

**PAYMENT, CLEARING AND SETTLEMENT  
SYSTEMS IN THE PHILIPPINES**



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## LIST OF ABBREVIATIONS

•	<b>AAB</b>	-	Authorized Agent Bank
•	<b>AAIIB</b>	-	Al-Amanah Islamic Investment Bank of the Philippines
•	<b>ABROI</b>	-	Association of Bank Remittance Officers, Inc.
•	<b>ADAPS</b>	-	Automated Debt Auction Processing System
•	<b>ATM</b>	-	Automated Teller Machine
•	<b>BAP</b>	-	Bankers Association of the Philippines
•	<b>BIR</b>	-	Bureau of Internal Revenue
•	<b>BOC</b>	-	Bureau of Customs
•	<b>BRSTN</b>	-	Bank Routing Symbol Transit Number
•	<b>BSP</b>	-	Bangko Sentral ng Pilipinas
•	<b>BTr</b>	-	Bureau of Treasury
•	<b>CAS</b>	-	Central Accounting System
•	<b>CBP</b>	-	Central Bank of the Philippines
•	<b>CCU</b>	-	Central Clearing Unit
•	<b>cFAS</b>	-	Financial Accounting System
•	<b>COCI</b>	-	Checks and Other Clearing Item
•	<b>sCoP</b>	-	Confirmation of Purchase
•	<b>CoS</b>	-	Confirmation of Sale
•	<b>COS</b>	-	Cash Order Slip
•	<b>CSA</b>	-	Client Securities Account
•	<b>CSD</b>	-	Central Securities Depository
•	<b>CTB</b>	-	Chamber of Thrift Banks
•	<b>DBP</b>	-	Development Bank of the Philippines
•	<b>DDA</b>	-	Demand Deposit Account
•	<b>DEC</b>	-	Document Exchange Center
•	<b>DoF</b>	-	Department of Finance
•	<b>ECCS</b>	-	Electronic Check Clearing System
•	<b>ECWS</b>	-	Electronic Cash Withdrawal System
•	<b>EPCS</b>	-	Electronic Peso Clearing System
•	<b>EFTIS</b>	-	Electronic Fund Transfer Instruction System
•	<b>FTP</b>	-	File Transfer Protocol
•	<b>GSD</b>	-	Government Securities Department
•	<b>GSED</b>	-	Government Securities Eligible Dealer
•	<b>HSM</b>	-	Hardware Security Module
•	<b>IBCL</b>	-	Interbank Call Loan
•	<b>IHAP</b>	-	Investment House Association of the Philippines
•	<b>ILF</b>	-	Intraday Liquidity Facility
•	<b>IPS</b>	-	Intrusion Prevention System
•	<b>LBP</b>	-	Land Bank of the Philippines
•	<b>LRTA</b>	-	Light Rail Transit Authority
•	<b>LVPS</b>	-	Large Value Payment System
•	<b>MICR</b>	-	Magnetic Ink Character Recognition
•	<b>MIPS</b>	-	Multi-transactions Interbank Payment System
•	<b>MRTA</b>	-	Metro Rail Transit Authority
•	<b>NBQB</b>	-	Non-bank with Quasi-banking functions
•	<b>OFW</b>	-	Overseas Filipino Worker

- **OMO** - Open-market Operations
- **OTC** - Over-the-Counter
- **PCD** - Philippine Central Depository
- **PCHC** - Philippine Clearing House Corporation
- **PDB** - Private Development Bank
- **PDDTS** - Philippine Domestic Dollar Transfer System
- **PDEx** - Philippine Dealing Exchange
- **PDS** - Philippine Dealing System
- **PDTC** - Philippine Depository and Trust Corporation
- **PSE** - Philippine Stock Exchange
- **PSSC** - Philippine Securities Settlement Corporation
- **RA** - Republic Act
- **RBAP** - Rural Bankers Association of the Philippines
- **RCU** - Regional Clearing Unit
- **RoSS** - Registry of Scripless Securities
- **RPS** - Retail Payment System
- **RRP** - Reverse Repurchase Agreement
- **RP** - Repurchase Agreement
- **SCCP** - Securities Clearing Corporation of the Philippines
- **SEC** - Securities and Exchange Commission
- **SMB** - Savings and Mortgage Banks
- **SRO** - Self-Regulating Organization
- **SSLA** - Stock Savings and Loan Associations

## INTRODUCTION

The landscape of Philippine payment, clearing and settlement system has gone a great deal of transformation in the past decade. Prior to 2000, the settlement of retail payment transactions relies heavily on cash, i.e. notes, coins and checks. Other mode of retail payment such as credit/debit cards, and e-money - which did not even exist yet were not widely used during those times due to lack of confidence by the public. On the other hand, the settlement of interbank payment transactions which were typically large-value in nature utilized a near-real time electronic system called the Multi-transaction Interbank Payment System or MIPS - owned and operated by a private company.

It was in December 2002 when the country's first real time gross settlement system known as the Philippine Payment and Settlement System or *PhilPaSS*<sup>1</sup> commenced operations to cater to the large value financial transactions of banks. The existence of *PhilPaSS* revolutionized the entire Philippine payment, clearing and settlement system. The system, owned and operated by the Bangko Sentral ng Pilipinas (BSP), settles interbank payment transactions by debiting/crediting the demand deposit accounts maintained with the BSP by the participating banks. The variety of payment transactions settled by the system, initially catering to large value payments, has been continually increasing as other systemically-important payment services get settled through the system. The latest addition to these transactions involves the process and settlement of remittance proceeds from Overseas Filipino (OF) workers.

The conservative nature of Filipinos especially when it comes to their finances made the use of cash and checks widespread in the Philippine financial system. The electronic forms of retail payments, i.e. card-based payments and e-money started to gain general acceptability only after 2000. The development and acceptability of electronic retail payment systems can be considered as supply-driven alternatives to cash and checks since banks use them as a marketing tool to maintain their client base.

