risk management of corporate debt securities.

3 See *Delivery versus Payment in Securities Settlement Systems,* the Committee on Payment and Settlement Systems of the Central Banks of the Group of Ten Countries of the Bank for International Settlements, September 1992. The report describes three DVP models.

Further strengthening of the oversight of the stock exchanges and the brokers is important. To this end, the SECP plans to continue enhancing market surveillance to detect insider trading and market manipulation, build an effective oversight program of the three stock exchanges, the NCC and the CDC, as well as improve monitoring and enforcement of compliance with the law by brokers. The introduction of a Unique Identification Number (UIN), by the NCC through centralized registration in the NCSS, for every person who holds shares and trades on the market provides a powerful tool for detecting market abuse. The SECP surveys trading in real time using state-of-the-art technology, and prohibition on insider trading was strengthened earlier this year. The stock exchanges are planning to adopt similar technology to replace their current manual systems for detecting market abuse.

CHAPTER 2
INSTITUTIONAL ASPECTS

2.1 GENERAL LEGAL FRAMEWORK

2.1.1 Payments

The legal framework related to payments, payment instruments and payment systems in Pakistan is comprised of laws and regulatory documents issued by the SBP.

The Payment System and Electronic Fund Transfer Act (PSEFT Act), 2007, frames the legal framework for the regulation of payment systems and electronic fund transfers in Pakistan. It provides standards for consumer protection and determines respective rights and liabilities of financial institutions and other payment service providers, their consumers and participants in payment systems. The Act establishes a sound legal basis for safe functioning of payment systems by dealing with a broad range of risk-related issues such as irrevocability of payments and settlement finality (Art. 21 and Art. 25), validity and enforceability of netting arrangements (Art. 25), and finality of settlement of government securities.

The payment system objectives and responsibilities of the SBP derive from the PSEFT Act. The SBP may by law designate a payment system or a payment instrument (Art. 4 and Art. 12) as subject to its control. The SBP can also issue rules, guidances, circulars, by-laws, standards or directions with respect to such system or instrument in pursuing its objectives to promote monetary stability and a sound financial structure (Art. 3). It may also establish and operate one or more RTGS systems. Art. 11 establishes requirements for the operator of a designated payment system.

Furthermore, Art. 18 gives the power to the SBP to "nominate one or more Clearing Houses to provide [...] services for a Payment System, [...] conduct audits and inspections", to require information in advance of any significant changes in relation to the payment system and to "make settlement rules". Finally, the Act gives regulatory power to the SBP with respect to Electronic Money Institutions and operators of retail payment schemes.

The Banking Companies Ordinance, 1962 (BCO), the State Bank of Pakistan Act, 1956 (SBP Act),[4] and the Banking Company Rules 1963, issued under the BCO (last amended in June, 2007) provide the main legal structure under which the banking system of Pakistan operates. Banking Companies are licensed under section 27 of BCO. Once licensed, banks are scheduled under section 37 (2) of the SBP Act after they meet strict requirements of capital adequacy, cash and liquid reserves maintenance, transactional record keeping, as well as upholding financial and managerial discipline. They are also required to establish internal control, internal audit and compliance systems. Banks are supervised and are required to follow the guidelines/rules/regulations issued by the SBP. Articles 35 to 39 provide the requirements for audits and rights for inspections of banks by the SBP. Art. 40 stipulates the responsibility of the SBP to monitor every banking company in Pakistan so as to ensure that it is compliant with the applicable statutory criteria and banking rules

4 Efforts are underway to revise the central bank law, the main goal being to better reflect the current functions, powers, and objectives of SPB. The draft law is being finalized.

and regulations. Art. 41 defines the powers of the SBP and Chapter III elaborates on the procedures for suspending of business and winding up of banking companies.

To enhance the effectiveness of the SBP enforcement powers, necessary amendments to the BCO have been drafted. These amendments aim at strengthening the SBP's ability to (i) change management in banks; (ii) impose losses on shareholders by writing down their capital; (iii) intervene and take ownership of banks; (iv) appoint administrators to operate banks; and (v) restructure banks.

In addition, the SBP also licenses microfinance banks under the Microfinance Institutions Ordinance (2000–2001) in terms of the licensing criteria for microfinance banks. Commercial banks are also allowed to undertake microfinance banking activities through a range of options for conducting the microfinance business. Furthermore, the SBP issues Regulations for Shariah Compliance in Islamic Banking Institutions. Under the prevalent legislative structure, the SBP also has supervisory responsibilities with respect to DFIs while the rest of the financial institutions are monitored by other authorities such as the Securities and Exchange Commission (see section 2.1.2).

In March 2008, the SBP issued Branchless Banking Regulations, with a view to encouraging innovation and increasing outreach of the banking system. The Regulations, which are applicable to all banks including Islamic and microfinance banks, define branchless banking activities as a delivery channel to offer banking services in a cost effective manner. The regulations also outline activities that constitute branchless banking; set out minimum standards of data and network security, as well as customer protection and risk management to be followed by banks desiring to offer mobile banking services. According to these regulations, only authorized financial institutions can provide branchless banking services.

The Operating Rules for Participation in Pakistan Real Time Inter Bank Settlement Mechanism (PRISM), issued by the SBP in March 2009,[5] govern the operation of the system and participants' conduct. The rules also contain provisions as regards financial and operational risk management, such as irrevocability and settlement finality of payments processed by the system, intraday liquidity provisions and access requirements. Several manuals have been issued and provided to participants in the system, such as the Manual for Operators of PRISM Terminals (Operator Work Place).

The SBP Banking Services Corporation (SBP BSC) is a SBP subsidiary, which has been established to carry out all operational functions and activities of the SBP, including maintenance of the accounts of the federal Government, provincial Governments, local Governments, other authorities, institutions, companies, corporations and of other banks and financial institutions. The SBP BSC's responsibilities are defined in the Ordinance to Provide for Establishment of SBP BSC.

The relevant legislation dealing with collateralized loans and repo transactions includes the State Bank of Pakistan Act, 1956 (Art 18. Power of Direct Discount), the PSEFT Act (Art. 22), and the Operating Rules for Participation in Pakistan Real Time Inter Bank Settlement Mechanism. The latter Rules define the procedures for extending overnight credit to participants in PRISM against collateral in the form of repo transactions. The list of eligible collateral includes government debt securities only.

The foreign exchange business in Pakistan is governed under the Foreign Exchange Regulations Act, 1947 (FERA). The Foreign Exchange Manual outlines the rules for the licensing and activities of Authorized Dealers (ADs) and ECs.

Other laws and regulations that are relevant to payments include:

5 The RTGS Rules have been drafted after seeking feedback from all the participants via Pakistan Bankers' Association and from relevant SBP departments.

- Electronic Transactions Ordinance, 2002 (LI of 2002);
- Company Ordinance, 1984;
- Prudential Regulations for Corporate/ Commercial banks, issued by the SBP;
- Memorandum of Understanding (MoU) between the SBP and NIFT.

2.1.2 Securities

The issuance of government securities in Pakistan is governed by the Public Debt Act, 1944, while the Companies Ordinance, 1984 and the Central Depositories Act, 1997 (XIX of 1997), govern the issuance of corporate securities.

The Securities and Exchange Commission of Pakistan Act, 1997, defines the scope of responsibilities and activities of the Securities and Exchange Commission of Pakistan. The SECP is entrusted with a wide range of supervisory responsibilities, including the corporate sector, public companies, stock exchanges, clearing companies and securities depositories, as well as the insurance sector, NBFCs, private pension funds and housing finance.

The law stipulates that NBFCs (leasing companies, investment banks, discount houses, housing finance companies, venture capital companies, mutual funds), Modarabas,[6] Stock Exchange and Insurance Companies fall within legal ambit of the Securities and Exchange Commission of Pakistan. A MoU between the SBP and the SECP is the basis for information sharing and other issues relating to the cooperative approach in supervising and regulating financial institutions.

The Central Depository Act, 1997, provides the basic principles for the functioning of CSDs. Securities that are traded on the stock exchange market, as well as those traded on the OTC market and reported to the securities exchange, are registered in dematerialized form in the CDS of the Central Depository Company. Art 4 of the Central Depository Act, 1997, stipulates that any security issued or registered in the central depository should be kept as book-entry securities. The same article defines the account structure, transfer of book-entry securities, and pledge of such book-entry securities. The title to any book-entry securities entered in an account or sub-account shall vest in the account holder and sub-account holder respectively. The Central Depository Companies (Establishment and Regulation) Rules, 1997, regulate, among other issues, the lending and borrowing of securities to support the settlement of market transaction. The CSD and the NCC have been working together to implement securities lending and borrowing through the NCC.

According to the PSEFT Act, 2007, government securities are registered and transferred in book entry form. "A Payment System" in the PSEFT Act is broadly defined to include not only systems for transfer of funds but also "clearing, settlement or transfer of Book Entry Government Securities". Therefore, most of the provisions of the law related to fund transfer systems are also applicable and valid for clearing and settlement of government securities.

The Central Depository Act creates a two-tier depository structure for corporate securities. Participants (in the stock exchange) are allowed to hold sub-accounts on behalf of their customers and to order transfer of securities between accounts on their behalf. The Company Ordinance Act regulates the securities custody/nominee holding activities of financial institutions.

The Clearing House Companies (Registration and Regulation) Rules, 2005, define the requirements for the registration of a clearing house, its activities as well as the establishment of a guarantee clearing and settlement fund.

6 Modaraba represents a form of partnership where one party provides the funds while the other party provides expertise and management. Any profits accrued are shared between the two parties on a preagreed basis, whereas the loss is borne by the provider of the capital. The Modaraba companies are regulated through the Modaraba Companies &Modarabas (Flotation & Control) Ordinance 1980.

The Securities and Exchange Ordinance, 1969, empowers the recognized stock exchanges, clearing houses and central depositories to make regulations with the prior approval of Securities and Exchange Commission of Pakistan.

Other legal acts regulating securities clearing and settlement include:

- The Non-Banking Finance Companies (Establishment and Regulation) Rules, 2003;
- The National Clearing Company of Pakistan Limited Regulations, 2003;
- NCSS Procedures 2003;
- Operating Rules for Participation in Pakistan Real Time Inter Bank Settlement Mechanism (PRISM);
- Financial Institutions (Recovery of Finances) Ordinance, 2001(XLVI of 2001).

In addition, the rights and obligations of participants in different payment and settlement systems are specified in bilateral or multilateral agreement between participants and system operators.

2.1.3 Derivatives

The Securities and Exchange Ordinance, 1969, defines the types of securities that may be issued and traded on the organized markets, including commodity and financial derivatives. Normative documents issued by the SECP with respect to trading and settlement of derivatives include the following:

- Regulations governing deliverable future contracts of the KSE, 2008;
- Regulations governing risk management of the KSE, 2008;
- Regulations Governing Cash Settled Futures Contracts' of the Exchange.

Furthermore, the National Clearing Company of Pakistan Limited Regulations, 2003, the NCSS Procedures, 2003, and the Rules and Procedures of the exchanges define the procedures and risk management mechanisms for trading, clearing and settlement of derivatives transactions.

Derivatives were first introduced in the Karachi Stock Exchange in 2003 as Deliverable Future Contracts and later on in 2007 in the form of Non-Deliverable Future Contracts. However, the trading of derivatives is very limited due to the absence of price discovery and convergence mechanics.

2.2 ROLE OF FINANCIAL INSTITUTIONS: PAYMENTS

2.2.1 Banking Sector

In accordance with the State Bank of Pakistan Act, the banking system of Pakistan is a two-tier system including the State Bank of Pakistan, commercial banks, specialized banks, DFIs, microfinance banks and Islamic banks. As of June 2009, the banking sector comprised 55 institutions, among which were 36 commercial banks (including 25 local private banks, 4 public sector commercial banks and 7 foreign banks), 4 specialized banks, 7 DFIs and 8 microfinance banks. Among the banks, there were 6 fully fledged Islamic banks, as at end of June 2009.

The SBP provides payment services to banks, to the federal and provincial Government Pakistan, the Treasury and some other public institutions.

Banks in Pakistan provide settlement and cash services to individuals and companies, including correspondent-banking. Banks also offer domestic and cross-border remittance services to the population. Furthermore, they provide depository services for the accounting and safe-keeping of securities. During the last few years, banks have been paying great attention to the expansion of services rendered to households and the enhancement of their quality and efficiency. New forms and channels of making

payments have been introduced, such as electronic banking, use of payment cards, and Internet services.

2.2.2 Other Institutions that Provide Payment Services

Non-bank institutions

Exchange Companies are specialized companies that provide Foreign Exchange (FX) and remittance services in Pakistan. The foreign exchange business of such companies is governed by the FERA (1947), the Foreign Exchange Manual and the FX Circulars issued by the Exchange Policy Department of the State Bank of Pakistan. As of end-September 2008, there were 24 Exchange Companies registered with the SBP. Other institutions that provide cross-border payment services are MTOs (such as Western Union, MoneyGram).

The newly adopted Branchless Banking Regulations (March 2008) allows so-called agents to intermediate payments between banks or telecom operators and customers with the objective of increasing the outreach of payment services to unbanked and rural communities.

Pakistan Post

The Pakistan Post plays a broad and varied role that goes beyond what is traditionally regarded as its core postal business. The Pakistan Post via its branches provides a secure and affordable mode to remit. The following types of payment-related services are offered to the general population:

- receiving money resources to make postal (telegraph) transfers, including international postal transfers;
- receiving money resources to make payments to other organizations (payments for utilities);
- paying money resources against postal (telegraph) transfers including international postal transfers;
- paying money resources received from over 190 countries/territories worldwide to Pakistan under a special agreement with Western Union.

Moreover, the Pakistan Post can offer the following financial services associated with servicing individuals:

- Selling life insurance contracts;
- Offering saving account services via the Pakistan Post Savings Bank.

2.3 ROLE OF FINANCIAL INSTITUTIONS: SECURITIES

2.3.1 Securities Market Participants

Professional securities market participants in Pakistan are engaged in a variety of activities. They can operate in the securities market on instruction and on behalf of their clients (broker activity), buy and sell securities on their own (dealer activity), act on instruction of an issuer in the process of primary sales of securities, provide asset management services and depository services.

The NBFCs established under the Companies Ordinance can provide securities market intermediation after obtaining a license from the SECP. The Non-Banking Finance Companies (Establishment and Regulation) Rules, 2003, allow NBFCs a diverse operational spectrum, including various business activities in the securities markets. As of September 2009, there were 56 NBFCs and 60 insurance companies, many of them offering securities market services.

Members of the stock exchanges in Pakistan can be individuals or corporate companies, which meet the criteria laid down in the Rules of the exchange and which have purchased a seat. To settle securities transactions, stock exchange members are required to become members of the NCC and the CDC.

In order to reduce risks in securities transactions, minimum capital and technical requirements to professional participants have been established in various regulations and rules of the securities market institutions. Such requirements have been developed to meet international standards and best practices.

2.3.2 Exchanges, Clearing Houses, Central Depositories

The infrastructure for corporate securities trading, clearing and settlement comprises three interconnected stock exchanges, the NCC, the CDC and settlement banks.

Corporate securities are traded at stock exchanges in Karachi, Lahore and Islamabad, where the Karachi Stock Exchange is the biggest and most liquid exchange. As of 31 December 2009, 651 companies were listed with market capitalization of PKR 2,706 billion. There were 165 active members of the KSE as of July 2008. The average daily turnover for year 2009 was 179.9 million shares with average daily trade value PKR 7.5 billion.

The following securities are traded at the stock exchanges in Pakistan: corporate shares, corporate bonds[7] and futures contracts. The OTC market transactions are agreed outside the exchanges and cleared in the NCSS.

The NCC was incorporated on July 3, 2001 to manage and operate the NCSS as a fully automated electronic settlement system. NCSS' live operations commenced in December 24, 2001. The company became fully operational in 2003-04 by inducting and handling clearing and settlement of all book-entry corporate securities. In March 2006, the NCC was registered under the Clearing House Companies (Registration and Regulations) Rules, 2005. As of September 2009 there were 421 active clearing members comprising 297 brokers and 124 non-broker clearing members.

7 Some corporate bonds termed as Term Finance Certificates (TFCs) are listed on the stock exchange but are not traded at the stock exchange.

The settlement of the payment leg of the securities transactions is executed through commercial banks (settlement banks), based on the clearing instructions from the NCSS on a DVP basis. For the OTC and free of payment transactions participants send settlement instructions directly to the CDC.

The CDC was incorporated in 1993 and became operational in 1997. With exponential growth in the Pakistani capital market resulting in manifold increase in trading volumes, the physical handling of paper certificates not only became laborious but also time consuming. The manual system was no longer feasible. It was in this perspective that CDC was incorporated to manage and operate the Central Depository System. The CDS is an electronic book entry system to record and transfer securities. An IBM -led consortium along with the management of the company implemented the CDS in Pakistan. The CDC offices at Lahore and Islamabad are connected to the head office through VSAT link. As of end-June 2009 there were 722 securities (issuers) registered with the CDC and 775 CDC members.

2.4 MARKET STRUCTURE AND REGULATION

Two agencies are responsible for the regulation and supervision of entities providing financial and payment services: the SBP and the SECP. The SBP is the sole regulator and supervisor of banks in Pakistan. It promotes the establishment and development of safe and efficient payment systems to serve interbank markets as well as retail payments in the country. In addition, the SBP is responsible for supervising all transactions in the foreign exchange, credit and money markets. Due to its responsibility for the money market, the SBP, and the Ministry of Finance, have jurisdiction over government securities.

The SECP is the regulator of the securities market. It was set up in pursuance of the Securities and Exchange Commission of Pakistan Act, 1997, as a financially independent

institution with the main goal of promoting the development of robust corporate sector, protecting investors and mitigating systemic risk by promoting sound and efficient capital market in Pakistan. Since 1999, the SECP mandate has expanded considerably. Initially, the institution was responsible for the regulation of corporate sector and capital markets (public companies, financial intermediaries, stock exchanges, clearing companies and securities depositories). Over time, the SECP has been given the power to license and regulate insurance sector, NBFCs, as well as pension funds and house financing. The Securities and Exchange Policy Board (Policy Board) is responsible for formulating policies in consultation with the SECP, to provide guidance to the SECP and to advise the Government on matters of the securities market.