Regulation of payment systems<sup>2</sup> in the Philippines is on a developmental stage. This is due to the lack of a legal framework that will govern the oversight authority and policies over the operations of payment systems in the country. Being where payment system regulation in the Philippines is, the government has been pro-active in addressing payments-related issues by drafting a payment system bill, entitled “The *Payment and Settlement Systems Act*”. Submitted to the Philippine Congress in mid-2011, the proposed bill intends to explicitly cover the general rules, regulations, policies and procedures that will ensure the safe and efficient operation of payments systems.

Side by side with the transformation of the payment systems in the Philippines is the transformation of the securities clearing and settlement systems. The transformation in these systems can be given credit to the private organizations that own and operate them. It is worth to mention however, that these organizations are under the regulations of the Securities and Exchange Commission (SEC). It is also the SEC that granted these organizations a Self-Regulatory Organization (SRO) status to promote a market-driven development of the financial markets.

In summary, the Philippines' matrix of payment, clearing and settlement systems mainly consist of the following:

### For funds transfer, clearing and settlement

<sup>1</sup> For further information, see Section 3.1

<sup>2</sup> For further information, see Section 1.1

- A large value payment system which settles interbank Peso funds transfer<sup>3</sup>
- An electronic check clearing facility<sup>4</sup>
- A clearing and settlement facility for US dollar funds transfer<sup>5</sup>
- Various retail payment systems

For securities clearing and settlement

- One clearing and settlement system for equities market
- Two clearing and settlement systems for debt market<sup>6</sup>

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<sup>3</sup> For further information, see Section 3.1

<sup>4</sup> For further information, see Section 3.5.1

<sup>5</sup> For further information, see Section 3.5.3

<sup>6</sup> For further information, see Section 4.2

## 1. INSTITUTIONAL ASPECTS

### 1.1 Legal and regulatory framework

With safe and efficient payments defined as the third pillar of central banking, it is imperative for the BSP is to seek for a payment system that is supported by a well-founded legal basis. Best practices and international standards require safe and efficient operations of payment systems because these are critical to the effective functioning of the financial system. The envisioned legal environment in the Philippines aims to include the general legal infrastructure in the country such as a law that will cover contracts, payments, securities, banking, debtor/creditor relationships and insolvency as well as specific statutes, cases, contracts and other relevant material relating to payments and settlements. In the current setting, the responsibilities of the parties to a payment and settlement system are fragmented and found in various laws and agreements, as follows:

#### 1.1.1 The New Central Bank Act (RA 7653)

Under Section 3 of the RA 7653, the BSP shall provide policy directions in the areas of money, banking and credit. It shall have supervision over the operations of banks and shall exercise such regulatory powers over the operations of finance companies and non-bank financial institutions performing quasi-banking functions and institutions performing similar functions. It shall also establish facilities for payment services such as interbank clearing under such rules and regulations as the Monetary Board may prescribe. Pertinent provisions related to payments and settlements are briefly described as follows:

Section 3 – The Bangko Sentral ng Pilipinas (BSP) shall supervise banks. One of its responsibilities is to promote and maintain monetary stability.

Section 30 – This contains provisions on payments of obligations of banks/quasi-banks placed under receivership and liquidation.

Section 60 – Checks representing demand deposits do not have legal tender power, but a check that has been cleared and credited to the account of the creditor shall be equivalent to delivery to the creditor of cash in an amount equal to the amount credited to his account.

Section 102 – Interbank Settlement – This section provides the BSP authority to establish facilities for interbank clearing under such regulations as the Monetary Board may prescribe. It indicates that the deposit reserves maintained by banks with the BSP shall serve as the basis for the clearing of checks and settlement of inter-bank balances subject to such rules as the Monetary Board may issue with respect to such operations.

#### 1.1.2 Electronic Commerce Act of 2000 (RA 8792)

Section 16 – states that “electronic transactions made through networking among banks or linkages thereof with other entities or networks, and vice versa shall be deemed consummated upon the actual dispensing of cash or the debit of one account and the corresponding credit to another.”

#### 1.1.3 The Negotiable Instruments Law (Act No. 2031)

The Negotiable Instruments Law can be considered as the oldest existing law on payment instruments which can date back to year 1911. This law contains provisions on how negotiable instruments are issued, drawn and used/paid.

#### **1.1.4 Civil Code of the Philippines (RA 386), as amended**

This law contains provisions on obligations and contracts and concurrence and preference of credits.

#### **1.1.5 The Insolvency Law (Act No. 1956), as amended**

This law intends to cover the entire subject of insolvency and bankruptcy.

#### **1.1.6 Memorandum of Agreements (MOAs)/Participation Agreements (PAs) and Other Regulations**

The BSP entered into various agreements with payment system operators and participants as well as issue policy regulations in order to lay the responsibilities of system operators/providers, parties and participants in the payment systems especially those that interface with PhilPaSS to facilitate the settlement of interbank payment transactions. Other policy regulations that cover payments-related products/services are embodied in separate BSP circulars issued to all banking institutions and the public in general for their guidance.

#### **1.1.7 Proposed Payment and Settlement Systems Act (House Bill 5260)**

The Act aims to promote the safe and efficient operations of the national payment and settlement system. It also intends to give explicit authority for the BSP over the country's payment systems through regulation, supervision and monitoring the payment, clearing and settlement systems that operate in the country in order to mitigate, if not eliminate, the inherent settlement, credit, liquidity, operational and legal risks involved in payment systems.

### **1.2 The central bank**

The BSP acts as the country's central monetary authority. Its mandate and authority over payment and settlement systems, which is supported by The New Central Bank Act (RA 7653), includes the following:

- To provide policy directions in the areas of money, banking, and credit
- To establish facilities for interbank clearing under rules and regulations prescribed by the Monetary Board

#### **1.2.1 Primary responsibilities**

The BSP's performs three (3) roles in the payments system, namely: 1) as operator of the RTGS system – *PhilPaSS*, 2) as policy maker on issues related to payments and settlements, and 3) as overseer of the payments system. The Payments and Settlements Office performs the operator-function as it maintains and operates *PhilPaSS*, the Payments and Settlements Steering Committee as the policy making body and the Supervision and Examination Sector-Core Information Technology Supervisory Group as the payments system overseer.

With Payments as the third pillar of central banking, the BSP endeavors to ensure that the payment systems remain safe and efficient considering that effective performance of financial systems in the economy depend on these. Systemically important payment systems can transmit economic shocks across markets and international borders. Poorly designed or operated payment systems can create economic disturbances, while well-managed systems help minimize these disturbances.

The BSP, in order to promote financial stability, exerts all efforts to ensure that time-critical payments are completed as expected especially of financial/interbank market transactions in order to facilitate and enhance economic processes, manage risks, and absorb shocks. Likewise, the payments system plays a critical role in the implementation of Central Bank's monetary policy through the settlement of domestic money market transactions, e.g. siphoning-off excess liquidity in the system. The more efficient the payment system, the sooner will the monetary policy changes get transmitted to the markets. The BSP, through the payments system, is able to monitor the behavior of the interbank money market and is able to effectively forecast of liquidity conditions in the economy. Given a reliable and efficient payment system with real time or same day settlement, the BSP is able to enhance the effectiveness of monetary policy tools used.

### **1.2.2 Provision of improved payment and funds transfer facilities**

The BSP provides payment and settlement facilities as mandated under specific provisions of The New Central Bank Act (RA 7653).

In the roadmap of Philippine payment systems, the BSP is working on the following strategies:

- Explore and implement appropriate available technologies to improve the extent of *PhilPaSS*' delivery of services to both internal (departments/offices) and external (banks) clients in order to achieve a faster, more efficient, secured and reliable system that will address the needs of its users.
- Expand the use of electronic payments services for both retail and large value payments systems to all user groups. This will involve making electronic retail payment systems accessible to individual consumers and of *PhilPaSS* to all banks and financial institutions maintaining DDA with the BSP, including banks' branches and regional offices, all ATM Network operators, and other systemically payment systems still settling outside of central bank money.
- Encourage business and government institutions to settle their payments via *PhilPaSS*. Large business entities using high volume of check payments as well as government agencies' payments to suppliers and third parties will be targeted participants in the settlement operations of *PhilPaSS*.
- Develop and continuously enhance the payments system risk monitoring and management measures in order to mitigate risks and lessen its impact in the payment systems. Ensuring efficient liquidity management for all players of the payments system will promote the smooth operations of the payments system; thus, will increase public confidence in financial systems and institutions in the economy.
- Improve payment systems oversight measures in order to ensure safe and reliable payment systems that are efficient and in accordance with local and international standards.

### **1.2.3 Provision of credit facilities for banks**

Aside from the overnight repos that the banks may avail with the BSP in case of liquidity problems, the BSP has also established liquidity facilities for the purpose of providing additional funds to enable a bank to settle its interbank obligations, subject to existing rules and regulations.

The Intraday Liquidity Facility (ILF) is a fully collateralized facility established to maintain the smooth and efficient operation of the payments system in order to avoid interbank payments

gridlock in the settlement process involving credit transfers, payments related to FX and securities transactions, net obligations from check clearing operation and other interbank or 3rd party payments. To avail of the ILF, banks and non-banks with quasi-banking functions (NBQBs) are required to execute a Participation Agreement, open a Client Securities Account (CSA) with the Bureau of Treasury (BTr), and pool the peso denominated scripless securities of the National Government into these accounts for use exclusively as collaterals. The government securities (GS) that will support the ILF availment, if any, are to be free and unencumbered and must have remaining maturity of eleven (11) days to ten (10) years. When used as collateral for an ILF transaction, the GS is valued based on the fixed rates at the prescribed time of the previous business day, from the applicable Reuters/Philippine Dealing Exchange (PDEx) pages or any other valuation benchmark prescribed by BSP.

The Overdraft Credit Line (OCL) facility is a short term credit facility intended to assist a bank experiencing unexpected or higher-than-usual volume of inward check transactions. The governing policies and procedures are provided under BSP Circular 681 in order to provide additional liquidity for banks encountering liquidity problems due to check clearing losses as well as protect the BSP against settlement exposures. The policy also aimed at improving the existing check clearing and settlement processes. Certain guidelines were established to manage temporary overdrawing incurred due to a bank's check clearing losses.

### **1.3 Banks, NBQBs and other financial institutions**

The Philippine financial system consists of banks and other financial institutions. Banks and NBQBs consist of all financial institutions engaged in the lending of funds obtained from the public; primarily, through the receipt of deposits of any kind. Other financial institutions are those that are non-banks but whose principal functions include lending, investing or placement of funds, and underwriters of securities, either for their own account or the account of others.

In the Philippines, the majority of payment service providers are banks. Though there are few non-bank payment service providers, they are not independent from the banks. Under the BSP charter, all banks and NBQBs, including their subsidiaries and affiliates engaged in related activities are supervised and regulated by BSP.