In 2003, the SECP and the State Bank of Pakistan signed a MoU for close cooperation in supervising and regulating the financial sector. As the financial sector continues to develop in Pakistan, coordination between these entities will become increasingly important.

2.5 ROLE OF THE CENTRAL BANK

The SBP Act (1956) designates the SBP as the central bank of Pakistan. The law empowers the SBP "to regulate the monetary and credit system of Pakistan [...] with a view to securing monetary stability and fuller utilization of the country's productive resources". The head office of the SBP is located in Karachi.

The SBP responsibilities encompass issuing notes,[8] conducting monetary policy, maintaining the value of the national currency, supervising and regulating the banking industry, providing payment services, acting as a banker to the government and to banks, and acting as custodian for the country's foreign reserves. The governing body of the SBP is the Central Board of Directors, which formulates and monitors monetary and credit policy.

8 As from July 1st, 1948, the SBP took over the management of the national currency from the Reserve Bank of India.

The SBP works in close cooperation with the Ministry of Finance through the Co-ordination Board. The major responsibilities of the Co-ordination Board is the coordination of fiscal, monetary and exchange rate policies in the country and ensuring that these policies are consistent with the macro-economic targets of growth and inflation. The Board is chaired by the Federal Minister for Finance and comprises members from the Government and the SBP.

2.5.1 Monetary Policy and other Functions

The objective of monetary policy in Pakistan, as laid down in the SBP Act of 1956, is to achieve the targets of inflation and growth set annually by the government. In pursuit of this mandate, the SBP formulates the country's monetary policy consistently with these announced targets. Considering the economic and financial market structure in Pakistan, the SBP has for sometime pursued a monetary targeting regime with broad money supply (M2) as a nominal anchor to achieve the objective of controlling inflation without any prejudice to growth. The goal is to keep M2 close to its estimated demand level. The changes in monetary policy are signaled through adjustments in the policy discount rate (3-day repo rate).

Moreover, changes in the policy rate are complemented by appropriate liquidity management mainly through Open Market Operations (OMOs) and, if required, changes in the Cash Reserve Requirement (CRR) and Statutory Liquid Reserve requirement (SLR) are also made. As of end-June 2009, the CRR and SLR were 5 percent and 19 percent respectively. Over October-November 2009, the SLR was abolished for time liabilities of one year and higher tenor.

2.5.2 Involvement in the Payments System

The SBP is at the centre of the national payments system. It plays a major operational role as operator and owner of PRISM (the RTGS system). The SBP also operates the central depository for government securities (which is part of PRISM). The securities settlement system for government

securities facilitates electronic trading and settlement thus eliminating the manual processing of securities transactions. It reduces settlement risk by providing real-time settlement on a DVP basis (see also section 6).

The SBP provides safe settlement assets for all interbank payments settled through the RTGS system. All participants in PRISM are required to keep settlement fund accounts with the SBP.

The SBP is responsible for the regulation and oversight of all recognized payment systems and payment instruments in the country. As part of its oversight function, the SBP has been working continuously to ensure that the overseen systems comply with international standards and best practices.

The on-going projects for further improvements in payment systems in Pakistan include:

- The implementation of Intraday Liquidity Facilities (ILFs) and gridlock resolution mechanisms in the RTGS system aiming at reducing liquidity risk;
- The implementation of standards for cheque payment instruments;
- Further improvements in operational risk management and business continuity planning;
- The development and publishing the SBP Payment Systems Oversight Strategy;
- The creation of a National Payments Council.

In addition, the SBP has been encouraging the intensive use of efficient electronic payment instruments and channels, such as payment cards and mobile banking, through promoting a high level of standardization, schemes that allow straight-through-processing and the development of the infrastructure. This modernization of retail payment services is a complex task, as it involves extensive consultations with a multitude of different stakeholders. It is expected that the on-going reforms in the retail payment systems will take 2–3 years to be completed.

2.5.3 Banking Supervision

The SBP is in charge of the prudential supervision of banks. The SBP supervisory policies and practices are based on the Core Principles for Effective Banking Supervision issued by the Basel Committee on Banking Supervision. In recent years, the SBP has adopted a number of measures to make the banking supervision more efficient in order to establish a safe and sound banking system. In particular, the following changes and risk management tools have been implemented: rules for acquisitions and major investments of banks; market risk-related computations and capital charges; clearer definition of "connected or related parties"; requirements for banks to maintain information and management systems that allow for proper identification, monitoring, and collecting of country risks.

Circular No. 9 dated July 29, 2006 of the Banking Policy Department (BPD) introduced requirements for banks/DFIs to obtain prior approval in writing from the State Bank to purchase shares of a company that exceeds 5 percent of the paid-up capital of the company or 10 percent of the capital of the investee company, whichever is lower.

The market risk related amendment was implemented in Pakistan via the Banking Surveillance Department (BSD) Circular No. 12 of 2004 according to which banks were required to maintain capital against market risk as from December 31st, 2004.

In terms of Prudential Regulations for corporate/commercial banking, a definition of a Group has been introduced to denote persons, whether natural or juridical, who directly or via his dependent family members or its subsidiary have control (direct or indirect ownership) of more than one half of the voting powers of an enterprise or hold substantial ownership interest (beneficial shareholding of more that 25 percent) over the other.

The requirements for identification, monitoring and collecting of country and transfer risk were implemented via BSD Circular No. 3 of 2004 and banks were required to put in place a mechanism to assess and monitor the country risk within three months from the issuance of the Circular.

More recently, the strengthening of the consolidated supervision and estimation of credit risk concentrations have been in the focus of banking supervisors. Consolidated supervision is achieved through coordination between the SBP and the SECP under a MoU. The process of creating legal basis for consolidated supervision has started with amendments proposed to the Federal Government in the Banking Companies Ordinance, 1962. Once amendments are approved, the SBP would have the authority to carry out consolidated supervision as lead supervisor. As regards the cooperation with foreign supervisory authorities as per the requirement of the Committee on Payment and Settlement Systems (CPSS) of the Bank for International Settlements (BIS) Core Principles for Systemically Important Payment Systems (CPSIPS), the SBP has already taken an initiative in signing MoUs with 16 supervisory authorities of other countries especially with countries where Pakistani banks have established branches.

In addition, the SBP has been playing a leading role in promoting the development of Islamic banking in the country and monitoring of the associated risks.

Implementation of Basel II in Pakistan commenced on January 01, 2008. In this context, all banks/DFIs were required to implement the Standardized Approaches of Basel II from January 01, 2008. The SBP has decided that the transition to the Advanced Approaches of Basel II will be discretionary for all banks/DFIs and subject to prior written approval of the State Bank. Those institutions that plan to make a transition to the Advanced Approaches within the next five years, are required to submit their Action Plans to the BSD.

In order to further strengthen the solvency of individual banks and DFIs, in October 2008 the SBP decided to raise the MCRs as well as the Capital Adequacy Ratio (CAR) calculated as per Basel II. The minimum Paid up Capital requirements for all locally incorporated banks were raised to PKR 23 billion (net of losses) to be achieved in a phased manner until end-2013. DFIs were required to raise their paid up capital (free of losses) to PKR 5 billion by December 2008 and PKR 6 billion by December 2009. The required minimum CAR, on consolidated as well as on standalone basis, has been increased for banks and DFIs to 10 percent. Furthermore, all banks/DFIs are required to maintain variable CAR based on CAMELS-S Rating assigned by the State Bank to each bank and DFI.

To enhance the effectiveness of SBP enforcement powers, amendments to the Banking Companies Ordinance have been proposed. These amendments aim at strengthening the SBP's ability to (i) change management in banks; (ii) impose losses on shareholders by writing down their capital; (iii) intervene and take ownership of banks; (iv) appoint administrators to operate banks; and (v) restructure banks.

Transition of the Pakistani banking system to the International Accounting Standards was completed prior to January 1, 2008. Islamic Banking Institutions prepare and submit to the SBP reports following the Islamic Financial Accounting Standard -1 "Murabaha".

2.5.4 Anti-Money Laundering Measures

A standalone law on anti-money laundering, namely The Anti-Money Laundering (AML) Ordinance was introduced in 2007, with the aim at protecting the financial sector from being used for money laundering and other financial crimes. The SBP has major contribution in drafting and finalization of the law. The Ordinance criminalizes money laundering and requires financial institutions to submit Suspicious Transaction Reports and extend mutual legal assistance on a bilateral basis. The thrust of the law is to meet Financial Action Task Force (FATF)

recommendations. The SBP has undertaken a developmental project with the objective of devising tools that would help it in assessing the preparedness of banks to effectively implement anti-money laundering measures.

2.5.5 Agent of the Government

The SBP acts as agent to the Federal Government, Provincial Governments and Local Authorities in the following transactions:

- the purchase and sale of gold or silver or approved foreign exchange;
- the purchase, sale, transfer and custody of bills of exchange, securities or shares in any company;
- the collection of the proceeds, whether principal or interest, profit, dividend or other return, of any securities;
- the remittance of such proceeds at the risk of the principal, by bills of exchange payable either in Pakistan or elsewhere;
- the management of public debt;
- the transaction of special drawing rights with the International Monetary Fund.

In addition, the SBP is the operator of the CSD for government securities.

2.6 ROLE OF THE SECURITIES REGULATOR

The SECP is responsible for encouraging the organized development of the capital market, the corporate sector and the insurance market in Pakistan, and promoting and regulating development of Private Pension Schemes and Funds.

The SECP is entrusted with the regulation of the business of stock exchanges, clearing houses for securities and CSDs, stock broker companies, investment companies and public companies. The scope of the SECP regulatory responsibilities includes also NBFIs, such as insurance companies and leasing companies.

The Securities and Exchange Policy Board is responsible for policy making, coordination with the Federal Government and oversight of the performance of the SECP. It also specifies fees, penalties and other charges chargeable by the SECP.

According to the Act for the Establishment of the Securities and Exchange Commission of Pakistan, the Board and the SECP are empowered to issue regulations and impose penalties for the violation of rules and regulations of the Act. The SECP has also the power to issue directives, codes, guidelines, circulars or notifications, and may conduct investigations in respect of any matter that is an offence under the Act or any other law administered by the SECP. For more details see Section 8.

2.7 ROLE OF OTHER PRIVATE AND PUBLIC SECTOR ENTITIES

2.7.1 Pakistan Banks' Association

The Pakistan Banks' Association (PBA) was established in 1953 and has currently 48 members. Its main objective is to coordinate the efforts of the banking industry, and to share a common vision of progress and development with its members. PBA membership is institutionalized and is available to all banks operating in Pakistan. Its governing body is an Executive Committee comprising 14 members, represented by the Chief Executives of the respective member institutions. Presently, the PBA has 10 functional sub-committees.

The SBP consults the PBA for expert opinion in formulation of regulations for the banking industry. With respect to matters related to payment systems in Pakistan, the PBA was involved in drafting the Operating Rules for Participation in PRISM and several ad hoc working groups were

established for the implementation of the RTGS project. Further, the PBA is regularly consulted by the SBP in developing regulations for new retail payment instrument and services.

2.7.2 Association of Securities Market Participants

The Financial Markets Association of Pakistan (FMAP) was formed in 1997 as a non-commercial, non-profit and self-financed organization of dealers of financial instruments. The FMAP's main tasks are elaborated in the mission statement, namely "… to actively promote the educational, professional, ethical, and social interest of the financial markets and the banking industry". The FMAP is consulted by the SBP on issues relating to government securities, money market, and foreign exchange markets. The members of the association are drawn from dealing room staff of all scheduled banks, NBFCs and FX/Money Market Interbank Brokerage Houses. The FMAP has more than 285 Members. The FMAP also conducts seminars, training programs, and symposia to facilitate the achievement of its stated objectives.

CHAPTER 3

PAYMENT MEDIA USED BY NON-FINANCIAL ENTITIES

3.1 CASH

Cash is the most relevant payment instrument for individuals, representing about 67 percent of reserve money M0 (as of end June 2009) and 29 percent of total deposits. In some rural areas, cash is the only means of payment.

The currency in Pakistan is the Pakistani Rupee (PKR) which is the sole legal tender in the country. The SBP is the only issuer of the national currency. The SBP designs and prints banknotes, distributes them, replaces damaged ones, and identifies and removes from circulation counterfeit notes. As of end June 2009, the exchange rate versus the US dollar was 81.2 PKR for 1 US Dollar.

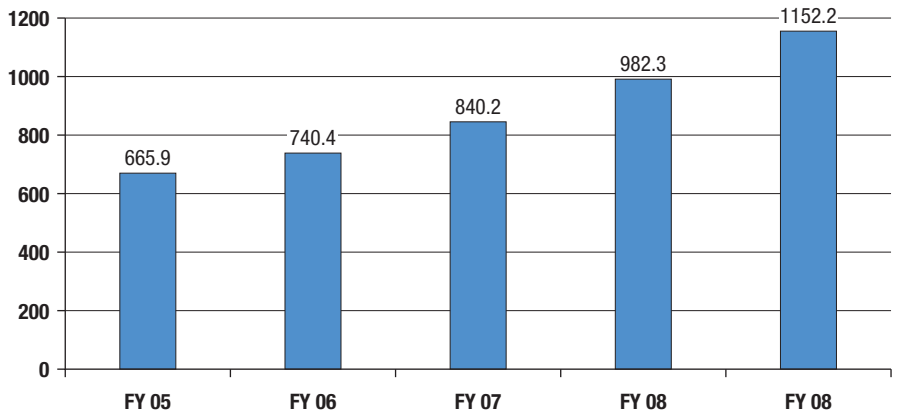
Banknotes are issued in the following denominations: 10, 20, 50, 100, 500, 1000, and 5000. As of June 2009, PKR 1152.2 billion were in circulation, including bank notes and coins. The amount of currency in circulation as of June 2008 was PKR 982.3 billion, which was equal to approximately 11 percent of the GDP. The upward trend in the amount of currency in circulation shows that cash is still the preferable means of payment in Pakistan. Coins are issued in denominations of 1, 2 and 5 PKR.

TABLE 2: BANK NOTES AND COINS (IN PKR BILLION)

	FY08
Total currency issued	1,054.2
Total banknotes issued	1,045.8
Coins issued	8.4
of which:	
One-Rupee coins and above	7.7
Subsidiary Coins	0.7

Source: SBP.

FIGURE 1: CURRENCY IN CIRCULATION (IN PKR BILLION)



Source: SBP.

3.2 PAYMENT MEANS AND INSTRUMENTS OTHER THAN CASH

During FY09, a total of 495.1 million retail payment transactions (paper-based and electronic payments) were recorded valuing PKR 155.4 trillion; this represents a growth of 7 percent in the volume and 2.5 percent in the value of transactions compared to FY08.

3.2.1 Cheques

Paper-based instruments dominate retail payments in Pakistan. During FY09 paper-based transactions constituted 67.7 percent of the total number and around 90 percent of the total amount of non-cash transactions. Both the volume and value of paper-based transactions was largely driven by cheques. This payment instrument is used for cash withdrawals and for funds transfers through cheque clearing. Cheques are the preferred mode of payment for commercial transactions, as well as for government payments. The share of other paper-based instruments (Pay Orders, Demand Drafts, Telegraphic Transfers, etc…) is less than 10 percent in terms of the total value and volume of paper-based transactions. In order to improve the efficiency of clearing and settlement of paper-based instruments, the SBP facilitated a consortium of banks and a firm based in the private sector to set up a semi-automated clearinghouse namely the National Institutional Facilitation Technologies (NIFT), in 1995.

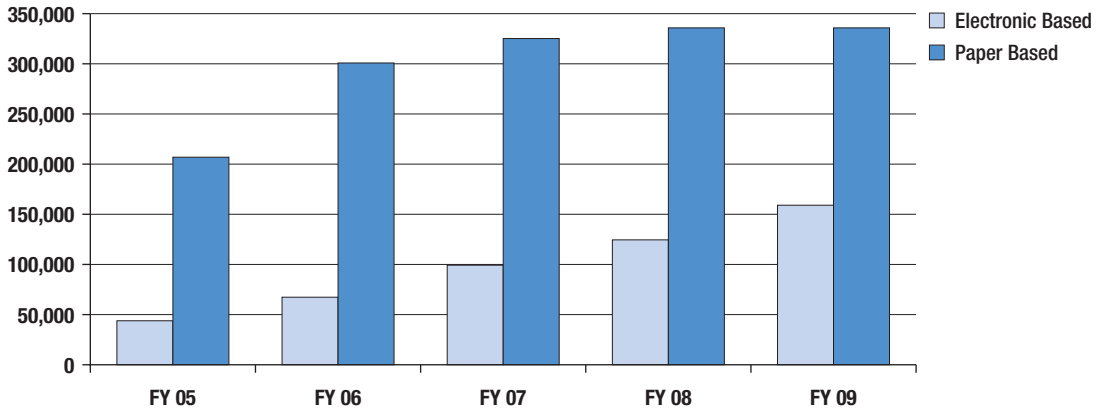
The NIFT clearing system was recently upgraded to support the implementation of the Real-time Gross Settlement System at the SBP. For details, see section 4.1.2.

3.2.2 Direct Credits and Direct Debits

The growth of electronic based payment instruments is gaining momentum in view of the increased investment in infrastructure by the banks, the SBP's efforts to create an enabling policy environment, and launch of innovative products by banks. Electronic retail payments in Pakistan consist of various instruments and channels for payments such as payment cards, RTOBs, banking through Call Centre/IVR, internet and mobile banking. However, these services are still limited to a small portion of the population in the country.

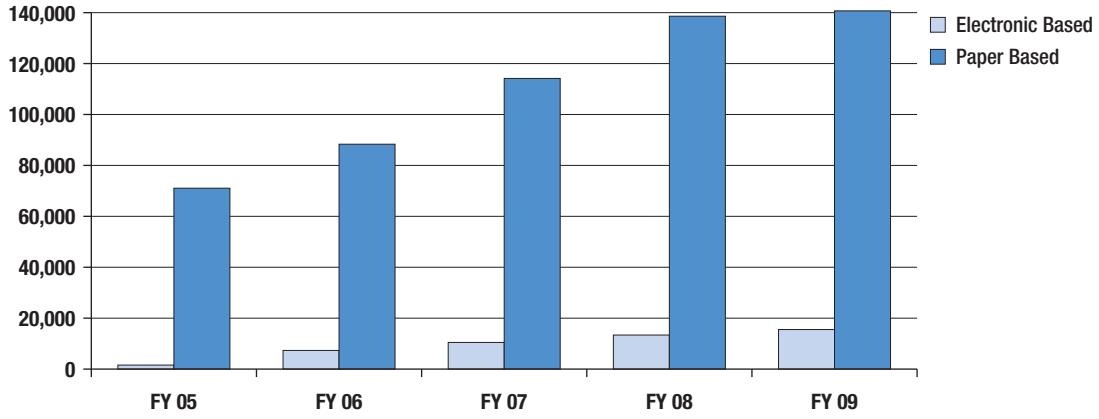
Electronic payment instruments and the related infrastructure have been expanding at a fast rate in Pakistan during the last 5 years. The number of electronic transactions increased year-to-year by 28 percent during FY09 to 159.8 million, while over the same period paper-based transactions registered a marginal increase of 0.1 percent to 335.3 million. The impact of these differences in growth rates is clearly visible from the increasing share of electronic transactions in the total number of transactions to 32.3 percent during FY09 as compared to 27.6 percent in FY08.

FIGURE 2: VOLUME OF RETAIL PAYMENTS (IN THOUSANDS)



Source: SBP.

FIGURE 3: VALUE OF RETAIL PAYMENTS (IN PKR BILLION)



Source: SBP.

In FY09 the RTOBs and ATM transactions were the major contributor to the electronic based transactions growth due to their general acceptability among people. The ATM transactions' share in the total volume of electronic banking transactions reached 50 percent, followed by RTOBs (29.6 percent) and POS transactions (11.4 percent). On the other hand, the value of ATM transactions was only 4.7 percent while RTOB transactions constituted over 94 percent of the total value of electronic retail transactions since this channel is mostly used for Business-to-Business (B2B) transactions. The remaining electronic banking transactions (such as internet, mobile and call centres transactions) constituted only 1.9 percent in both the overall value and volume of transactions.

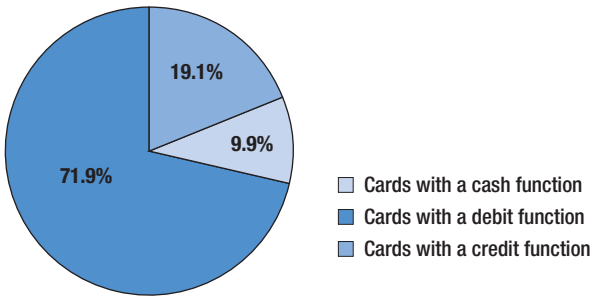
3.2.3 Payment Cards

Payment cards are gaining popularity among people with bank accounts. FY09 recorded a 19.1 percent grow in the number of payment cards, which reached 8.9 million in June 2009. Three types of payment cards are in use in Pakistan. Debit cards that can be used both in POS terminals and ATMs represent about 72 percent of the total amount of issued cards, followed by credit cards and ATM-only cards (see Figure 4). Most of the ATM-only cards (cards for cash withdrawal) have been recently replaced with debit cards. Some of the banks issue chip based debit and credit smart cards. Payment cards are used in Pakistan for making Person-to-Person (P2P) payments, withdraw money from the ATMs and pay utility bills (such as gas payments) using the ATMs.

Only banks licensed by the SBP can issue payment cards. Two domestic brands as well as international brand cards like VISA, MasterCard and American Express are in circulation in Pakistan.

In FY09, 878 new ATMs were installed by banks, presenting a growth of 28 percent over the year. As of June 2009, there were around 4,000 ATMs working across Pakistan. ATMs were mostly used for cash withdrawal but also for

FIGURE 4: NUMBER OF PAYMENT CARDS IN CIRCULATION



Source: SBP.

other purposes such as cash deposits, payment of utility bills, deposit of cheques, and account to account fund transfers. As of that date, more than 49,715 POS terminals installed with merchants in Pakistan were accepting payment cards as a form of payment for goods and services. The on-line branches (for RTOBs) constituted 68.2 percent of the total branch network in FY09.

There are two interoperable ATM card schemes (ATM switches) for payments with payment cards issued in Pakistan: *1Link* and *MNet.* Net interbank positions resulting from card operations are not settled in PRISM. The settlement takes place via "GLOBUS" System in the State Bank of Pakistan.

Alternative channels for making payments, such as mobile phones and internet payments have gained popularity in Pakistan. Call Centres/IVR are also recording continuous growth in the last few years. ATMs, POS terminals and Internet can also be used to initiate cross-border transactions.

3.2.4 Initiatives taken by the Payment Systems Department of the SBP to Enhance Security in Payment Cards in Pakistan

Growth in the use of payment cards in Pakistan has seen a corresponding increase in the number of complaints by customers for frauds committed on POS terminals. To address this issue, the Payment Systems Department (PSD) at the SBP initiated the establishment of a committee comprising risk managers of commercial banks and VISA Pakistan representatives. The main task of the committee is to identify and implement measures to enhance security in payments by payment cards. Such measures include:

- Transforming all POS terminals for Primary Account Number masking. This measure was implemented in 2008;
- Implementing international Chip and PIN standards by 2010. In this regard, an instruction was issued by the PSD to all commercial banks to convert their POS machines into Europay Mastercard Visa (EMV) compliant and the same was accomplished in December 2008;
- In the absence of PIN, as a security feature for payment card transactions, it has been made compulsory for banks to issue the necessary instructions and train the merchants on signature verification;
- Developing a database on fraudulent entities;
- Imposing limits on the amount of the transfer for certain merchant categories (e.g. payments at fuel stations);
- Installing Short Message Service (SMS) alert system by banks.

3.2.5 Postal Instruments

Money Order (MO) offered by the Pakistan Post Office Department is a very popular payment instrument is Pakistan. A MO is an order issued by one branch of the post office for the payment of a sum of money through another branch. MOs provide a secure and inexpensive mode for one individual to send money to another in a different part of the country using the postal network. Because of the large geographical coverage of postal offices, MOs allow for the transfer of money to rural areas where regular banking services are scant. Almost all post offices in Pakistan offer money order services. The originating post office collects the amount of the MO plus a commission from the money sender and sends an advice to the destination post office. There the funds are paid to the beneficiary.

Another postal instrument is the Pakistan Postal Order (PO). This traditional postal service is designed to fulfill requirements for small payments at nominal commission. POs are a type of prepaid funds transfer facility. They are issued in the denominations of PKR of 1, 2, 5, 10, 15, 20 and 50. POs are sold either for cash or for cheque and paid

by all head and sub-post offices in Pakistan. MOs and POs are both cleared outside the interbank payment systems.

3.2.6 Innovative Retail Payment Instruments

New retail payment instruments and alternative channels for making payments, such as mobile phones payments and internet payments have started to be used in Pakistan. Internet banking in Pakistan is growing slowly, but at a steady pace. During FY09, banks reported 2.1 million transactions involving an amount of PKR 68.4 billion. This shows an increase of 59 percent in numbers and 56 percent in amount compared to the previous year. Few banks offer transactions through mobile phones. These transactions include utility bills payment and account-to-account funds transfers. The number of transactions was 71,240 for FY 09, showing an increase of 46 percent. In terms of value, it reached PKR 16 million, registering an increase of 30 percent compared to FY08.

The SBP plays an active role in facilitating the development of the infrastructure for such payments. In this regard, the SBP issued a Regulation on Branchless Banking in March 2008. The project is aiming at enhancing outreach of payment services to the population through alternative distribution channels (such as retail agents and mobile phones) that are potentially less expensive for the user compared to conventional branch-based banking, while at the same time the design of the schemes and their implementation are efficient and safe. More specifically, the Regulation defines branchless banking activity, the role and requirements for agents and consumer protection issues. This Regulation is applicable to all banks including Islamic banks and microfinance banks. Only "Bank-led model"[9] of branchless banking is allowed for the time being.

3.2.7 Pakistan Remittance Initiative (PRI)

The Federal Government and the State Bank of Pakistan launched in August 2009 the Pakistan Remittance Initiative (PRI) with the aim to boost and facilitate the flow of remittances sent home by non-resident Pakistanis. Remittance services depend on cross-border payment arrangements for interbank retail payments for transfer of funds and on the domestic payment infrastructure for settlement and transfer of information. Therefore, improvements in domestic and cross-border payment arrangements have the potential to increase the efficiency and reduce costs of remittance services. In this context, the SBP has taken the initiative to improve the payment systems architecture of the country through achieving the following objectives:

- Automatic delivery of domestic remittances into beneficiary's account/over-the-counter, generating real-time confirmation SMSs to the remitter and the beneficiary;
- Development of robust and reliable ATM network. This would allow the beneficiary of remittances to withdraw cash after banking hours and during holidays.
- Development of integrated and secured payment system infrastructure of Alternate Delivery Channels (ATM, POS, IVR, Call Centre, Mobile Banking) offering options to beneficiary to make P2P payments, payments at merchant sites, payment of utility bills, funds transfer etc. This would also encourage beneficiaries to maintain a minimum balance in bank accounts eventually helping to increase savings/deposits.

The concrete measures were set up in a Circular issued in August 2009, under the PSEFT Act, 2007. Initially five banks (ABL, HBL, MCB, NBP and UBL) have been selected to be part of this initiative. Additional participants may be added going forward subject to pilot tests.

9 "Bank-led model" of branchless banking involves both bank and nonbank institutions. Customer account relationship rests with the bank, while the non-bank institution provides the delivery channel.

Participating banks were encouraged to take the following initiatives:

- To enable a system to send SMSs to the remitter and the beneficiary, after crediting the remittance amount in the beneficiary account or in the system for the cash payment at the counter;
- To install ATMs at key locations/ branches to facilitate cash withdrawals after banking hours and during holidays;
- To create awareness among beneficiaries to use ATMs for cash withdrawal;
- To promote the use of E-banking/M-banking channels for making payments at merchant sites, transferring funds, paying utility bills etc. In this regard, banks may consider issuing special Remittance Cards and reduce/ waive various fees and charges on the use of these channels.

Participating banks need to ensure adequate controls in the process of transfer and payment of remittances in/through beneficiary's account and over-the-counter payments. Furthermore, they are also required to carry out procedures to ensure strict compliance with all SBP rules & regulations, including those related to Know Your Customer (KYC) and Anti-Money Laundering and Combating the Financing of Terrorism (AML/CFT) measures. A comprehensive "Complaint Handling Mechanism" has also been put in place. The SBP under the auspices of the PRI is encouraging the enhanced role of technology in offering remittance services.

3.3 NON-CASH GOVERNMENT PAYMENTS

The public sector plays an important role in the payments system of Pakistan. Non-cash government payments are executed by the Treasury and processed through the SBP in its role as fiscal agent of the Government, and through a state-owned bank, the National Bank of Pakistan. For the distribution of salary payments, the Treasury holds accounts with the National Bank of Pakistan. On the collection side, the National Bank of Pakistan is authorized by the Government to collect tax-related payments. The Treasury does not hold a settlement account in the RTGS system. Instead, the SBP processes the Treasury's payments on its behalf through the central government account (and sub-accounts) the Treasury holds with the SBP.

The government is in the process of completing the implementation of a single treasury account, as part of public financial management reforms, in line with fiscal Report on the Observance of Standards and Codes (ROSC) recommendations. This will involve the consolidation of government funds in its account with the SBP, from which withdrawals will be made only when actual payments are due. Existing funds held outside the SBP account will be transferred by end-June 2009.

CHAPTER 4

PAYMENTS: INTERBANK EXCHANGE AND SETTLEMENT CIRCUITS

4.1 LOW-VALUE PAYMENT SYSTEMS

In Pakistan, retail payments are generally made with cash, but the number of transactions made with payment cards or through electronic funds transfers is growing.

4.1.1 Payment Cards Clearing and Settlement

There are two interoperable ATM card schemes (ATM switches) for payments with payment cards issued in Pakistan: *1Link* and *MNet*. *1Link* is the largest shared ATM network of the country covering more than 160 cities nationwide. *1Link* was launched in 2003. It is owned by the consortium of 11 major banks and is open for all banks operating in Pakistan. *MNet* (the second ATM switch) was launched by MCB Bank Ltd, one of the largest bank in Pakistan. As of end-June 2008, *MNet* had 612 ATMs in 50 cities. As of the same date, 28 banks were interconnected on *1Link* and 10 banks were using the *MNet* switch.

Encouraged by the SBP the two switches of the country were interconnected in 2005 therefore providing maximum ATM coverage to the customers of both switches. In 2007 the settlement of interbank ATM transactions were transferred to the SBP.[10] The net interbank positions resulting from the clearing of card operations are settled in the current accounts that banks maintain at the Karachi Office of the SBP BSC. *1Link* and *MNet* prepare bank-wise statements of all ATM transactions executed through respective switches on the previous day. The results of the clearing (multilateral net interbank intra-switch positions) are sent in electronic form to "GLOBUS" system of the State bank of Pakistan once a day by 12:30. For settlement of interbank inter-switch ATM transactions, MCB Bank Ltd submits to the GLOBUS system by 12:30 one combined net position of receivables and payables. Automated settlement of ATM transactions in the SBP has resulted in faster and more efficient settlement as well as reduction of the credit risk.

For transactions made with VISA, Mastercard and cards of other international schemes, the clearing and calculation of the net positions among member banks is made by the respective head offices. The results for all local transactions are sent back to the SBP for settlement through the PRISM. Transactions made with cards issued in other countries are settled abroad.

On-going initiatives

A new service launched recently by *1Link* is the Inter Bank Funds Transfer service. It facilitates online payments between the customers of the participating member banks directly and instantly through ATMs. In addition to reducing the cost of transaction significantly, the service eliminates the need of writing cheques, making demand drafts or using other labor-intensive instruments. The Inter Bank Funds Transfer service will be available round-

10 Since the establishment and inter-connectivity of ATM switches ABN Amro Bank and MCB Bank Ltd were acting as settlement banks on behalf of *1Link* and *MNet* respectively. This was obligating banks to maintain their accounts with *1Link* as well as with *MNet* causing them to block extra liquidity in the system. In addition, the banks were exposed to credit risk with respect to the settlement banks amounting to millions of rupees (the amount banks held in settlement accounts with MCB Bank Ltd and ABN Amro Bank).

the-clock. It opens up possibilities of designing various existing products and services over the basic infrastructure in the domain of P2P, B2B and Person-to-Business (P2B) transactions.

Different technology standards used by *MNet* and *1Link* are causing backlogs. Given the importance of a single protocol, the SBP has directed both switches to map their transaction response codes on one-to-one basis as one code of one switch must be mapped against only one code of the other switch. Furthermore, to encourage interoperability between switches and the delivery of ATM service and operating procedures in compliance with international best practices, the SBP initiated dialogue with the two ATM switch operators. As a result, standardized Service Level Agreements and Standard Operating Procedures are being developed. The Service Level Agreement has built-in mechanism of compliance monitoring through a monitoring committee consisting of representatives of the ATM switches and banks.

Interoperability and Straight-Through Processing (STP) are key factors for achieving efficient and safe retail payments. In this context, it has been planned to inter connect currently operating POS systems. Automated transfer of net balances into PRISM for settlement is planned to be implemented in the final phase. A project to connect all the banks through the automated Clearing House is being conceptualized. This is in addition to a proposition for B2B transactions using the SWIFT network.

4.1.2 Clearing of Paper Based Instruments

National Institutional Facilitation Technologies (NIFT)

The National Institutional Facilitation Technologies Ltd. (NIFT) is an important part of the payment infrastructure in Pakistan. NIFT was incorporated in September 1995 as joint venture between a consortium of six banks and entrepreneurs from the private sector. All commercial banks utilize NIFT's services. As of May 2009, NIFT was operating with 20 data centers, which provided services to 5,571 branches of 40 commercial banks in 185 major cities.

NIFT is a clearinghouse[11] that provides centralized multilateral netting of retail cheques on a countrywide basis. During FY08 a total of 71.25 million transactions for a value of PKR 23,749 billion were cleared in NIFT. The number of transactions cleared in NIFT during FY09 reached 73.605 million. In 2007, NIFT clearing operations were changed from decentralized processing to centralized multilateral netting on a countrywide basis. The NIFT Karachi office collects and consolidates data from all NIFT automated centers (14 local offices plus Karachi office). NIFT has set up a grid of automated clearing, which provides intercity clearing involving 15 major and over 85 satellite cities in Pakistan. In order to become a participant in NIFT cheque clearing, banks must have a banking license issued by the SBP and a current account at the SBP.

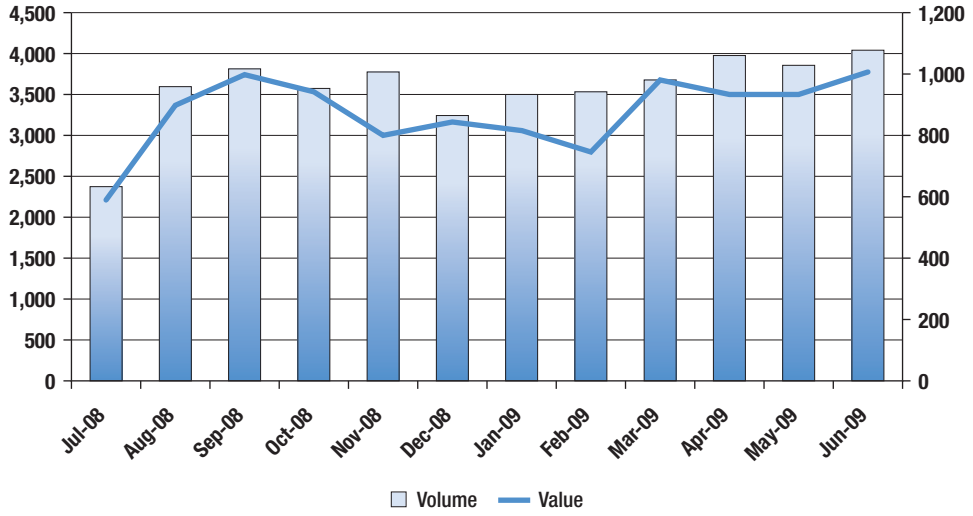
NIFT is currently used for clearing of large-value as well as retail cheques. There are no limits on the amount of individual cheques to be processed through NIFT.