As of end-September 2011, there were 38 universal and commercial banks, with 4,775 branches. Among such commercial banks, 19 were privately domestic banks, 3 were government-owned banks, and 16 were foreign banks and their subsidiaries. Commercial banks are organized primarily to accept drafts and to issue letters of credit; discount and negotiate promissory notes, drafts, bills of exchange and other evidence of indebtedness; receive deposits; buy and sell foreign exchange; and lend money on a secured or unsecured basis. Expanded commercial banks, otherwise known as universal banks, are banks that have authority, in addition to commercial banking powers, to exercise the powers of investment houses, invest in the equity of companies engaged in businesses not related to banking and own up to 100% of the equity of financial allied undertakings other than commercial banks. Almost all commercial banks issue their own Automated Teller Machines (ATM) cards. There are three major ATM network providers in the Philippines and these are inter-connected with each other.

The thrift banks primarily accumulate the savings of depositors and invest them, together with their capital, in secured or unsecured loans; or in financing for house building and house development; in readily marketable debt securities; in commercial paper and accounts receivable, drafts, bills of exchange, acceptances or notes arising out of commercial transactions. Thrift banks also provide short-term working capital and medium to long-term

financing to businesses engaged in agriculture, services, industry, housing and other financial and allied services for its chosen market and constituencies, especially for small and medium-sized enterprises and individuals. There are four types of thrift banks operating in the Philippines. These are the Savings and Mortgage Banks (SMBs), Private Development Banks (PDBs) and Stock Savings and Loan Associations (SSLAs) and microfinance-thrift banks. As of end-September 2011, there were 70 thrift banks, with 1,324 branch offices.

Rural banks are organized primarily to make credit available and readily accessible in the rural areas on reasonable terms. Loans and advances extended by rural banks are primarily for the purpose of meeting the normal credit needs of farmers and fishermen, as well as the normal credit needs of cooperatives and merchants. As of end-September 2011, there are 622 rural and cooperative banks with 2,136 branches.

Specialized government banks are organized to serve a particular purpose. The existing specialized government banks are the Development Bank of the Philippines (DBP), the Land Bank of the Philippines (LBP), and Al-Amanah Islamic Investment Bank of the Philippines (AAIIB).

In addition to the foregoing banking institutions, as of end-September 2011, there were 15 non-banks financial intermediaries performing quasi-banking functions with 23 branches. Those non-banks without quasi-banking functions consist of 70 non-stock savings and loan associations with 104 branches, 6,451 pawnshops with 10,016 branches and 50 others with 13 branches – all under the regulation/supervision of the BSP.

#### **1.4 Other bodies (PCHC, PDS, ATM Consortiums, Credit Card Companies Other Self-Regulating Organizations (SROs) and Government Agencies)**

##### The Bureau of Treasury

With the transfer of the fiscal agency functions from the BSP to the Department of Finance (DoF), the Bureau of Treasury (BTr) has taken the function of booking government securities through the Registry of Scripless Securities (RoSS) effective November 4, 1996. RoSS is the official Registry of government securities maintained and administered by the BTr.

##### The Philippine Postal Corporation

Under Republic Act No. 7354, the Philippine Postal Corporation is authorized to issue domestic and international money orders. Any mailing patron can buy money order checks from their local post office; this may be drawn and payable to another person or to the person making such application, if he desires so. Money order checks are then transmitted to the beneficiary either through registered letter or speedy airmail. Upon receipt, domestic money orders may be presented for payment at the designated paying office, issuing office or commercial bank within 90 days from date of issue. For services provided, fees are collected by the issuing post office based on the aggregate or total amount applied for.

##### The Securities and Exchange Commission

The Securities and Exchange Commission (SEC), established on 26 Oct 1936 by virtue of the Commonwealth Act No. 83 or the Securities Act, was prompted by the need to safeguard public interest in view of local stock market boom at that time. Its major functions included registration of securities, analysis of every registered security, evaluation of the financial condition and operations of applicants for security issuance, screening of applications for broker's or dealer's license and supervision of stock and bond brokers as well as the stock exchanges.

Privately-owned payment service providers

Since all large-value payments are finally settled in the DDAs of banks in BSP and this type of payment is normally used by banks, there is no existing large-value payment system (LVPS) other than PhilPaSS. Retail payment systems (RPS) on the other hand are owned by private payment service providers, which are incidentally owned by the banks themselves through a separate corporation. Though majority of RPS in the Philippines are co-owned by the banks, there are few systems which are owned by non-banking institutions. These retail payment services are registered and supervised under the jurisdiction of the SEC.

## **2. PAYMENT MEDIA**

In the Philippines, payment instruments may be classified into cash or non-cash. Non-cash payment instruments may be sub-classified generically into check payments, direct fund transfers and card payments.

### **2.1 Cash**

By law, the BSP has the sole right and authority to issue currency in the Philippines. At present, currency notes are issued in denominations of 1000, 500, 100, 50 and 20; and, coins in 10, 5, 1, 25cts, 10cts, and 5cts. Although in recent years there has been an increasing tendency to use alternative payment methods, a large portion of payments to individuals is still made in the form of cash, especially in the areas of retail trade, land transportation and personal services. This explains the wide increase of cash in circulation from Php194.7 billion in 2001 to Php450.9 billion as of end-October 2011 or 131.59% in almost ten (10) years.

### **2.2 Non-cash**

There are six main non-cash payment instruments/media that are currently used in the Philippines, as follows:

#### **2.2.1 Checks**

Checks are commonly used by consumers for bills and small value payments. For businesses, checks are utilized as payment for purchases of goods and services. In the Philippines, banks exchange checks through Electronic Check Clearing System (ECCS) operated by the Philippine Clearing House Corporation (PCHC) for processing and consolidation. The check clearing results are then electronically transmitted to BSP for the corresponding settlement in the banks' respective DDAs.

The volume of checks cleared in the PCHC increased by 2.15% from 169.952 million in 2005 to 178.60 million in 2011. The increase in volume indicates that check is still the preferred mode of payment indicative of consumers' confidence and trust in such payment medium in spite of the availability of electronic payment instruments.