The NIFT system is based on physical exchange of cheques. Although the processing of cheques between NIFT offices is automated, most of the processes, including the collection and submission of cheques by banks and the link to NIFT, are manual and paper-based.

The countrywide netting procedure includes multilateral netting once a day for each of the four products: Main Clearing, Same-day High-value Clearing, Intercity Clearing and Clearing of Returned Cheques. High-value cheques are cleared on a same-day basis. The settlement of the participants' net positions occurs four times a day (one settlement for each type of clearing) in PRISM according to a pre-agreed schedule. Payments are final and irrevocable after posting of the clearing results on participants'

11 In addition to providing cheque clearing services, NIFT is a service provider to major utility companies for utility payment services. Both gas distribution companies of Pakistan (SSGC and SNGPL), Telecommunication company (PTCL), mobile phone companies (Mobilink and Telenor) exploit NIFT's Services. One of NIFT divisions—NIFTeTRUST—is a Certification Authority of Pakistan. This division has establishes facilities to provide Public Key Infrastructure (PKI) based security solutions for e-business, e-commerce, e-banking and e-government as an affiliate of VERISIGN Inc USA.

FIGURE 5: VOLUME AND VALUE (IN PKR BILLION) OF NIFT CLEARING POSITIONS IN PRISM



Source: SBP

accounts with the SBP. Customer accounts are credited no later than T+2.

NIFT offers a web-based secured access (employing Public Key Infrastructure [PKI] Security) to the information about participants' positions to the SBP and treasury managers of banks. This allows banks to better manage their intraday liquidity needs. Payments that have not been settled during the day due to insufficient funds in the banks' account in PRISM are cancelled at the end of the day. In such case, the originated net positions would be unwound.

Credit and liquidity risk

Credit risk in NIFT has been partially reduced with the introduction of same-day clearing and settlement of high-value customer payments. Debiting and crediting current accounts that banks hold in the SBP for settlement of the calculated net positions further reduces settlement risk (settlement in central bank money).

Settlement of net obligations arising from the clearing of cheques in NIFT is time sensitive since it occurs within specific time windows during the day. A failure of any participant to pay its net obligation at the pre-specified time may result in a delay of settlement of other participants. Such delay may give rise to liquidity and credit risk for participants. The risk depends on the size of net debit positions. In NIFT, on certain days the net payment obligation of a single bank resulting from same-day clearing can reach USD 150 million. Currently, NIFT has no mechanisms in place to control settlement risk that may arise in case of a failure of a participant to settle its debit position when expected. The SBP, however, is performing a risk assessment and the introduction of such mechanisms are being considered.

One possible way to reduce the potential net exposures, that is under consideration by the SBP, is to encourage commercial banks to route all large-value customer payments that are currently cleared in NIFT (for example payment above certain threshold) through the RTGS system.

On-going initiatives

About 39 percent of paper based payment instruments processed in NIFT (including cheques, demand drafts, payment orders, etc.) are classified as "non-standard". Lack of standardization increases the processing costs for

banks and is a source of extra delay in clearing. In order to effectively address this issue and to streamline the clearing process in the country, the SBP Payment Systems Department issued various instructions encouraging banks to standardize the paper based payment instruments.

The standardization of payment instruments is part of a broader set of initiatives, undertaken by the SBP in cooperation with NIFT and commercial banks, to enhance efficiency in the paper-based clearing system and its conversion to image-based clearing. In the first phase, a new License Agreement has been signed between the SBP and NIFT. A number of new covenants have been incorporated to upgrade NIFT operations to conform to best international practices. The development of an appropriate feasible model for Pakistan for "cheque truncation", the development of the necessary regulatory framework and a pilot project of image clearing have been planned for 2009–2010.

4.2 LARGE-VALUE PAYMENT SYSTEMS

4.2.1 Pakistan Real Time Interbank Settlement Mechanism (PRISM)

To improve the safety and efficiency in the settlement of wholesale payments, on July 1st, 2008, the SBP launched the Pakistan Real Time Interbank Settlement Mechanism (PRISM), a fully automated RTGS system. PRISM is owned and operated by the SBP. It is designed to handle all large-value payments (as well as government securities settlement) in the country and is thus a systemically important payment system for Pakistan. For the first year of operation (July 2008–July 2009), the system processed a monthly average of 19,700 transactions with an aggregate value of PKR 5,185 billion per month (see Table 3). The value of all transactions processed in PRISM in FY09 was PKR 62.2 trillion, which is 4.8 times the GDP for the year.

TABLE 3: SETTLEMENT STATISTICS FOR INTERBANK LARGE-VALUE PAYMENTS IN PRISM

(value of transactions in PKR billion)

	Government Securities[12]		RTGS[13]		NIFT[14]	
Month	**Volume**	**Value**	**Volume**	**Value**	**Volume**	**Value**
Jul-08	0	0	13525	2,815	2363	582
Aug-08	2301	1,350	14047	2,198	3573	895
Sep-08	3231	2,021	16498	3,001	3801	995
Oct-08	5592	2,964	12188	2,333	3569	939
Nov-08	4828	2,589	12594	2,286	3759	799
Dec-08	3295	1,882	10834	2,039	3240	843
Jan-09	3969	2,299	11068	1,645	3491	810
Feb-09	4073	2,430	9676	1,704	3508	742
Mar-09	4205	2,580	10693	1,715	3670	981
Apr-09	5359	2,971	11469	1,656	3966	928
May-09	4680	2,642	11696	1,919	3843	926
Jun-09	4418	2,647	13358	2,097	4032	1,004
Total	45951	26,375	147646	25,409	42815	10,443

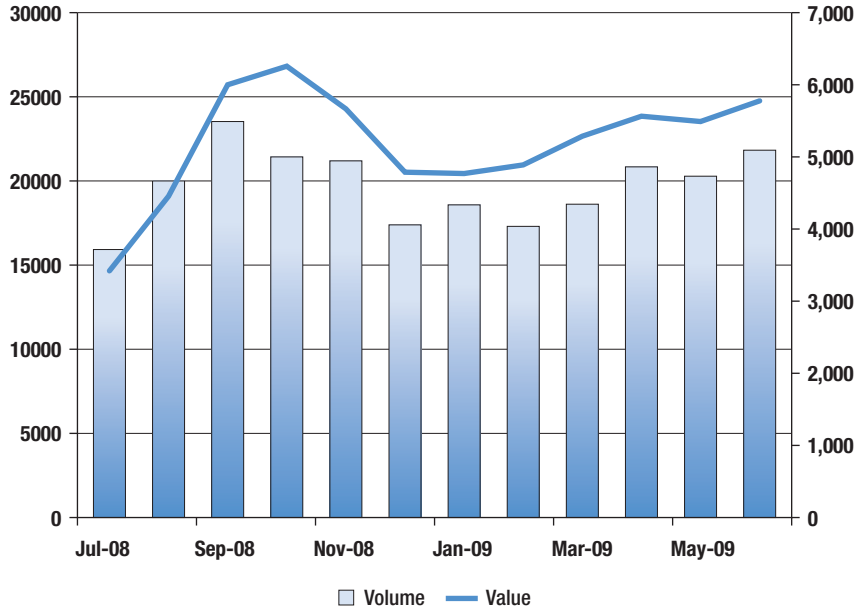
Source: SBP

[12] Volume and value of transactions with government securities (PIBs, MTBs) settled in PRISM. Figures do not include free-of-payment transactions.

[13] Volume and value of only-funds transactions.

[14] Volume and value of net interbank positions resulting from the NIFT clearing and settled in PRISM.

FIGURE 6: TOTAL VOLUME AND VALUE (IN PKR BILLION) OF TRANSACTIONS IN PRISM



4.2.1.1 Settlement in PRISM

With the introduction of PRISM, banks holding accounts at the SBP are able to settle their interbank transactions in real time on a transaction-by-transaction basis. Until recently, inter-bank payments were made manually between current accounts and securities accounts of banks at the SBP based on cheques with end-of-day settlement.

In view of the sensitivity and criticality of the system and to ensure a smooth transition of all participants from the existing to the new settlement system, it was decided to launch the system in several steps. This allowed banks to slowly adjust to the new system and the SBP to carefully monitor the situation and effectively provide support to system participants. PRISM started operations with the settlement of interbank money market transactions and the domestic leg of FX market operations. Since July 2008, the SBP has gradually enhanced PRISM's functionality by introducing the settlement of interbank government securities transactions and the net positions from retail clearing (NIFT). In addition, some large banks' customers have started to require processing of their payments through PRISM, although a significant portion of these payments are still processed through the paper exchange of cheques in NIFT. Cash positions arising from trades with corporate securities and financial instruments of term deals are settled outside PRISM.

Participants

PRISM rules define the criteria for entry into and exit from the system based on safety and soundness considerations. There are four participation categories in PRISM. All commercial banks can be direct participants in PRISM. Direct participants have access to all facilities offered by the system rules, such as ILFs, the settlement of government securities transactions in PRISM and the settlement of customer based transactions. All other financial institution can become indirect participants (with an account in PRISM but without a direct connection to the RTGS system). An indirect participant is able to transact in the system through the Service Bureau (an entity established by the SBP to enter transactions manually in PRISM on behalf of indirect participants). As of June 2009, the total number of direct participants in PRISM was 39 (36 banks

and 3 development financial institutions). Clearing entities, such as NIFT or ATM operators are granted a status of special participants. The SBP is also a direct participant in PRISM and can act as Authorized Third Party.

Operating rules

RTGS operations are governed by the Operating Rules for Participation in PRISM, issued by the SBP, and several operating guidelines and procedures. The rules cover the admission procedures for participants, liquidity management tools employed by the system, operational requirements etc. The rules and procedures as regards financial and operational risks and its management, information on the system design, system timetable and technical procedures are documented.

Transaction types

Direct participants can submit the following transaction types to PRISM:

- Inter-bank fund transfers;
- 3rd Party funds transfers;
- DVP, Delivery versus Free (Free of Payment) and ILF transactions;
- Own Account transfer transactions;
- Multilateral net settlement batches transactions.

4.2.1.2 Settlement procedures and liquidity support

Each direct participant is required to open a settlement account in PRISM. This account has to be funded at the beginning of each RTGS processing day from the participant's current account with the SBP (the sum of all regional current accounts that a participant is maintaining with the SBP BSC Offices across the country). Settlement accounts cannot have a debit balance. Participants are responsible to maintain sufficient funds to settle their payments in the system. They can transfer their own funds from one regional current account to other regional current accounts. Settlement accounts can only be used for the transfer of funds between participants, and between the SBP and a participant. The participants' accounts are updated on in the General Ledger of the SBP BSC Offices, based on the transactions in the settlement account. The RTGS has real time interface with GLOBUS banking (the software that supports the SBP accountant system).

The operation day of the PRISM starts at 9:00. The cut-off time for accepting payments is 15:30. All payments are settled on a gross basis in real time in PRISM. In case of insufficient funds in a participant's settlement account in PRISM, the payment is placed in a central queue. All payments which are not settled by the end of the operating hours of PRISM are rejected by the system. Once they are settled by PRISM (the settlement accounts of participants are debited/credited), payments are irrevocable. Credit and debit electronic confirmations are sent automatically by the PRISM system to the participants and considered as official settlement finality confirmations.

Opening balances and funds received from other participants during the operational day are the main sources of liquidity for participants in PRISM. The participants can use the CRRs and SLRs they hold in accounts with the SBP to make payments during the day. These funds are available free of charge. As of end-June 2009, the required CRR level for all banks including Islamic banks/branches was the weekly average of 5 percent (subject to daily minimum of 4 percent) of total Demand Liabilities (including Time Deposits with tenor of less than 1 year). Over October-November FY09, the SBP abolished the 19 percent SLRs for time liabilities of one year and higher tenor. Each participant can manage its payment queues via its front-end system by designing different priority levels to its payment instructions. The system maintains 99 priority levels, some of which (from 1 to 10) are reserved for the ancillary systems, the settlement of DVP transactions and the SBP payments. Participants may change the priority or cancel their payments before the payment instructions are settled. Payments are settled on First-In-First-Out (FIFO) basis within each priority level.

Payments with priority levels 1 to 9 which remain unsettled within the pre-specified time window may be liable to pay interest/penalty charges. Currently no interest or penalty is charged.

Participant can avail the collateralized ILF offered by the SBP to support their intraday liquidity needs in an RTGS environment. The ILF is available only on a fully collateralized basis against approved government securities as specified by the SBP. Following a bank's request for ILF, PRISM automatically transfers ILF eligible securities from bank's own portfolio to SBP's ILF portfolio and simultaneously credits funds against these securities to the bank's settlement account in PRISM. Participants are required to settle their ILF transactions by sending an ILF buy back request on the same day. All the unsettled ILF transactions are automatically settled at the end of the day, subject to the availability of sufficient funds in the accounts of participants. In case of insufficient funds, the SBP reserves the right to apply penalties or redeem any securities acquired through ILF. Participants have also the option of interbank borrowing (clean or repo) during the day, or to use the discount window facilities during a specified period during the day. Discount window facilities can be available after approval by the SBP.

All payments still pending in the queue at the end of a business day are canceled by the system. The system processes only same-day value transactions.

All the participants have online access to information on the payments processes, their settlement account balances, portfolio balances, payments pending in the queue and liquidity alerts about their net positions resulting from the clearing systems.

4.2.1.3 Pricing

The development cost for the system was fully borne by the SBP. The SBP does not charge entry, membership or transaction fees. However, the Operating Rules for Participation in PRISM include provisions for transaction charges. Banks are free to determine the charges that they apply for sending customer payments via PRISM.

4.2.1.4 Management of Operational Risk in PRISM

PRISM is a fully automated electronic transfer system. Participants can send payment instructions from their own premises via a computerized private network between the SBP and the participating banks. There are identification and authentication procedures in place. The information technology (IT) security component of the system provides PKI infrastructure and transactional and link encryptions for data security. The information security model includes access control model, data integrity model, and information flow model. The data exchange between PRISM and its workplaces, central and remote nodes as well as external systems, is implemented via XML-format message exchange, which corresponds to SWIFT messaging standards. The availability of the service is further supported by the existence of an independent electricity generation facility. PRISM security policies and operational procedures are fixed in a number of normative documents and instructions of the SBP.

Business Continuity related activities for PRISM have been established and documented in the PRISM Detailed Design Document and PRISM Business Continuity Guide. Procedures are in place for periodical backing-up and storage of data. A secondary processing site has been established close to the main operational office. Full system recovery is expected in 30 minutes to four hours with no data loss. Another full-fledged disaster recovery side in another city is under implementation. In addition to telephone lines that can be used to back up telecommunication links, wireless infrastructure including radio/VSAT is in process of implementation.

In order to ensure technical integrity in PRISM, the SBP has established Service Bureau facilities, which can be used by any participant, facing temporary operational problems of using its own front-end system, to send payment messages to the central server. In addition, the SBP has

developed requirements and recommendations for system participants. All participants are required to have in place the necessary business resumption and recovery tools, such as Business Continuity Plan (BCP) procedures, BCP sites for RTGS system related activities and provision of Uninterrupted Power Supply at their main and backup sites.

4.2.2 Management of Credit and Liquidity Risk

The PRISM rules include a wide range of risk management tools. Since the payments of each participant are processed on a gross basis (payment by payment) via the banks' settlement accounts in the SBP using the available balances, the participants do not run credit risk.

However, the shift from end-of-day to intraday settlement and the gradual introduction of time critical payments may considerably increase liquidity needs in PRISM in certain days or certain hours during the day. This might happen—for example—at the last day of the weekly maintenance periods for cash reserves and securities reserves requirements or settlement dates of primary auctions for government securities. Settlement of net positions resulting from clearing of retail cheque payments (the NIFT clearing), DVP transactions, as well as settlement of card payments occurs in narrow time windows in specific hours during the day, and may put liquidity pressure on some participants.

The system offers central queue facilities for managing liquidity. Payments that cannot be settled immediately because of lack of sufficient funds in the settlement accounts of participants are placed in a central queue. Queue management tools include reprioritization of payments and payment cancellation by participants. The availability of ILF further facilitates the timely settlement of payments.

To control the credit risk when extending intraday credit, the SBP requires full collateralization through intraday repo-based operations. The risk is further reduced by accepting only high quality collateral for the ILF (Market Treasury Bills and Pakistan Investment Bonds) and by applying haircuts to the eligible collateral.

Furthermore, the integration and final settlement of other payment systems, such as retail cheque payments (the NIFT clearing), DVP transactions for government securities, FX transactions as well as card payments into the RTGS reduces credit and liquidity risk present in these systems. However, settlement of multilateral net positions in RTGS may pose liquidity risk for participants in case one or more of participants are unable to settle their debit balances in a timely manner. In case of lack of funds for immediate settlement of the net positions, the system generates and sends to the participants liquidity alerts, followed up by phone calls to the banks to arrange the required funds from the interbank market. The SBP is considering introducing mechanisms to control such risk in particular with respect to the settlement of the NIFT clearing. One tool for reducing settlement risk currently in place is that the PRISM system automatically assigns the highest level of priority to the net settlement positions from the NIFT system. Therefore participants' other payments cannot be settled before the settlement of the NIFT clearing.

4.3 CROSS-BORDER PAYMENT SETTLEMENT SYSTEMS

Foreign Exchange Settlement Systems

Foreign currencies are traded on the foreign exchange interbank market, which is dominated by one foreign currency, the USD. In 2007, the total amount of the interbank foreign exchange market in the most traded currency pair USD/PKR reached USD 126 billion. The domestic leg of the transaction is settled in the RTGS system through the debit/credit of the domestic currency accounts maintained by the banks with the SBP, while the settlement of the foreign currency leg occurs through a foreign correspondent bank.

There is no Payment versus Payment (PVP) process in place for the execution of FX deals. The counterparties involved are exposed to normal FX settlement risk as there are time differences between the final settlement of the two legs i.e. USD and PKR, which given the geographical location of both countries is particularly large

Cross-border payment instructions are normally sent and received through SWIFT and are settled through foreign correspondents. As at the end of 2008, 13 banks and financial institutions in the country were SWIFT members and 38 financial institutions were connected to FIN.[15] In 2008, messages sent and received by members in Pakistan amounted to 2.4 million and 4.4 million respectively, which represents a total growth of messages (both sent and received) of 4.3 percent compared to 2007.

International Remittances

International remittances are significant in Pakistan, representing 3.8 percent of the GDP in FY08. In FY09 they continued to show a rising trend reaching a historic high level of USD 7.8 billion, which represents a growth of 21 percent over FY08. The major remittance sending countries are the United States of America, Saudi Arabia and other Gulf countries such as Bahrain, Kuwait, Qatar, Oman and the United Arab Emirates, as well as some European Union countries.

Pakistanis working abroad can use various channels for sending cross-border payments. Transfers through banks are the most popular way (among channels using the financial system) for sending remittances. International MTOs (e.g. Western Union, MoneyGram) and ECs are other channels for sending remittances. The latter are regulated institutions and there are safety and efficiency requirements in place related to the services they provide. The costs of sending money to Pakistan vary depending on the sending country and the transmitting channel used. According to the World Bank Remittance Prices Worldwide data,[16] total costs (including service charges and exchange rate margin) of bank transfers of USD 200 vary from less than 2 percent from the UK to Pakistan to 16.4 percent from the US to Pakistan, while costs of using international MTOs is between 4 percent and 13 percent. The cheapest are services offered by some domestic and international MTOs (e.g. from the UAE, Saudi Arabia and the US). Other methods include a hand delivery by family members or friend, and arrangements such as hawala.

The insufficient presence of Pakistani banks in overseas jurisdictions and lack of marketing efforts are considered the major impediments to a greater role of banks in this segment of the payments system. To promote the remittance business, the SBP has activated a continuous dialogue with banks and Exchange Companies. Banks have been encouraged to submit individual strategic plans and a special SBP Task Force on International Remittances has been established. In FY08, the SBP initiated a reform process in the Exchange Companies sector with a view to generating better market discipline through enhanced transparency, disclosure, strong monitoring, supervision, and enforcement. In addition, the SBP has approved the Remittance Card Scheme of Askari Bank. The feasibility to connect Pakistan's ATM network with Gulf Cooperation Council (GCC) countries' ATM network, in order to facilitate remittance flows, is being studied.

Another important step related to the remittances was the launch of the PRI by the Federal Government and the State Bank of Pakistan. A call centre has been established which is now operational 24 hours, 7 days a week. All overseas Pakistanis and their families can inquire about the remittance services of banks and submit their complaints to the call centre. Toll free services are already available to Pakistanis living in North America. In addition, the government set up a comprehensive website, which provides information about the processes involved in the remittance transactions.

15 FIN is SWIFT's core store-and-forward messaging service.

16 http://remittanceprices.worldbank.org/. Third quarter 2009

The PRI formed a focused group of five large banks in 2009, which developed, in consultation with the SBP, arrangements to instantly credit the bank account of the beneficiary once they receive the funds. These banks have also completed arrangements for instant payments of cash over the counter. To address the issue of delay in interbank settlement of remittance transactions, the SBP has put in place a mechanism for exchange of information between banks about the bank accounts to be credited with the remittances received while the funds are routed simultaneously through the RTGS system. Furthermore, a comprehensive "Complaint Handling Mechanism" has been established. Finally, the SBP has been encouraging the use of technological innovations in offering remittance services.

The SBP is a member of the Asian Clearing Union (ACU), established to facilitate cross-border trades and regional cooperation of the South Asian countries. ACU is a system for clearing payments among the member countries on a multilateral basis. See also section 7.4.

4.4 PROJECTS AT THE STAGE OF DEVELOPMENT AND IMPLEMENTATION

The SBP plays a leading role in developing safe and efficient payment and settlement infrastructure in Pakistan. An internal Payment System Policy committee has been established wherein all the key SBP departments involved in the operation, regulation and oversight of payment systems and instruments are represented. The SBP is in the process of drafting a strategic document for Payment Systems Policy and Oversight, which will cover the various aspects of payment systems development in the country.

Some key on-going projects and issues under consideration include:

- Further development of risk management tools in PRISM and NIFT;
- Strengthening the oversight function of the SBP over payment and settlement systems;
- Further modernization and improvement of efficiency in cheque clearing;
- Expanding the use of electronic payment instruments and STP;
- Further increase of the outreach of payment facilities to areas with limited traditional banking infrastructure;
- Further improvements in the legal framework for both retail and large-value payments.

CHAPTER 5

SECURITIES, MARKET STRUCTURE AND TRADING SYSTEMS

5.1 FORMS OF SECURITIES

In accordance with the Companies Ordinance, 1984, the Securities and Exchange Ordinance, 1969 and the Central Depositories Act, 1997, securities can be issued in both paper and dematerialized form. Dematerialized or book-entry security is a security which is transferable by book-entry in the central depository register. The owner of book-entry securities is determined on the basis of records in the central depository.

The form of issuance of securities chosen by the issuer must be defined in its founding documents and/or in the securities issue prospectus. All corporate securities that are traded at the stock exchanges need to be registered at the CSD (the CDS of the CDC) and therefore are kept in dematerialized form. Similarly, government securities are registered in book-entry form in the SBP's Central Depository. All transfers of such securities are handled by electronic book entries.

5.2 TYPES OF SECURITIES

The following types of securities are available at the stock market in Pakistan:

- Shares of listed companies, which can be:
  - Ordinary Shares—the most common term of shares that entitles their holders to have ownership in the company. Holders may receive dividends depending on profitability of the company or recommendation of the directors.
  - Preference Shares—the company pays a fixed amount of dividend, irrespective of its earning profit or loss. The shareholders generally have no voting rights.
- Corporate bonds: Term Finance Certificates (TFCs) are issued by the companies under the Company Ordinance, 1984 and represent a liability of the company to the securities owner.
- Government securities: these are issued by the Federal Government or any Provincial Government or are guaranteed by the Federal or any Provincial government, and include:
  - Market Treasury Bills (MTBs). These are short term instruments of the Government of Pakistan with maturity of 3, 6 and 12 months. MTBs are zero-coupon securities and are sold at discount to the face value.
  - Pakistan Investment Bonds (PIBs): These are the long term instruments of the Government of Pakistan with maturity available of 3, 5, 10, 15 and 20 years. PIBs are coupon bearing instruments and issued in book-entry (without physical certificates) form with interest payment on biannual basis. They were introduced in 2000 by the government in order to enhance the corporate debt market in Pakistan.

  - Government of Pakistan Market-related Treasury Bills (MTBRs). These are the instruments created when Government borrows from the State Bank. They are six month T-bills and their rates are determined on the basis of weighted average arrived in the last six months Market Treasury Bill auction. They are also called "Market Replenishment Treasury Bills".
  - Sukuk bonds: These are short and medium term Shariah compliant government instruments.
  - Sovereign domestic debt of Pakistan: also includes securities issued under various national saving schemes.
- Derivative securities: securities whose value is linked to the value of underlying shares or debt securities, other financial instruments, indexes, or rights thereto.
- Mutual funds certificates.

5.3 SECURITIES IDENTIFICATION CODE

The National Clearing and Settlement System has implemented the UIN functionality for all its clients including individual investors, brokers, companies and funds.

5.4 TRANSFER OF OWNERSHIP

The legal basis for ownership transfer and custody arrangements is included in the Central Depositories Act, 1997, and the PSEFT Act, 2007. In accordance with the Central Depositories Act, 1997, Art. 6, "the transfer of ownership of book-entry securities from accounts (or sub-accounts) to other accounts (sub-accounts) shall be effected by making an appropriate entry in the central depository register". This procedure is applicable to all securities held in book-entry form. In practice, the transfer of ownership occurs by means of book entries in the CDS in the case of corporate securities, or the Central Depository of the SBP in the case of government securities. A record of an entry in an account or a sub-account shall be *prima facie* evidence of the truth of the matters so recorded. The depository is responsible for correct and timely reflection in depository accounts of securities ownership transfers.

5.5 PLEDGE OF SECURITIES AS COLLATERAL

Based on the essence of pledge as a means of securing liabilities, when securities are pledged, no securities ownership rights are transferred from one person to another. At the same time it is possible that ownership rights are transferred to another person if the liability secured with the pledge is not met.

Art. 12 of the Central Depositories Act, 1997, governs the pledge of book-entry securities, while the Contract Act, 1872 governs the pledge of any other securities. The book-entry securities to be pledged shall be blocked when an account holder or a participant (when the pledgor—the person pledging securities—is a sub-account holder) in the central depository gives instructions to the central depository system. A pledgee (the person in whose favor a pledge of securities is made) shall, in addition to the powers available to him under the Contract Act, 1872, have the power, upon the default of the pledgor, to transfer the pledged book-entry securities or any part thereof. The Act stipulates that the participant in the central depository system shall not create a pledge over any book-entry securities entered in any sub-account maintained under his account with the central depository of his clients without the authorization of the sub-account holder concerned.

5.6 TREATMENT OF LOST, STOLEN, AND DESTROYED SECURITIES

Securities that are kept in book-entry form cannot be lost or stolen. The central depository is responsible for accurate and timely reflection in depository accounts of securities ownership transfers.

5.7 LEGAL MATTERS CONCERNING CUSTODY

The protection of custody arrangements against custody risk in Pakistan is supported by regulations through the segregation of securities holdings. In central depository systems separate accounts are held for securities of participants and for those of their clients.

According to the Central Depositories Act, 1997, the title to any book-entry securities entered in an account shall vest in the account holder and the title to any book-entry securities entered in a sub-account shall vest in the sub-account holder. The General Regulations of the KSE, 2007, stipulate that the broker shall ensure that the assets belonging to their client are kept separated from the assets of the brokers. For this purpose brokers shall maintain a separate fund account, which will include all the cash deposits of their clients along with record/breakdown of client position. Further margins deposited in the form of securities shall be maintained in a separate sub-account or investors account of the individual client at the CDC. The clients' cash deposit and margin securities shall not be used by the broker for any purpose other than as authorized by the client in writing. The broker shall be obliged to furnish documentary evidence in support of implementation of the above regulation as and when required by the Exchange.

5.8 PUBLIC OFFERING OF SECURITIES

The Companies Ordinance, 1984, establishes the legal basis for public offering of corporate securities in Pakistan. Part V of the ordinance regulates the issuance and registration of prospectus and the procedures for the issuance of shares and corporate debt securities.

The issuance of government securities is regulated by the Public Debt Act, 1944. According to Art. 12 of the Act, the Federal Government of Pakistan may issue rules to carry out the purposes of this act. Such rules may provide for the forms and types in which government securities may be issued, the manner in which such securities may be transferred, and the manner in which payment of interest of such securities can be made.

5.9 PRIMARY MARKET

5.9.1 Government Securities

The debt securities market in Pakistan is dominated by government securities, issued in the form of short-term securities with less than 1 year maturity (MTBs and MRTBs) and long-term securities (PIBs). The placement of government securities is performed via auction sales carried out by the SBP. Only Primary Dealers (institutions appointed by the SBP) can participate in government securities auctions.

Auctions for PIBs are announced and organized on a quarterly basis. PIBs can be purchased by individuals, institutions and corporate companies including banks, as well as by foreign individuals and institutions. The SBP announces the auction 14 days prior to the auction date. The SBP and the Ministry of Finance decide the coupon rates and the target amounts after consulting each other.

MTBs are issued on a fixed schedule on a fortnightly basis (Wednesday) and on a multi-priced basis. Announcement of auctions are done two days prior to auction date. The SBP decides the target and cut offs. Like PIBs, MTBs are eligible for purchase by domestic and foreign individuals and companies through non-competitive bids.

When the Government borrows from the SBP, it creates MRTBs. Their rates are determined on the basis of weighted average in the last six month MTBs auction. Another (non-marketable) retail debt instrument, which makes up the largest share of the domestic debt, is the National Saving Scheme (NSS) Instrument issued by the Central Directorate of National Saving Institutional investors, which previously were restricted from investing

in NSS instruments, are currently eligible to do so. This is likely to drain investments from market-based instruments (such as MTBs and PIBs).

The Government of Pakistan issues 3-, 6- and 12-month MTBs. By the end of FY08, short-term government debt amounted PKR 1,368 billion, of which PKR 537 billion outstanding MTBs and PKR 1,101 billion MRTBs. Compared to PKR 1,108 billion, PKR 656 billion and PKR 452 billion respectively in FY07, this represents a considerable increase in both the stock and the share of the Government debt, mainly due to an increase by 143 percent of direct Government borrowing from the SBP. The main factor for such development was the reluctance of commercial banks and other institutions to invest in government papers given the risks in a rising interest rate scenario. This trend continued in the second half of 2008. However, due to better liquidity conditions in subsequent months, banks started to offer higher amounts in MTB auctions conducted during 2009. In FY09, the Government of Pakistan issued 1,865 billion MTBs through 26 auctions held by the SBP. This shift in market preference enabled the government to reduce the stock of MRTBs.

In contrast, the share of PIBs in total domestic debt in FY08 declined compared to FY07 despite rise in its stock to more than PKR 410 billion due to similar considerations (reluctance to invest in long-term debt). In addition, the non-issuance of PIBs for two year (FY05 and FY06) had a negative impact on both the primary and secondary market activities of longer-term securities. Regular primary issuance of PIBs resumed from May 2006, and amounts of PKR 59.1 billion and PKR 29.4 billion were accepted during FY08 and FY09 respectively. By end FY09, the outstanding long-term portfolio of government securities included PIBs with maturity of 3, 5, 7, 10, 15, 20 and 30 years, with the 10-year PIBs being markets' preferred instrument with a cumulative investment of PKR 290 billion (66 percent of the total outstanding PIBs portfolio).

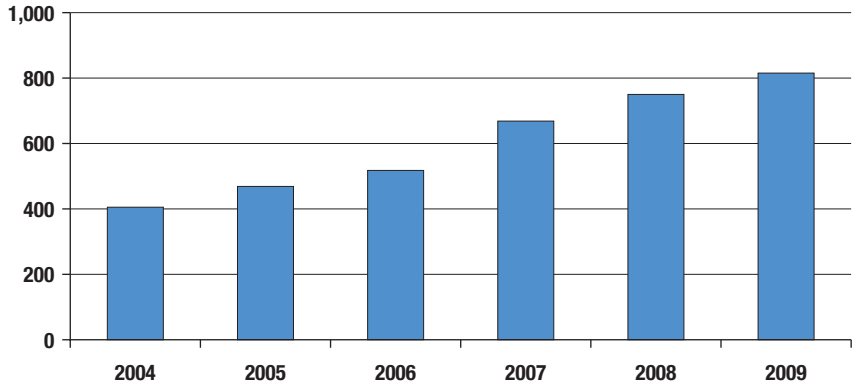
Banks dominate the primary and the secondary market of government securities in Pakistan. The share of non-bank institutions in the total amount of outstanding government securities was only 22.9 percent as at 30 June 2009. In June 2009, the SBP decided to increase the ratio of non-competitive bids from 10 percent to 15 percent. This measure was aimed at encouraging non-bank financial institutions and individuals to directly invest funds in government securities, thus broadening their distribution base. As a result, the share of the non-bank sector in the total holding of government securities has increased since then and it is expected that this trend would continue in the future.

Another instrument in the primary market is the Government of Pakistan Ijara Sukuk for which three auctions were held between September 2008 and June 2009. Aggregate bids of PKR 38.3 billion were offered by market participants and accepted.

5.9.2 Corporate Securities

A combination of factors such as the deterioration in the macroeconomic environment since FY08, the monetary tightening until the reversal of the stance in April 2009 and heightened security concerns, all served to dampen investor confidence in Pakistan capital market in FY09. The total value of Initial Public Offerings (IPOs) of corporate shares declined from PKR 15.38 million as of end-December 2008 to PKR 8.8 billion as of end-December 2009 and the listed value of new debt issues (Term Finance Certificates) was only PKR 3.0 billion as compared to PKR 26.5 billion in 2008. During the second half of the calendar year 2009, capital markets partially recovered. During 2009, the number of companies listed at the Karachi Stock Exchange remained steady (651 listed companies as of end-December 2009) and the total value of the capital registered increased from PKR 750.5 billion to PKR 814.5 billion at the end of 2009. Changes in the total listed capital in the period 2004–2009 are presented on Figure 7.

FIGURE 7: TOTAL LISTED CAPITAL AT KARACHI STOCK EXCHANGE (IN PKR BILLION)



Source: KSE

In 2009, the KSE listed shares of 4 new companies and 1 new debt instruments. As compared to 2008, the number of newly registered companies as well as the value of the newly registered shares has decreased. Table 4 provides information about new registrations and new issues at the KSE in the period 2004–2009.

The corporate bond market in Pakistan is still at an early stage of development with total public corporate debt issues accounting for just over one percent of GDP.