#### **2.2.2 Direct debit and credit transfers**

The direct debit and credit transfers are used mainly for the settlement of large value payments for small volume transactions such as Interbank Call Loan (IBCL) lending/borrowing, Php/USD trades/purchases as well as Government Securities trades and purchases. These direct debit and credit transactions covering large value payments settle through the country's real time gross settlement system called PhilPaSS (or Philippine Payments and Settlements System).

#### **2.2.3 Credit and debit cards**

There are at least twelve major credit cards issued in the Philippines. All credit cards in the Philippines have affiliations with major international credit cards such as Visa, MasterCard, Diners and JCB. Some domestic and international cards have access to the banks' ATM network in the Philippines. Several stores/retailers issue cards for use in their own chains.

Credit cards in the Philippines are usually issued by the banks which have formed part of their marketing strategy to increase the number of their customer base and improve income that can

be generated from retail consumer business. Credit card use is no longer limited to the ordinary purchase of goods and services by the cardholders. Banks have expanded its usage for other purposes such as cash advance, easy installment plan for purchases, link-up to savings and checking accounts of cardholders, etc. to attract more customers. On the other hand, most commercial banks and some thrift banks issue debit cards. Debit cards enable the holder to have his purchases directly charged to funds on his account at a deposit-taking institution (may sometimes be combined with another function e.g. that of a cash card or check guarantee card).

#### **2.2.4 ATM Cards**

The ATM card is a commonly used card issued normally by banks and can be used for account inquiry/information, deposits, withdrawals, bills payment, interbank funds transfer coursed through the network switches, I.e. BancNet, MegaLink, ExpressNet, NATIONLINK and ENCASH. Some of these switches have developed their own Point-of-Sale (POS) systems to allow their cardholders to pay for their purchases electronically through their accounts for credit to the retailer's account.

#### **2.2.5 E-money or stored value cards**

E-money is a kind of value stored electronically in a device such as a chip card or a hard drive in a personal computer. The BSP classifies e-money further as monetary value, stored electronically in an instrument or device, which can be withdrawn in cash and if issued by a bank shall not be considered as deposit. The most popular forms of e-money in the Philippines are SMART Money and Globe's G-Cash.

Stored Value Cards are prepaid cards in which the record of funds can be increased as well as decreased. It is also called an electronic purse. In the Philippines, these cards are commonly single use instruments and non-reusable. Typical examples of single use cards are those issued by the Light Rail Transit Authority (LRTA), Metro Rail Transit Authority (MRTA) and major telecommunications companies. A bank pioneered also the use of multi-purpose reloadable e-Cash that can be used for cash withdrawal through the bank's counter or automated teller machines or payment of bills to the accredited establishment of the e-Cash issuer.

#### **2.2.6 Electronic Banking**

Banking institutions in the Philippines provide electronic banking services which includes telephone banking, desktop banking and mobile banking. Desktop banking and telephone banking are common electronic distribution channels.

Most banking institutions offer services through their internet banking facilities such as account balance summary, request for account statements, funds transfer between own accounts or third party accounts, bills payments, checkbook request services and even mobile banking registration.

Likewise, most users of the electronic bill payment system that facilitates customers to pay their various utility bills (e.g. electricity, telephone and water bills, etc.) electronically are coursed through the various ATM network facilities of banks. Although credit card and direct debit are still the preferred method of payment.

### 3. PAYMENT SYSTEM

#### 3.1 Philippine Payment and Settlement System (PhilPaSS)

##### Overview

From 1995 to 2001, banks used the Multi-transaction Interbank Payment System (MIPS) for the settlement of their interbank transactions. MIPS is an electronic net clearing system operated by the Bankers Association of the Philippines (BAP) and Philippine Clearing House Corporation (PCHC) in coordination with the BSP. The demand deposit accounts maintained by banks with the BSP serve as basis for the settlement of interbank payments.

In December 2002, the Philippine Payment and Settlement System or PhilPaSS was implemented. Large-value interbank transactions and bank transfers were the primary transactions that cleared through PhilPaSS.

##### Institutional framework

The BSP is the owner and operator of the RTGS system commonly known as “PhilPaSS” and it is likewise designated as the settlement bank or central institution for the settlement of transactions that are processed through the system.

As the owner and operator of the PhilPaSS, the BSP is responsible for providing, maintaining and upgrading the system including system hardware and software; ensuring uninterrupted operations between the System and SWIFT (the network provider) and that adequate Continuity of Business (COB) plans are in place; and ensuring that adequate back-up files are available for continuous and efficient operation of the system.

As a settlement bank, where participant-banks maintain deposit reserves for compliance and settlement purposes, the BSP through PhilPaSS is responsible for maintaining the participants’ PhilPaSS accounts wherein all interbank transactions will be posted during the business day; receiving and authenticating electronic fund transfer instructions from the participants; ensuring/checking that the paying bank has sufficient balances and that debit entry is posted in its DDA while the corresponding credit entry in the beneficiary bank’s DDA; and providing feedback to the participants regarding their queries about their PhilPaSS transactions.

##### Participation

The application of PhilPaSS as the new settlement system required the participants’ use of SWIFT-based network and message formats to enable the participants to transmit their financial transactions to the system for processing and settlement. PhilPaSS ensures an electronic delivery system with real time settlement of sufficiently funded transfer or payment instructions.