TABLE 4: KARACHI STOCK EXCHANGE MARKET PERFORMANCE INDICATORS

(In PKR million except companies, index and bonds data)

	31-12-2004	30-12-2005	29-12-2006	31-12-2007	31-12-2008	31-12-2009
Total No. of Listed Companies	661	661	652	654	653	651
Total Listed Capital—PKR	405,646.32	470,427.47	519,270.17	671,255.82	750,477.55	814,478.74
Total Market Capitalisation—PKR	1,723,454.36	2,746,558.97	2,771,113.94	4,329,909.79	1,858,698.90	2,705,879.83
KSE-100™ Index	6,218.40	9,556.61	10,040.50	14,075.83	5,865.01	9,386.92
KSE-30™ Index			12,521.54	16,717.10	5,485.33	9,849.92
KSE All Share Index	4,104.86	6,444.64	6,770.06	9,956.76	4,400.76	6,665.55
New Companies Listed during the year	17	19	9	14	10	4
Listed Capital of New Companies—PKR	66,837.0	30,090.28	14,789.76	57,239.92	15,312.12	8,755.73
New Debt Instruments Listed during the year	5	8	3	3	7	1
Listed Capital of New Debt Instruments—PKR	4,775.0	10,900.00	3,400.00	6,500.00	26,500.00	3,000.00
Average Volume of Daily Turnover—Shares in million	343.70	365.64	260.69	268.23	146.55	179.88
Average Value of Daily Turnover—PKR	17,408.95	33,583.29	31,610.71	25,262.97	14,228.35	7,450.75
Average Daily Turnover (Future™) YTD[17]	69.64	117.16	82.68	61.69	30.76	1.03
Average Value of Daily Turnover—YTD	4,914.25	15,461.42	13,587.63	9,077.61	5,229.97	89.66

Source: KSE

[17] YTD—Year to date

5.10 SECONDARY MARKET

In accordance with the legislation of Pakistan, all the activity of securities trading in the secondary market must be carried out only through professional securities market participants.

Professional securities market participants can include legal entities and individuals carrying out one or several types of activity (such as broker activity, dealer activity, asset management, depository services etc) and having been licensed to operate professionally in the securities market. These include banks licensed by the SBP and NBFCs licensed by the SECP.

The principal investors in the market are local banks, brokers, mutual funds, pension funds and insurance companies. There is a small pool of about 0.5 individual investors who hold about 5 percent of free float. The average free float is 20–25 percent. The foreign investors, primarily of Pakistani nationality residing abroad and some large institutional investors, hold about 1/5 to 1/4 of the free float.

The secondary market of corporate securities is concentrated at the three stock exchanges, in which the Karachi Stock Exchange plays a leading role. The overall volume of shares traded at the Karachi Stock Exchange decreased from 97.0 billion in FY04 to 63.3 billion in FY08 with a lowest level of 54.0 billion registered in FY07. During calendar year 2009, the average daily turnover increased from 146.6 million shares to 180.0 million shares.

Market capitalization of listed companies has been growing steadily from 2004 until 2007 to reach 49 percent of GDP in 2007. Following a sustained period of growth, market prices have fallen sharply in 2008 resulting in a decline of market capitalization to PKR 1, 858.7 billion as of end-December 2008, down from PKR 4,329.9 billion as of end-December 2007 (see Table 4). Average daily turnover in both volume and value in 2008 contracted to a half of the corresponding values in 2007. Because of deteriorating market conditions, short selling was also suspended in 2008. While these various developments were taking place on the domestic market, the impact of the global financial crisis also led to a substantial outflow of portfolio investment. Notwithstanding, the market capitalization partially recovered during 2009 reaching PKR 2,705 billion at end-December 2009. The KSE calculates three market indexes. The KSE-100 Index was introduced in November 1991 to represent price movements of top 100 shares traded at the KSE and was recomposed in November 1994. The KSE-All Share index was introduced in September 1995 and the KSE -30 Index was calculated for the first time in 2006. During the last two years the market was very volatile. Due to the deteriorated market conditions, the Karachi KSE-100 stock index, after climbing to record highs by end-April 2008, dropped by 40 percent by late August 2008. In response, on August 27, 2008, the authorities imposed a price floor on all stock prices. Over the year 2008, the KSE-100 lost 140 percent of its value. In 2009, the market partially recovered, which led to an increase of the KSE-100 by 60 percent to 9251.19 at the end of 2009.

The secondary market for Government bonds is thin and is dominated by the financial institutions i.e. banks. Retail investors and foreign investors have much smaller participation in the bond market. Many of the investors exhibit buy-and-hold behavior. Among the different types of government bonds, the T-bills are more actively traded, (about 99 percent of the turnover). The repo market is the most active segment of secondary market trading. During 2009, the total value of repo transactions was PKR 13,736 billion, which accounted for 66.3 percent of the turnover trading.

5.11 STOCK EXCHANGE TRADING

The Karachi Stock Exchange has introduced a computerized trading system known as Karachi Automated Trading System (KATS) to provide a fair, transparent, efficient, and cost effective market for the investors. The Exchange makes available KATS to the Members by providing trad-

ing workstation connections. The clearing of all the three stock exchanges of the country is centralized and handled by the NCSS.

Currently, the exchange conducts one trading session from Monday to Thursday and two sessions on Friday. Members send their orders from their trading workstation to the central unit of KATS. Orders entered during the pre-opening period (from 9:15 to 9:30) are queued and not executed at the time of entry. As each order is queued, the price at which it is expected to open will be calculated through KATS. Once the opening price is chosen, all trading shall take place at that single opening price and no price level transition will be allowed. During the normal trading hours (9:30 to 15:30), orders that cannot be immediately executed are queued for future execution in a specific order of priority mainly based in price and time of entry.

The trading at the KSE is divided into four distinct segments, each of which has its own clearing and settlement procedure. These are: T+2 segment on which most of the securities are traded, Provisionally Listed Companies' Segment, Spot (T+1) Transactions and Future Contracts.

T + 2 Segment

On this segment transactions are settled through the Clearing House that nets out the purchases and sales and the financial obligations thereon of each member/firm for the notified clearing period and issues instructions for deliveries of netted outstanding business. Payment from and to members are routed through the Clearing House.

Trading in Provisionally Listed Companies

The shares of companies which make a minimum public offering of PKR 150 million are traded on this segment from the date of publication of public offering documents. The period of contracts is notified by the Exchange. The outstanding contracts carried out under the provisionally listed companies are settled on the settlement date. Starting from the date of formal listing of new issue of securities, the trading is shifted to the Ready Board Counter under the T+2 segment.

Spot / T+1 Transactions:

For about 5 days before the date of closure of shares transfer book, notified by the company, transactions are settled on T+1 basis.

Transaction Costs

Brokerage fees on transactions are freely negotiable between the brokers and clients. See also section 6.2.4.

Stamp duty

There is no stamp duty for transfer settled through the Central Depository System, however, there is a one-time stamp duty at the rate of One Paisa per share at the time of deposit of securities in the CDS. Stamp duty is charged at 1.5 percent of the face value of the shares under the physical form of transfer.

5.12 OVER THE COUNTER (OTC) MARKET

The OTC market of corporate securities in Pakistan is governed by the Regulation Governing the Over the Counter (OTC) Market, 2005, issued by the KSE. A company may apply to the KSE for listing and trading on the OTC market. The regulation provides for minimum conditions that the company should meet to be eligible for listing. OTC market trading is quote-based and there are market makers appointed by the KSE among the members of the KSE. According to the regulation, the securities listed on the OTC market shall be traded through KATS system with suffix "OTC" added to its symbol. OTC transactions are settled in accordance with the settlement procedures applicable for the respective market segment.

5.13 DERIVATIVES

The Securities and Exchange Ordinance, 1969, defines types of securities that may be issued and traded on the

organized markets, including commodity and financial derivatives. Further, the stock exchanges are empowered to issue regulations for the trading, clearing and settlement of derivatives.

Derivatives at Karachi Stock Exchange include Deliverable Future Contracts (with maturity 30 days) and Cash Settled Future Contracts (with maturity of 30, 60 and 90 days) introduced in 2007 (also called Non-Deliverable Future Contracts). However, the trading with derivatives is very limited due to the absence of price discovery and convergence mechanics.

CHAPTER 6
SECURITIES SETTLEMENT SYSTEMS

6.1 ORGANIZATIONS AND INSTITUTIONS

6.1.1 Stock Exchanges

Pakistan has three stock exchanges located in Karachi, Lahor and Islamabad with the Karachi Stock Exchange being the biggest and most liquid. Only licensed brokerage companies can be members of the stock exchange. The stock exchanges are Self-Regulatory Organizations (SROs); accordingly, their members are regulated by the rules of the exchange. The three stock exchanges are supervised by the SECP.

6.1.2 Clearing Institutions and Securities Depositories

The process of clearing and settlement of a securities trade includes several key steps: the confirmation of the terms of the trade by direct market participants; the calculation of the obligations of the counterparties resulting from the confirmation process, known as clearance or clearing; and the final transfer of securities (delivery) in exchange for final transfer of funds (payment) in order to settle the obligations. Each of these steps can typically be accomplished in one or more ways: in some countries one institution performs all the clearing and settlement activities, while in other cases, like in Pakistan, these functions are divided between several institutions.

There is one clearing company in Pakistan—the National Clearing Company Ltd (NCC). It operates the National Clearing and Settlement System (NCSS), which is a fully automated electronic system for clearing of transaction from the three stock exchanges in a centralized manner.

There are two central securities depositories in Pakistan, one for government and one for corporate securities. Both depositories hold securities in book entry (dematerialized form).

The SBP owns and operates the central securities depository for government securities and plays the role of custodian. The securities settlement is integrated into PRISM. Banks maintain a SGLA with the SBP and so-called DEPO (securities) accounts in PRISM for the settlement of government securities. Different type of accounts that participants hold with the SBP for settlement purposes are explained in section 7.1. Debt Policy Coordination Office is responsible for the oversight of the government securities market and the implementation of the debt management strategy.

The Central Depository Company (CDC) operates the Central Depository System (CDS) for corporate securities (equities and bonds). Almost all transactions negotiated at the three stock exchanges are settled through the CDS, upon instructions received from the NCSS. The CDC is supervised by the SECP. The CDC is the sole National Numbering Agency for Pakistan and issues International Securities Identification Number (ISIN) to standardize identification of local securities for trading and settlement in the country and abroad.

TABLE 5: SIX YEAR OPERATIONAL DATA OF THE CDS

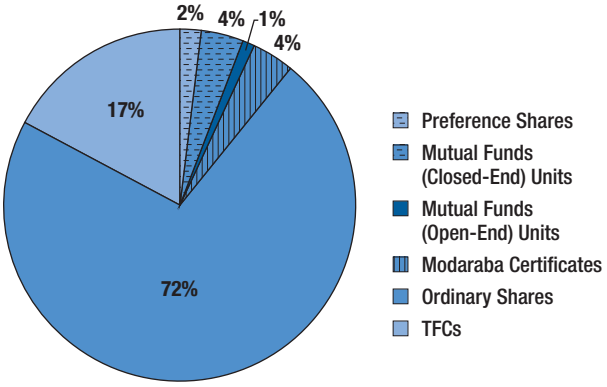
Year	Jun-04	Jun-05	Jun-06	Jun-07	Jun-08	Jun-09
Account Holders/Participants	420	461	539	541	591	611
CDS Live Securities	542	573	613	658	695	722
Shares available in CDS (No. in billions)	11.27	17.68	33.27	46.11	55.69	65.08
Investor Accounts (individual and corporate)	13,483	29,155	41,266	41,079	43,985	51,984
Number of Securities in Investor Accounts (in billions)	3.15	5.46	8.99	11.45	15.41	20.20

Source: CDC.

The CDS maintains accounts of both its members and their customers (individuals and companies). As at the end of FY09, there were 611 participants in the CDS and 51,984 individual accounts. The number of shares registered and transferred in book-entry form in the CDS reached 65 billion of which 20 billion were held in investor account. Table 5 shows six years operational data of the CDS.

Out of 695 securities held in the CDS system as at end-June 2008, 72 percent were ordinary shares, 17 percent constituted TFCs with the remainder made up of preference shares, mutual funds units and Modaraba certificates (see Figure 8).

FIGURE 8: BREAKDOWN OF SECURITIES HELD IN THE CDS



Source: CDC

6.2 SECURITIES CLEARING AND SETTLEMENT PROCESS

6.2.1 Description of the Process

Corporate Securities

The NCSS is an electronic clearing and settlement system which was developed to replace the individual clearing houses of Pakistan's three stock exchanges. Members of the NCSS (clearing members or CMs) are brokers and non-broker companies. As of September 2009, the NCSS had 297 broker and 124 non-broker clearing members (including 21 banks, 7 DFIs and 82 mutual funds).

Trades and transactions cleared by the NCSS, under Balance Order Multilateral Netting with T+2 and T+1 settlement cycle, are of three types, namely Exchange Transactions, Exchange Trades, and Non-exchange Transactions. Exchange Trades are locked-in contracts between broker CMs executed through exchange trading system in the regular market. Exchange Transactions are locked-in contracts between broker CMs executed through exchange trading system in the CFS Market. In addition, net buy or net sell position of broker CMs based on their futures contracts at the close of Futures Contract Period are transmitted to the NCSS for clearing and settlement.[18] Trade data are received in the NCSS from the exchanges on a real time basis.

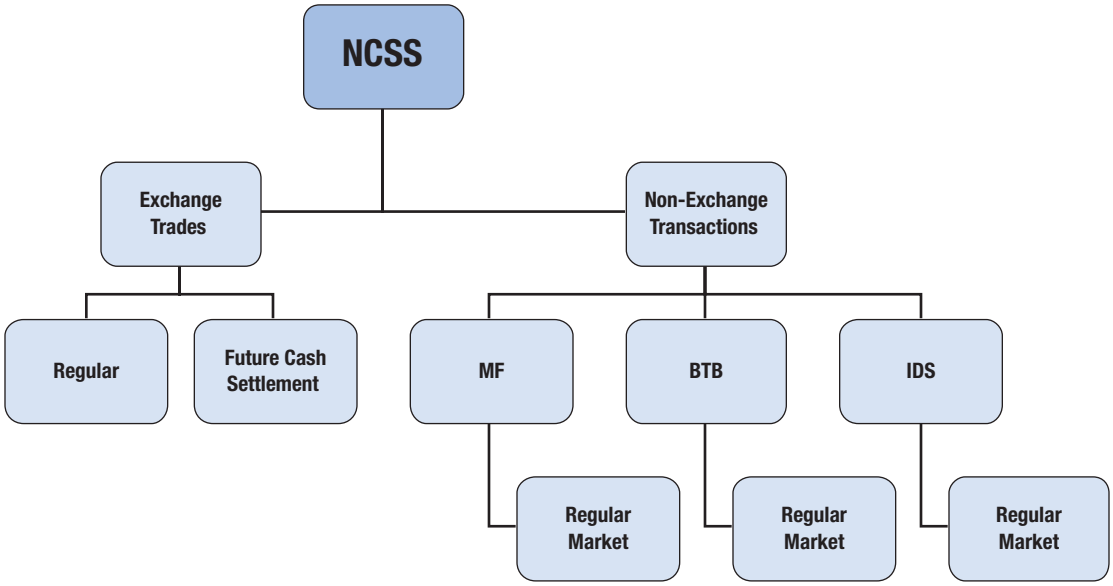
18 The CFS and future contracts market was discontinued in 2009. Trades with financial futures were re-introduced in 2009.

Non-Exchange Transactions are generated and recorded in the NCSS based on underlying Exchange Trades/Transactions and are classified into three categories handled by three sub-systems:

- Broker to Broker (BTB) Delivery System facilitates non-Exchange transaction between broker CMs of different exchanges based on underlying exchange trade;
- Institutional Delivery System (IDS) facilitates non-Exchange transactions between broker CMs and non-broker CMs based on underlying Ready and Spot market trades;
- Margin Financing (MF) facilitates Broker CMs to arrange funds from other Broker/Non-broker CMs based on their purchases.

Types of trades and transactions cleared in the NCSS are shown in the figure below.

FIGURE 9: TYPES OF TRADES AND TRANSACTIONS CLEARED IN NCSS



Source: NCSS

In the third quarter of 2009, the NCSS cleared 7,463,056 exchange trades, 64,420 BTB transactions and 640,637 IDS transactions, valuing PKR 656.1 billion, 5.2 billion and 134.9 billion respectively.

For the purpose of cash settlement, each CM maintains a settlement account with one of the Designated Branches of a Settlement Bank.[19] As per the standing instructions provided under the Tripartite Agreement signed between the CDC, the Settling Bank and a CM, the Designated Branch debits/credits the settling account of the CM for NCSS money settlement, in accordance with NCSS Procedures for Pay&Collect. As of September 2009, there were 14 Settlement Banks with 26 Settlement Bank Branches.

19 A Settlement Bank is a bank approved by the NCC to provide settlement accounts to NCC clearing members. The NCC approves the list of branches of the Settlement Banks (Designated Branches) that are allowed to offer settlement services to the CMs.

Settlement Flow

After the transaction is executed at one of the stock exchanges between brokers, the stock exchange sends information to the NCSS in electronic form on the date of the trade (T). The NCSS performs trade matching and calculates brokers' positions on a multilateral net basis. These activities are performed on day before the settlement day (S -1). The NCSS generates Balance Order information which is sent to the buying and selling broker and to the depository of securities. The securities are then blocked after satisfaction of all money and delivery obligations of a particular clearing member. At the same time the NCSS generates payment orders and money receive orders for the buying and selling broker respectively.

The buying broker is obliged to make the payment by 12:00 on the settlement date and needs to ensure that the securities are available in its CDS account. Once the payment is made and a confirmation is received by the NCSS, the securities are unblocked and delivered to the account of the buyer. The NCSS settles securities trades on DVP Model 3 basis. [20] Whenever a broker has executed an order of a client, the broker shall transmit confirmation of such execution to the said client within 24 hours of the execution through any previously agreed mode of communication. A broker failing to deliver the above confirmation in time is subject to penalties, stipulated in the Rules of the NCC. Figure 10 shows the settlement flows of funds and securities.

Derivatives

Future contracts are marked to market (MtM) at the Daily Settlement Price and the calculated amounts are settled as detailed here below.

Net MtM losses are collected from members in cash on T+0 (at the end of the trade day) through the NCC. Net MtM profits are disbursed to members in cash on T+1 through the NCC. The final clearing occurs on the last day of the Contract Period at Final Settlement Price of that day on T+2 settlement basis through the NCC. However, MtM losses are collected daily, based on the closing price of the security in the spot market, till the time, the net positions are settled.