As of end-December 2011, the following institutions participate in *PhilPaSS*:

- Thirty five (35) commercial banks
- Three (3) specialized banks
- Forty (40) savings and thrift banks
- Thirty (30) rural banks
- Thirteen (13) non-banks with quasi banking function (NBQBs)
- Two (2) ATM Networks

- Bureau of the Treasury (BTr)
- BSP-Department of Loans and Credit (DLC)<sup>7</sup>
- BSP-Payments and Settlements Office (PSO)<sup>8</sup>
- BSP-Provident Fund Office (PFO)<sup>9</sup>
- BSP-Supervision Departments
- BSP-Treasury Department (TD)
- Philippine Clearing House Corporation
- Philippine Dealing Exchange

Prior to active participation in the settlement operations of PhilPaSS, the banks are required to execute a Participation Agreement with the BSP.

### **Types of transactions**

The following transactions (with value dates equal to *PhilPaSS* business day) are accepted for processing:

- High-value Interbank transfers
- Sale and Purchase of government securities (GS) trades under outright and repurchase agreements with the BSP in connection with the latter's Open Market Operations
- Interbank Sale and Purchase of Primary and Secondary Market government securities (GS) trades via the Delivery vs. Payment (DvP) System
- Settlement of payments for the public (tertiary level) market trading of government securities
- Settlement of the peso leg of foreign currency transactions via the Payment vs. Payment (PvP) System
- Interbank settlement of Automated Teller Machines (ATM) transactions within the members of ATM network provider and settlement of inter-network transactions of ATM network providers
- Customer payment instructions
- Cash deposits/withdrawals of notes and coins – banks' head offices
- Cash deposits/withdrawals of notes and coins – banks' regional branches
- Results of check clearing
- Revenue Collections (Internal Revenue Taxes and Customs Taxes/Duties)
- Treasury Department (domestic) trades/purchases and lending/borrowing
- E-rediscounting, emergency and special facility loans
- Overseas Filipino (OF) remittances

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<sup>7</sup> DLC manages the e-rediscounting window and overdraft clearing lines of banks

<sup>8</sup> PSO manages the operations of *PhilPaSS*

<sup>9</sup> PFO manages the investment portfolio of BSP employees' retirement fund

- Withdrawal of banks' excess reserves
- Annual supervisory fees

There are no limits on the value or type of transactions that can be processed in *PhilPaSS* provided both counterparties are maintaining DDAs in *PhilPaSS* and the value dates of the transactions are equal to the current business date of *PhilPaSS*. If the transactions are future dated, the value dates should not be more than four (4) calendar days than the current value date of the system.

### Operation

Participants may issue system enquiries and secure settlement/status reports through the System by using the message types applicable to SWIFT-user (commercial) banks and PPS-FES user (thrift/rural) banks.

PhilPaSS Business Day opens at 9:00AM and closes at 5:45PM

The system has the following capabilities: real time accounting, availability of an on-line inquiries and on-demand reports; gridlock detection resolution; liquidity management (Intraday Liquidity Facility); payment queuing/prioritization; general ledger interface and system security, control and audit trails.

The system rules and regulations governing PhilPaSS are embodied in the Agreement for the Philippine Payments System via Real Time Gross Settlement (PPS-RTGS) and the Rules and Regulations Governing the Philippine Payments System via Real Time Gross Settlement that were signed and approved individually by the PhilPaSS participants.

### Settlement

In PhilPaSS, all transactions are processed and settled on a real time basis through its Central Accounting System (CAS) which prompts the accounting and recording of the settlement instructions, received from SWIFT (for SWIFT member banks) and PPS-FES (for non-SWIFT) , into the participants' DDAs with the BSP. CAS debits the account of the paying bank and credits the account of the receiving bank.

Batched transaction files are also settled in PhilPaSS on the day they are transmitted. These transactions consist of check clearing results, secondary trades/purchases of government securities, foreign exchange (US Dollars) trades/purchases & public market trades and interbank repos. ATM network funds/withdrawals are sent through Third Party System Providers, i.e., the PCHC, BTr, Philippine Dealing System (PDS), MegaLink ATM network, BancNet ATM network<sup>10</sup>, respectively.

Transactions shall be concluded by and among Participants during the settlement timelines, as follows:

TIMELINES	ACTIVITY
	<b>Back Value Window</b>
7:30AM 8:00AM	Posting/Settlement of PCHC Morning Clearing Returns
8:01AM 8:45AM	BSP/Interbank window for Losses in Morning Clearing Returns

<sup>10</sup> BancNet started using *PhilPaSS* in November 2011

9:00AM	RDDA balances (T-1) available on demand via EFTIS
	<b>Current Day's Window</b>
9:00AM	Start of <i>PhilPaSS</i> business hours Beginning balances generated for <i>PhilPaSS-RDDA</i> Regular window for same day interbank transactions Posting/settlement of other RDDA transactions Cut-off times for particular transactions: 11:00am - ATM transactions 12:00nn - BSP-ECWS 3:00pm - OFW remittance transactions 4:00pm - BTr-GS DvP/PSH - eDvP/Repo transactions 5:45pm - PCHC-EPCS/ECCS, BSP-RP/RRP, PVP, Interbank Borrowing/Lending
4:45PM 5:45PM	Trading and settlement for end-of-day liquidity and reserve positions During the day, banks can inquire their balances in <i>PhilPaSS</i> either through SWIFT/MT920 or PPS-FES Client System/MT950.
5:46PM 6:00PM	<i>PhilPaSS</i> window for manual settlements, if any.
6:00PM	<i>PhilPaSS</i> Close of Business
Up to 6:15PM	Final copy of <i>PhilPaSS-RDDA</i> balance via MT950

**From 8:00AM to 8:45AM**

BSP and interbank lending/borrowings to cover shortfall in reserve deposits with BSP arising from the results of the AM Returned Checks and Other Clearing Item (COCI) will be given value on the same date as the date of original presentation of COCI to PCHC.

**From 9:00AM to 5:45PM**

All interbank payments/lending/funds transfers, including GS and foreign exchange transactions, coursed through *PhilPaSS* will be given value on the date of the payments/lending/funds transfers. .