Members participating in the derivatives markets are subject to margin requirements. There is Initial Margin and Exposure Margin (MtM margin) requirement. The NCC keeps the deposited margin separately for each market and the margin deposited for trades in one market can not be used by the NCC for purpose other than to meet any obligations of the member in this specific market. Margin requirements and risk management procedures are defined in the Regulations Governing Risk Management of Karachi Stock Exchange.

Margins payable by a member can be in the form of cash, Margin Eligible Securities, and Bank Guarantee as specified in the SE regulations.

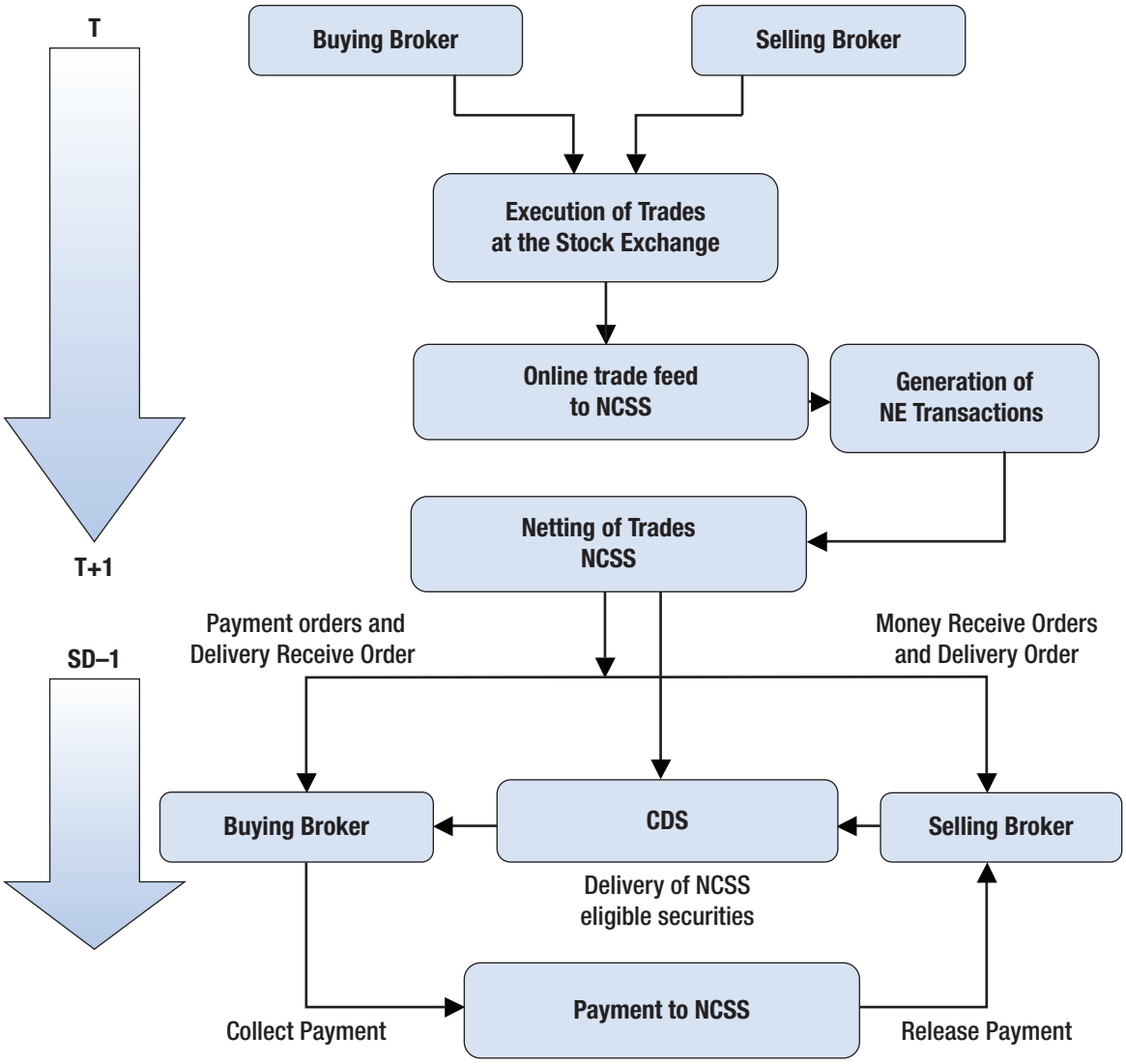
Other risk management tools include exposure limits for all markets, implementation of position limits in each market separately (for members and their clients) based on specified percentage of free-float of shares of a company, and circuit breakers.

Continuous Funding Settlement CFS MK-II

In 2005, the NCC introduced the CFS mechanism that was replaced later by the CFS MK-II. CFS MK-II creates an institutional pool of funds with the aim to providing liquidity to the market. It allows institutions to directly provide financing in the equity market through the NCC. The pool is available to investors and financier at any of the stock exchanges. As mentioned above, due to unfavorable market conditions and the potential risk for participants and investors, the CFS MK-II market was discontinued in 2009.

20 The three basic models of DVP settlement are described in *Delivery versus payment in securities settlement systems,* CPSS, September 1992. In DVP Model 1, the system settles transfer instructions for both securities and funds on a trade-by-trade (gross) basis. In DVP Model 2, securities transfer instructions are settled on a gross basis while funds transfer instructions are settled on a net basis. Finally, in DVP Model 3 transfer instructions for both securities and funds are settled on a net basis.

FIGURE 10: SETTLEMENT FLOWS IN SECURITIES TRANSACTIONS



Source: NCSS.

Government securities

For settlement of government securities transactions banks maintain two types of accounts with the SBP—a SGLA and a DEPO account in PRISM. Government securities balances in the SGLA accounts are uploaded into the DEPO accounts in PRISM at the beginning of each business day. DEPO accounts are divided into two types of sub-accounts, namely Own accounts and IP accounts. Own accounts are used by participants in the RTGS system to settle own securities. IP accounts are used by banks to hold and transfer securities on behalf of their customers. The securities balances in each sub-account are further divided in 4 sub-categories: available, restricted, blocked and other. Participants may transfer securities

between their Own account and SGLA or IP account of another participant, and from its IP account to any SGLA or IP account of another participant.

A transfer of government securities through PRISM is effected by making an appropriate entry in the DEPO accounts of the participant selling securities and the participant receiving the transferred securities. The settlement occurs on a DVP Model 1 basis and is executed immediately and irrevocably, subject to availability of funds and securities. In case of lack of funds or securities the respective DVP transaction will remain in a queue. Pending instructions may be canceled before the settlement occurs, and all pending transaction will be canceled by the system at the end of the day.

6.2.2 Management of Settlement Risks

Corporate securities

To eliminate principal risk in securities settlements, that is, the risk that the seller of a security delivers a security but does not receive payment or that the buyer of a security makes payment but does not receive delivery of the security, trades concluded at the stock exchanges are settled on a DVP Model 3 basis. Several additional tools are available to control settlement risk.

Payment Notice: As for the cash leg of the transactions, each settlement bank has to reserve in the account of the clearing member the amount the CM intends to use for trading activities. In case of non-payment, a Payment Notice of 30 minutes is generated and in case of failure to comply with this Notice, the CM is suspended or restricted by the NCC.

Recalculations of failed deliveries: A CM who fails to deliver securities at the settlement date is reported to NCSS. NCSS Securities may be bought-in or sold-out on failure by a CM to comply with NCSS Regulations. Buying-in may be effected on failure by a CM to deliver securities (fully or partially) on the settlement day S by the designated time, or any extension granted in the Designated Time pursuant to the NCSS Regulations. Selling-out may be effected on failure by a CM to pay money obligation on date S by the designated time, or any extension granted in the designated time pursuant to the NCSS Regulations. The procedure takes place by noon on date S. Buying broker who already made the payment will receive the delivery the next day subject to square-up. In case securities are not deliver the next day, such failed delivery shall be closed on S+1 whereby the buyer will get market value on the basis of highest price (between S-1 and S+1).

Blocked securities: As part of the DVP settlement mechanism, bought securities are delivered to buying CM's CDS account in blocked status. Blocked securities are available to buying CMs only after discharging their payment obligations.

Short delivery debits: In case of delay/non delivery by 15:30, the system additionally debits CMs' accounts with 15 percent margin of late/fail delivery of the previous day closing price.

Retrieval status: In case of money default by a CM, blocked securities in his CDS account are retrieved by the NCC for selling out.

Lending and borrowing of securities: Participants at the stock exchange can borrow from or lend to each other, or pledge securities, registered in book-entry form in the CDC, against the market transactions in order to facilitate the timely settlement. To further reduce the settlement risk in market transactions, the NCC is planning to implement securities Lending and Borrowing mechanism.

To control the risk of failure of a participant to pay its obligations resulting from price fluctuations in the futures market, the NCC has established margin requirements for participants. NCSS Pay&Collect is an automated system related to money settlement. It calculates single net settlement position for CMs who trade on more than one SE and disburses profits and losses of marked-to-market Cash Settle Future Contracts (Stock index Future Contracts).

Settlement of the cash leg of the securities transactions occurs in commercial bank money, thus the participants are exposed to the risk of failure of the settlement bank. The risk is partially controlled by the NCC establishing eligibility criteria for settlement banks. Such risk can be eliminated by moving the settlement of funds to the SBP through the RTGS system (settlement in central bank money).

For a description of the existing guarantee schemes see also section 6.3.

Government securities

All transactions are executed in real time gross settlement mode in PRISM for both the securities leg and the payment leg of the transaction, thus eliminating credit risk. Payments and deliveries executed in PRISM are final and irrevocable. Further, settlement on DVP Model 1 basis[21] ensures simultaneous transfer of securities against receipt of funds, thus eliminating principal risk.

6.2.3 Management of Operational Risks

The institutions providing the infrastructure for securities trading, clearing and settlement in Pakistan (i.e. the stock exchanges, the NCC, the CDC and the central depository for government securities) have implemented various measures to ensure informational security, operational reliability and business continuity of systems they operate. Operational security and reliability is ensured by the use of secured communication networks, access controls, systems' performance is monitored and incidents are reported regularly. All softwares (server side and client side) are documented and user manuals are provided to respective stakeholders. Business continuity measures include a hardware and software backup, contingency plan for business continuity and recovery procedures and data storage and warehousing.

21 Settlement for both securities and funds on a trade-by-trade (gross) basis, with final (unconditional) transfer of securities from the seller to the buyer (delivery) occurring at the same time as final transfer of funds from the buyer to the seller (payment). See *Delivery versus payment in securities settlement systems*, CPSS, September 1992.

As part of its BCP arrangements, the NCSS has established a secondary site which also serves as Disaster Recovery site.

Some of the features implemented by the CDC and NCC include:

- CDS/NCSS Identity Documents (IDs) and passwords: All CDS elements and CMs are allocated unique IDs and passwords through which to enter the system;
- Dial-in IDs and passwords: This feature is an additional layer of security for those clients who are connected to the CDS/NCSS through telephone lines;
- Terminal authentication: CDS elements can only get connected to us through their designated terminals;
- Two factor authentication—RSA (Rivest, Shamir and Adleman) and VPN (Virtual Private Network);
- Daily tape back-ups made to keep record of the CDS/NCSS status;
- A fully operational secondary processing site in Karachi. This site is installed with redundant hardware, software and requisite network to provide cost effective connectivity and support to all CDS users and CMs of the NCSS. A reliable data communication link is deployed to connect the remote site with the primary site and transmit the latest CDS and NCSS status to the remote site at the shortest possible intervals.

Government securities are settled through PRISM. For operational risk management in PRISM see section 4.2.3.

6.2.4 Pricing

New members of Karachi Stock Exchange have to purchase a seat from existing members. The price of the membership seat is freely negotiable between the buyer

and the seller. Investors pay brokerage commission on transactions, which is freely negotiable between the brokers and clients. In addition, stamp duty is charged at 1.5 percent of the face value of the shares under the physical form of transfer. There is no stamp duty for transfer settled through the CDS.

The NCSS charges its members a transaction fee. The CDS charges participants and other account holders an account opening fee, initial deposit fee, transaction fee, custody fee, CDS connection fee and documentation fees. Issuers/ Asset management companies are charged a new issue fee, fixed annual fee on eligible securities and other administrative/documentary fees.

With respect to government securities, the development cost for PRISM was fully borne by the SBP. The SBP does not charge entry fee, membership fee or transaction fee. However, the Operating Rules for Participation in PRISM include provisions for transaction charges.

6.3 GUARANTEE SCHEMES

According to the Clearing House (Registration and Regulation) Rules, 2005, the NCC is required to establish a clearing and settlement fund from which a clearing member's obligation to the clearing house may be satisfied, in case of default of such member. This is a loss-sharing arrangement funded by a part of clearing and settlement fee paid by the members.

The clearing and settlement fund may be divided into sub-funds, each of which can be utilized to discharge obligations for any particular service for which the clearinghouse has assumed responsibility.

6.4 SECURITIES LENDING

Participants at the stock exchange can borrow from or lend to other participants, or pledge securities, registered in book-entry form in the CDC, in order to facilitate the timely settlement of market transactions. Rules for securities lending are framed in the SECP Directive With Regards to Transfer of Book-entry Securities at the Central Depository System, September 2008. To further reduce the settlement risk in market transactions, the NCC has started developing a securities Lending and Borrowing mechanism as part of its strategic development plan.

6.5 INTERNATIONAL LINKS AMONG CLEARING AND SETTLEMENT INSTITUTIONS

At present, the two CSDs in Pakistan are not linked to foreign or international CSDs: the two depositories do not hold accounts with foreign CSDs, nor do foreign CSDs hold accounts with local depositories.

To enhance coordination with international depositories, the CDC has signed a number of MoUs with regional and international depositories. These include Japan Security Depository Centre, Depository Trust & Clearing Corporation, USA, Thailand Securities Depository, Thailand, Abu Dhabi Securities Market, U.A.E and Dubai Financial Market, U.A.E. These MoUs entail cooperation in the areas of technology exchange, customer care, operational procedures, mechanism for cross-border listing of securities and exchange of information and provide an excellent opportunity to the CDC to learn and share experiences with the world's largest depositories.

CHAPTER 7

THE ROLE OF THE CENTRAL BANK IN SECURITIES SETTLEMENT SYSTEMS

7.1 SETTLEMENT

Operation of PRISM

The SBP is at the centre of the national payment and securities settlement systems. It plays a major operational role as operator and owner of the PRISM and the CSD for government securities, which is part of PRISM. PRISM was launched in July 2008 with the aim to reduce systemic risks that could arise from wholesale funds and government securities transfer activities. The SBP's power, rights and responsibilities with respect to payment and securities settlement systems derive from the PSEFT Act, 2007.

Provision of settlement asset and accounts

The SBP offers the asset that is used for the settlement of interbank obligations originating from financial market transactions or from the clearing of cheque transactions. The SBP offers central bank accounts in both funds and securities to all banks. Banks maintain current accounts with the SBP for maintaining their cash reserve balances in accordance with the CRRs. In order to facilitate the settlement of government securities, the SBP offers to banks DEPO and SGLA, in addition to cash settlement accounts.

Facilitation of innovation

The introduction of the RTGS system for the settlement of interbank payment and the introduction of electronic book-entry system for government securities constitute only part of a broader program of the SBP to modernize payment and settlement systems in Pakistan. The SBP has been working together with the private sector for the introduction of new payment instruments and channels for making retail payments and for increasing the security and operational reliability of the existing instruments in line with the international standards and best practices. Furthermore, the SBP has contributed considerably to the improvements to the legal and regulatory framework for payments.

Finally, the SBP is engaged in educational efforts to raise awareness among consumers of the new payment instruments and services. The SBP issues guidelines both in the English and Urdu languages and requests banks to disseminate this information to their consumers. The SBP is also encouraging the financial institutions to appropriately educate their customers on the launch of new payment products and services. A notable example is the comprehensive media campaign launched by the United Bank Limited Pakistan to educate customers on their new mobile banking and prepaid VISA cards services introduced for the first time in Pakistan.

7.2 PAYMENTS SYSTEM OVERSIGHT

The PSEFT Act, 2007 entrusts the SBP with powers to oversee payment systems, payment instruments and providers of payment services. According to Art. 1, the SBP is responsible for supervising and regulating Payment Systems and Electronic Fund Transfers in Pakistan, as well as providing standards for protection of consumers. In carrying out its mandate, the SBP may designate or revoke the designation of a payment system in Pakistan. In doing so, the SBP can issue rules, guidelines, circulars,

by-laws, standards or directions as it may consider appropriate in respect of payment systems, the conduct of all or any of the service providers, operators of payment systems or issuers of payment instruments.

The SBP is the overseer of the cheque clearing system NIFT and other retail payment systems, such as payment card switches, remittance service providers and providers of mobile payment services.

The SBP is in the process of developing a comprehensive oversight strategy and methodology for conducting oversight activities with respect to PRISM and retail payment systems. The SBP is not currently involved in the oversight of clearing and settlement of corporate securities.

An internal Payment System Policy committee has been established wherein all the key stakeholders (SBP departments) are represented. There are plans to expand the scope of the committee by including representatives of key external stakeholders from the private and public sector.

The SBP cooperates with the SECP in regard to the oversight and regulation of NBFCs. The responsibilities, working relationships and information sharing between the two institutions are defined in a MoU between the SBP and the SECP (September 2003). The SBP senior management meets regularly with the banking community to discuss issues relating to payment systems development. Ad-hoc working groups on specific payment-related topics (such as the implementation of the RTGS project) have been formed with the participation of experts from the central bank and commercial banks.

Information on the development of payment infrastructure and payment instruments in the country is included in the annual report of the SBP, which is published on its website.

7.3 MONETARY POLICY AND PAYMENT SYSTEMS

See Chapter 2.5.1.