**Up to 5:45PM**

Interbank lending/borrowings to cover the shortfall in reserve deposits with BSP resulting from PCHC's regular (afternoon) check clearing operations will be given value on the date of the lending/borrowings.

**Risk management**

The BSP is not obliged to effect the transfer of funds in the deposit reserves maintained by banks and NBQBs if there are insufficient balances in the reserve deposits of the transacting (paying) parties.

Since transactions are settled gross, on a trade for trade basis and with finality subject to the availability of balances in the deposit reserves maintained by banks with the BSP, the related risks are eliminated. Each participant is responsible for ensuring the confidentiality, safety and security of its login IDs, passwords and authentication keys for activating the system and

initiating IBCL transactions. Each participant is legally bound by its electronic fund transfer instruction which it sent through the system without need of any other manually prepared confirmation, paper, or instrument, provided that the same has been authenticated by the BSP and provided further that they comply with the terms and conditions set forth in the Memorandum of Agreement. Both BSP and all PhilPaSS participants shall be responsible for ensuring that adequate continuity of business (COB) plans are in place for uninterrupted operations.

PhilPaSS has two (2) back-up systems – a local back-up system located within the BSP head office and an off-site location that can be made operational immediately in the event that the primary site is inoperable. In case the two back-up systems become inoperable due to extraordinary circumstances, the BSP can activate its existing Electronic Fund Transfer Instruction System (EFTIS) to allow the participants to send their interbank instructions to BSP for processing and settlement. All PhilPaSS participants will be duly advised through SWIFT and PPS-FES message/advisories on the contingency plan(s) that the BSP will initiate in case PhilPaSS' primary site is encountering technical problems.

In case a bank's SWIFT/PPS-FES computer-based terminals encounter connectivity problems with PhilPaSS, the contingent procedure requires the bank concerned to accomplish a COB Manual Settlement Form; to be transmitted via fax to BSP-Payments and Settlements Office (PSO) for the manual processing and settlement of the payment instruction, if any. After processing and settlement (signature-verification, encoding and authorization), the BSP-PSO shall inform the paying bank (via fax) that the requested manual settlement has been completed.

The BSP has adapted certain measures/strategies to mitigate risks associated with payments systems, e.g. credit, liquidity, settlement, operational and legal risks:

- a. Strict observance of *PhilPaSS'* value-added features to mitigate settlement risks
- b. Ensure strong adherence of participants to the membership criteria
- c. Restricting members/class of members which may pose significant risks to the systems
- d. Application of caps or limits on intraday exposures to the system by the participants along the lines of counterparty exposure that members themselves adhere to in the markets
- e. System limits so that no single party breaches such limits
- f. Delaying the availability of funds to the final customer till settlement is reached with finality
- g. Liquidity sharing or loss sharing arrangements in the system with appropriate contributions from the members

#### **Technical aspect**

##### **The system consists of the following components:**

##### **a. Central Accounting System (CAS)**

The LCSS/CAS is the main application in the system. Its basic function is to process incoming SWIFT settlement instructions from participants and prompt the accounting and recording of these transactions to the participants' DDA with BSP.

##### **b. SWIFT Network**

The existing global communication network of SWIFT is a component of the system that enables the participants to transmit their financial transactions to their counterparties

electronically. The participants are required to enroll to SWIFT FIN Copy Service to allow them to transmit directly their PhilPaSS transactions to BSP's LCSS/CAS for processing and settlement.

**c. Data Communications**

The existing data communications service provider (ORANGE BUSINESS UK LTD) by SWIFT is also a major component of the system that serves as the communication link between the PhilPaSS and the Participant's Computer-Based Terminals (CBTs).

**d. Philippine Payment System – Front-End System (PPS-FES)**

For non-SWIFT member banks (thrift/savings banks, financial institutions or non-banks with quasi-banking facility and rural banks), the PPS-FES was developed by the BSP's Information Technology, Infrastructure and Operations Department (ITIOD) to enable these participants to transmit their financial transactions to their counterparties through the PhilPaSS- CAS.

**e. BSP Gateway Server**

It acts as a transit point for the electronic transfer instructions and status files being transmitted by third-party system providers.

**f. BSP Core Financial Accounting System (cFAS)**

This is the general ledger system of the BSP wherein all accounting entries to the BSP's Books of Accounts books as well as the participants' DDAs are posted. It also generates the statements of account for the DDAs, which are sent electronically to the participants on a regular basis.

The system has the following capabilities: real time accounting, availability of an on-line inquiries and on-demand reports; gridlock detection resolution; liquidity management (Intraday Liquidity Facility); payment queuing/prioritization; general ledger interface and system security, control and audit trails.

**Pricing Policy**

There are no admission or membership fees for participation in PhilPaSS. A wide-scale use of PhilPaSS is encouraged to promote over-all financial stability. Participants, however, pay transaction fees for using the system.

The transaction and other fees (exclusive of SWIFT-related costs) collected from the participants are as follows:

A. Transaction fees	Transaction value	Fee per Transaction
1. Interbank (Debits)	1.00 - 100.00	FREE of Charge
2. FX Sales/Purchase via Payment vs. Payment (PvP)	101.00 - 500,000	Php 5.00
3. USD/GS/FIE/Equities Sale/Purchase via Delivery vs. Payment (DvP)	500,001 - 1,000,000	10.00
4. Results of Check Clearing Win / Loss	1,000,001 - 39,999,999.99	Ad Valorem Fee = Trans. Value x .00001
5. ATM Network/MegaLink		(Round to nearest

transactions		Peso)
6. Electronic Fund Transfer Instruction System (EFTIS)		40,000,000 and Above 400.00
7. Customer payments/transfers		
8. Manual processing of inter-bank transactions: RTGS/EFTIS		<b>P1,000.00 + Ad Valorem Fee (TV x .00001)</b> <b>Or Php 5,000.00, whichever is LOWER</b>
<b>B. Other Fees</b>		
1. (Online) Transaction inquiries		P100.00 per inquiry
2. S O A Request (Printout)		P100.00 per request
3. Intraday Liquidity Facility		Pending Implementation of the New ILF System
4. Monthly Access/Connection Fee		FREE
5. Annual License fee		FREE
<ul style="list-style-type: none"> <li>• Electronic Fund Transfer Instruction System (EFTIS)</li> <li>• Phils. Payments System-Front End System (PPS-FES)</li> </ul>		