7.4 THE ROLE OF THE CENTRAL BANK IN CROSS-BORDER PAYMENTS

The SBP is playing an active role in promoting safe and efficient international remittance services. The SBP has developed continuous interaction with banks and Exchange Companies to promote the remittance business. The SBP established a Task Force on Remittances in 2008. In FY08, the SBP initiated reform process in the Exchange Companies sector with a view to bringing better market discipline through enhanced transparency, disclosure, strong monitoring, supervision and enforcement. In 2009, the SBP approved the Remittance Card Scheme of Askari Bank. The scheme has been designed to increase the outreach of remittance services to underserved population and to reduce costs. Another breakthrough related to the remittances was the launch of the Pakistan Remittance Initiative by the government and the State Bank of Pakistan with the goal to boost and facilitate the flow of remittances sent home by non-resident Pakistanis.

The SBP is a member of the ACU, which was established in 1974 to facilitate cross-border trades and regional cooperation of the South Asian countries. ACU is a system for clearing payments among the member countries on a multilateral basis. All transactions to be cleared through the ACU are handled by authorized banks in the same manner as other foreign exchange transactions. Authorized banks may enter into correspondent arrangements with banks in the other countries participating in the clearing union.

For settlement and accounting purposes the banks maintain ACU dollar accounts.[22] The excess liquidity in either direction is required to be settled by the central banks in

22 The common unit of account of ACU is the Asian Monetary Unit which is equivalent in value to one USD.

the countries concerned through the ACU mechanism. Each central bank receives and pays US dollars from/to the domestic participants for the purpose of funding or for repatriating the excess liquidity in the ACU dollar accounts maintained by the participants with their correspondents in the other participating countries. Similarly, the central banks receive or deliver US dollars for absorbing liquidity or for funding the ACU dollar (vostro) accounts maintained by the domestic participants on behalf of their overseas correspondents.

ACU Euro has been included as the second ACU currency effective from January 1st, 2009. The ACU Euro is equivalent in value to one Euro. Accordingly, transactions under ACU Mechanism, in addition to ACU dollar, may also be denominated and settled in ACU Euro effective January 1st, 2009. Further, to encourage the banks to maintain reasonable/sufficient balances in their accounts to ensure timely payments, the ADs have been permitted to pay/receive interest, at their discretion, on ACU dollar and ACU Euro accounts as per mutually agreed terms and conditions.

7.5 PRICING POLICY

Costs for the development and the implementation of the RTGS system were fully borne by the SBP. The SBP does not charge entry fee, membership fee or transaction fee. However, the Operating Rules for Participation in PRISM include provisions for transaction charges. Banks are free to determine charges they apply for sending customer payments via PRISM.

CHAPTER 8
SUPERVISION OF SECURITIES SETTLEMENT SYSTEMS

8.1 SECURITIES REGULATOR SUPERVISORY AND STATUTORY RESPONSIBILITIES

The Securities and Exchange Commission of Pakistan (SECP) is responsible for encouraging the organized development of the capital market, the corporate sector and the insurance market in Pakistan, and promoting and regulating development of Private Pension Schemes and Funds.

The SECP is entrusted with the performance of the following functions among others:

- regulating the issuance of securities;
- regulating the business of stock exchanges and any other securities markets;
- supervising and monitoring the activities of any central depository and stock exchange clearinghouse;
- registering and regulating the stock brokers, sub-brokers, share transfer agents, bankers to an issue, trustees of trust deeds, registrars to an issue, underwriters, portfolio managers, investment advisers and such other intermediaries who may be associated with the securities markets in any manner;
- proposing regulations for the registration and regulating the collective investment schemes, including unit trust schemes;
- promoting and regulating SROs including securities industry and related organizations such as stock exchanges and associations of mutual funds, leasing companies and other NBFCs;
- ensuring and monitoring compliance by insurers, insurance surveyors and insurance intermediaries of all laws, rules and regulations pertaining to insurance;
- regulating professional organizations connected with the insurance business;
- calling for information from and undertaking inspections, conducting inquiries and audits of the stock exchanges and intermediaries and SROs in the securities market;
- considering and suggesting reforms of the law relating to companies and bodies corporate, securities markets, including changes to the constitution, rules and regulations of companies and bodies corporate, stock exchanges or clearing houses;
- promoting investors' education and training of intermediaries of securities markets.

According to the Act for the establishment of the Securities and Exchange Commission of Pakistan, Act No. XLII of 1997, the Federal Government shall appoint a Securities and Exchange Policy Board consisting of nine Members. Five of the members shall be executive officers and four shall be appointed by the Federal Government from

the private sector, each of whom is well-known for his integrity, expertise and experience in the spheres of commerce and industry (including in particular the securities industry), corporate law, accountancy, financial services, investment, insurance, banking, academia or other related relevant fields of expertise.

The Board is responsible for policy making, coordination with the Federal Government and oversight of the performance of the SECP. It also specifies fees, penalties and other charges chargeable by the SECP.

The Board and the SECP are empowered to issue regulations under the Act for the establishment of the Securities and Exchange Commission of Pakistan (Art. 40) and impose penalties for the violation of rules and regulations of the Act (Art. 40A). The SECP also is mandated to issue directives, codes, guidelines, circulars or notifications, and may conduct investigations "in respect of any matter that is an offence under the Act or any other law administered by the SECP".

All policy decisions and directives of the Board and the SECP respectively are published in the official Gazette and the Board and the SECP shall make such publications available to the public.

8.2 REGULATORY AND STATUTORY RESPONSIBILITIES OF SELF-REGULATORY ORGANIZATIONS

The securities exchanges, the NCC and the CDC are considered SROs in Pakistan. As such, they are empowered by the respective laws to issue regulations, operating rules, procedures and manuals, as well as to establish requirements for access and membership. The regulation and operating procedures allow the SROs to control risks (as required by the law) associated with the services they provide to the participants in the securities markets, including clearing and settlement of funds and securities, to oversee market participants and to collect and publish information about trading, clearing and settlement activities.

APPENDIX
STATISTICAL TABLES

Series A tables are statistics on payments and securities clearing and settlement in Pakistan and were completed following a standard model prepared in the context of SAPI. They slightly differ from the model due to data availability constraints. Series B tables are more general statistics related to the financial sector.

PAYMENTS AND SECURITIES CLEARING AND SETTLEMENT STATISTICS

SERIES A

TABLE A1: BASIC STATISTICAL DATA*

	FY04	FY05	FY06	FY07	FY08
Population (in millions)	149.65	152.53	155.37	158.17	160.90
GDP (USD billion)	98.00	109.60	127.50	144.00	167.60**
GDP per Capita (USD)	655.00	719.00	817.00	909.00	1,042.00
Real GDP (annual change in %)		9.00	5.80	6.80	5.80
Consumer price (annual change in %, period average)		9.30	7.90	7.80	12.00
Exchange rate PKR vs. USD					
Year end	58.2	59.7	60.2	60.4	68.2
Average	57.6	59.4	59.9	60.6	62.5

Source: SBP.

* The following conventions for notation are used in all Tables throughout the Appendix: "n.a." indicates data that are not available; "…" stands for data that are not applicable; "neg" indicates where data are very small relative to other relevant data in the table concerned; "prov" stands for provisional data

** Estimated.

TABLE A2: SETTLEMENT MEDIA USED BY NON-BANKS

(in PKR billion)

	FY04	FY05	FY06	FY07	FY08	FY09
Total notes and coins issued	617.5	712.5	791.8	901.4	1054.2	1231.9
Currency in circulation	578.1	665.9	740.4	840.2	982.3	1152.2
Total deposits excluding RFCDs	1759.6	2111.1	2466.1	3010.7	3439.1	3700.0
of which:						
Time deposits	1,056.6	1,280.5	1,498.9	1,893.3	2,162.4	2,162.4
Resident foreign currency deposits	145.7	180.3	195.5	207.3	263.4	280.4
Money aggregate M2	2485.5	2960.6	3406.9	4065.2	4689.1	5137.2

Source: SBP.

TABLE A3: SETTLEMENT MEDIA USED BY CREDIT/DEPOSIT TAKING INSTITUTIONS

(in PKR billion)

	FY04	FY05	FY06	FY07	FY08	FY09
Required reserves at the Central Bank						
In domestic currency	95.6	114.4	133.7	186.6	253.5	263.5
In foreign currency	0.5	0.7	0.7	0.8	0.8	0.8
Excess reserves at the Central Bank:						
In domestic currency	13.9	23.8	9.3	56.8	91.9	91.9
In foreign currency	.003	.015	.028	.000	.018	.018
Institutions' borrowing from the Central Bank[23]	173.2	189.7	200.3	268.9	216.5	216.5
Transferable deposits at other institutions						

Source: SBP.

[23] Including repos with the SBP.

TABLE A4: INSTITUTIONAL FRAMEWORK

(As of end June 2009)

	Number of Institutions	Number of branches
Central Bank	1	
Commercial Banks	36	8238
Of which		
State-owned banks	4	1608
Foreign banks	7	88
Development Finance institutions	7	
Specialized banks	4	536
Micro-finance banks	8	270
Non-bank financial institutions	127	n.a.
Postal Office	1	n.a.

Source: SBP, SECP.

TABLE A5: BANK NOTES AND COINS

(in PKR billion)

	FY04	FY05	FY06	FY07	FY08	FY09
Total currency issued	617.5	712.5	791.8	901.4	1054.2	1231.9
Total banknotes issued	611.9	705.7	784.2	893.3	1045.9	1223.5
Coins issued	5.6	6.7	7.6	8.1	8.3	8.4
Notes and coins circulating outside banks	578.1	665.9	740.4	840.2	982.3	1152.2

Source: SBP.

TABLE A6: ATMS, EFTPOS TERMINALS AND RTOBS

	FY05	FY06	FY07	FY08	FY09
Cash dispensers and ATMs					
Number of networks	n.a.	n.a.	2	2	2
Number of ATMs	1,028	1,612	2,294	3,121	3,999
Volume of transactions (in millions)	27.9	35.0	51.5	67.9	91.1
In foreign currency					
In local currency	27.9	35.0	51.5	67.9	91.1.
Value of transactions	153.7	211.0	316.2	453.0	668.5
In foreign currency (US$ million)					
In local currency (PKR billion)	153.7	211.0	316.2	453.0	668.5
EFTPOS					
Number of networks	n.a.	n.a.	2	2	2
Number of terminals	n.a.	n.a.	n.a	43,903	49,715
Volume of transactions (in millions)	12.9	10.9	15.6	17.5	18.3
Value of transactions (PKR billion)	42.8	32.4	53.7	68.9	89.6
RTOBs					
Number of branches	2,897	3,555	4,179	5,282	6,040
Volume of transactions (in millions)	2.9	21.0	30.7	36.9	47.3
Value of transactions (PKR billion)	1,094.7	6,773.7	10,089.7	13,317	13,543

Source: SBP.

TABLE A7: NUMBER OF PAYMENT CARDS IN CIRCULATION

	FY04	FY05	FY06	FY07	FY08	FY09
Total number of cards (million)	n.a.	n.a.	3.785	5.815	7.471	8.9
Cards with a cash function	n.a.	n.a.	0.071	0.134	0.789	0.881
Cards with a debit function	n.a.	n.a.	2.740	3.983	4.905	6.4
Cards with a credit function	n.a.	n.a.	0.973	1.698	1.777	1.7

Source: SBP.

TABLE A8: INDICATORS OF USE OF VARIOUS CASHLESS PAYMENT INSTRUMENTS

(volume of transactions, in thousands)

	FY05	FY06	FY07	FY08	FY09
Electronic Based	43,687	67,774	99,367	125,379	159,800
Paper Based	206,423	300,988	324,219	334,965	335,300
Total	250,150	361,292	423,586	462,212	495,100
% Composition					
Electronic Based	17.50	18.80	23.50	27.10	32.30%
Paper Based	82.50	60.60	76.50	72.90	67.70%

Source: SBP.

TABLE A9: INDICATORS OF USE OF VARIOUS CASHLESS PAYMENT INSTRUMENTS

(value of transactions, in PKR billion)

	FY05	FY06	FY07	FY08	FY09**
Electronic Based	1,291	7,040	10,497	13,688	15,540
Paper Based	70,363	87,851	113,655	137,874	139,860
Total	71,642	91,936	124,152	151,562	155,400
% Composition					
Electronic Based	1.80	7.70	8.50	9.20	10.00%
Paper Based	98.20	95.60	91.50	90.80	90.00%

Source: SBP.

TABLE A10: PAYMENT INSTRUCTIONS HANDLED BY SELECTED INTERBANK TRANSFER SYSTEMS

(volume of transactions, in thousands)

	FY05	FY06	FY07	FY08	FY09
Low value system (NIFT)	n.a.	52,835	62,397	71,250	73,605
In domestic currency	n.a.	52,835	62,397	71,250	73,605
Large value system[24]	n.a.	n.a.	n.a.	178	236
In domestic currency	n.a.	n.a.	n.a.	178	236

Source: SBP.

[24] The new large-value payment system PRISM was introduced on 1 July 2008.

TABLE A11: PAYMENT INSTRUCTIONS HANDLED BY SELECTED INTERBANK TRANSFER SYSTEMS

(value of transactions, in PKR billion)

	FY05	FY06	FY07	FY08	FY09
Low value system (NIFT)	n.a.	15,745	19,033	23,749	n.a.
In domestic currency	n.a.	15,745	19,033	23,749	n.a.
Large value system[25]	n.a.	n.a.	n.a.	51,086	62,226
In domestic currency	n.a.	n.a.	n.a.	51,086	62,226

Source: SBP.

[25] See footnote 2.

TABLE A12: SECURITIES AND ACCOUNTS REGISTERED IN CENTRAL SECURITIES DEPOSITORIES

	FY04	FY05	FY06	FY07	FY08
Number of securities registered					
SBP CSD	n.a	n.a	n.a	n.a	n.a
CDS	542	573	613	658	695
Number of participants					
SBP CSD	n.a	n.a	n.a	n.a	n.a
CDS	420	461	539	541	591
Number of investor accounts					
SBP CSD	n.a	n.a	n.a	n.a	n.a
CDS	13,483	29,155	41,266	41,079	43,985
Number of foreign investors	n.a.	n.a.	n.a.	n.a.	n.a.

Sources: SBP, CDC.

TABLE A13: SECURITIES HOLDINGS IN CENTRAL SECURITIES DEPOSITORIES

	FY04	FY05	FY06	FY07	FY08
SBP CSD					
Government Securities (in PKR billion)	717.92	790.02	780.94	1,068.82	990.77
CDS					
Corporate Shares (value in PKR billion)	447.39	692.26	1115.86	2102.29	2097.72
Units of TFCs/WAPDA Bonds/ Sukuks and Open-End Mutual Funds (Number in million)	9.42	11.39	65.09	52.15	69.24

Source: SBP, NCC, CDC.

TABLE A14: TRANSFER INSTRUCTIONS HANDLED BY SECURITIES SETTLEMENT SYSTEMS

(volume of transactions in millions)

	FY04	FY05	FY06	FY07	FY08
SBP CSD					
Government Securities	46,636	49,178	42,924	40,598	37,944
CDS					
Corporate Shares	96,957.75	88,301.20	79,454.30	54,042.38	63,316.12
Units of TFCs/WAPDA Bonds/ Sukuks and Open-End Mutual Funds	n.a	n.a	n.a	n.a	n.a

Source: SBP, NCC, CDC.

TABLE A15: TRANSFER INSTRUCTIONS HANDLED BY SECURITIES SETTLEMENT SYSTEMS

(value of transactions, in PKR million)

	FY04	FY05	FY06	FY07	FY08
SBP CSD					
Government Securities	9,271,915	9,496,921	3,700,567	3,143,609	3,029,869
CDS					
Corporate Shares	n.a	n.a	n.a	n.a	n.a
Units of TFCs/WAPDA Bonds/ Sukuks and Open-End Mutual Funds	n.a	n.a	n.a	n.a	n.a

Source: SBP, NCC, CDC.

SERIES B

TABLE B1: NUMBER OF FINANCIAL ENTITIES

	Jun-04	Jun-05	Jun-06	Jun-07	Jun-08	Jun-09
Central Bank	1	1	1	1	1	1
Commercial Banks	36	35	35	36	36	36
Of which						
State-owned banks	n.a.	4	4	4	4	4
Foreign banks	n.a.	11	7	6	6	7
Development Finance institutions	n.a.	5	5	5	6	7
Specialized banks	3	4	4	4	4	4
Micro-finance banks	n.a.	5	6	6	6	8
Non-bank financial institutions	n.a.	82	74	93	117	127
Modarabas	n.a.	30	29	27	27	27
Postal Office	1	1	1	1	1	1

Source: SBP, SECP

TABLE B2: BANKING SECTOR ASSETS

(year-end, in domestic currency, in billions)

	Jun-04	Jun-05	Jun-06	Jun-07	Jun-08	Jun-09
Deposit money in banks—Total assets	2799.6	3349.2	4029.2	4952.0	5513.0	6086.9
Deposit money in banks—foreign currency denominated assets	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Commercial Banks—Net Loans	1337.1	1795.0	2207.0	2427.3	2845.9	3090.9

Source: SBP.

TABLE B3: DEPOSITS

(year-end, in domestic currency, in billions)

	Jun-04	Jun-05	Jun-06	Jun-07	Jun-08	Jun-09
Demand deposits	604.7	756.7	842.9	991.2	1154.1	1257.1
Time deposits	405.4	564.1	836.9	1107.4	1290.2	1479.6
Savings deposits	1088.7	1203.1	1253.0	1397.5	1513.4	1580.1

Source: SBP.

TABLE B4: EQUITY

(year-end, in domestic currency, in billions)

	Jun-04	Jun-05	Jun-06	Jun-07	Jun-08	Jun-09
Deposit money banks	143.4	221.3	326.6	489.2	561.3	622.5
Other banking institutions	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Non banking financial institutions	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

Source: SBP.

TABLE B5: LOANS

(year-end, in domestic currency, in billions)

	Jun-04	Jun-05	Jun-06	Jun-07	Jun-08	Jun-09
Total credit to businesses	1208.6	1557.3	1839.2	2076.0	2508.0	3058.2
Total credit to individuals	142.3	246.6	339.8	403.0	412.0	397.6

Source: SBP.