## 3.2 Electronic Fund Transfer Instruction System (EFTIS)

### Overview

The BSP developed and implemented the Electronic Funds Transfer Instruction System (EFTIS) in 1997 to automate the Peso funds transfer instructions coming from authorized agent banks (AABs) to the BSP. The System ensures that such Peso funds transfer instructions are transmitted and settled promptly and efficiently without delay or with minimal manual intervention. The system's implementation was a joint effort between the Bankers Association of the Philippines (BAP) and the BSP utilizing Lotus Notes as the messaging software.

### Participation

EFTIS participants are those banks accredited by the Bureau of Internal Revenue (BIR) consisting of 22 commercial banks and the Bureau of Customs (BOC) consisting of 36 commercial banks.

### Types of transactions

Banks accept the public's (individual/corporate) payments of internal revenue taxes and customs duties in their capacity as AABs for the BIR and the BOC. EFTIS enables the AABs to electronically transmit funds transfer instructions representing their remittances of revenue collections (internal revenue taxes/customs duties) to PhilPaSS - for credit to the deposit account of the BTr-National Government maintained with the BSP. Bank's revenue collections consist of the following: a) BIR Tax Collections, b) BIR – Own Tax Liabilities, c) Customs Duties, d) Advance Import Duties, and e) Import Processing Fees.

Banks also use EFTIS to transmit transfer instructions to comply with reserve requirements of other intra-bank accounts with BSP, namely: Common Trust Fund (CTF), Trust, Other Fiduciary Accounts (TOFA) and Small and Medium Enterprise (SME) accounts.

As identified in BSP's Continuity of Business (COB) Plan, EFTIS also serves as the back-up messaging system in case SWIFT or PPS-FES Client System becomes inoperable.

### **Operation**

Banks are required to transmit Authority to Debit (AD) (electronic) instructions not later than 2:00PM of each transaction day. Those received after the cut-off time will be processed for value on the following working day. At the end of each month, the cut-off time is extended till 5:00PM to enable AABs to transmit the revenue collections collected for the day.

The BSP acts upon the AD electronically transmitted by the participating AAB to BSP. Upon receipt, BSP will test the contents of the AD against AAB's available balance in the demand deposit account ledger maintained by BSP and, if successful, post debits and credits so that an updated DDA balance for each day's transactions will be available by 5:00 PM on the same day. Posting of debits against the respective DDA for each AAB shall be subject to the sufficiency of funds available in said account.

It is the responsibility of each AAB to ensure that its DDA is sufficiently funded and, if inadequately funded, to source the required amounts to fulfill its requirements.

## **3.3 PhilPaSS - REMIT System (OFW Remittances)**

### **Overview**

One advocacy of the BSP is to help the Overseas Filipino Workers (OFW) send their hard-earned money safely and efficiently to their domestic relatives. To course their remittances through the formal channel - via the banks will ensure that the welfare of the OFW and their beneficiaries are properly safeguarded from remittance fraud and mishandling.

Major commercial banks extended banking operations overseas to offer remittances services for OFWs. These banks organized themselves into a formal organization, called the Association of Bank Remittance Officers, Inc. (ABROI), in order to set up standards to improve their operations governing OFW remittances and agreed not only to accept remittances for credits to their own banks but also for deposits to other banks.

The implementation of PhilPaSS-REMIT allows banks to use PhilPaSS as a settlement arm for OFW remittances in order to ensure the safe and immediate transfer and settlement of remittance funds into beneficiary accounts maintained in (beneficiary) banks' CA/SA system.

BSP ensures that the PhilPaSS-REMIT system has a feedback mechanism feature that requires the beneficiary banks to credit the OFW's beneficiary accounts within same day (Day 1) or at the latest on Day 2, if further validation of beneficiary accounts is needed. This system feature ensures that the OFWs' hard-earned money is properly safeguarded from remittance fraud, handling risks and undue delay.

### **Participation**

In May 2010, the BSP implemented the PhilPaSS-REMIT system. The system interfaces with PhilPaSS to cover the electronic settlement of overseas Filipino (OF) remittances that are received by the nine (9) private commercial banks, two (2) government-owned banks, and one (1) thrift bank from overseas branches or correspondent banks and partner remittances agencies

abroad but for further credit to beneficiary accounts maintained with other banks in the Philippines.

The requirements for participation in *PhilPaSS* -REMIT are:

- Participating bank maintains a demand deposit account with BSP
- Participating bank is involved in the remittance business
- Participating bank has a good membership standing with its bankers association

As of end-December 2011, *PhilPaSS*-REMIT participants consist of eleven (11) private commercial banks, three (3) government-owned banks and one (1) thrift bank. Prior to the active participation in the *PhilPaSS*-REMIT System, each bank is required to execute a Participation Agreement with BSP together with the submission of other required documentaries including the exchange of public keys between banks' authorized users and authorized BSP officer(s).

### Types of Transactions

The *PhilPaSS*-REMIT System is exclusively for the processing and settlement of remittance transactions received from banks which are for credits to the accounts of beneficiaries maintained with other banks.

### Operation

An overseas Filipino remits/sends funds either through the overseas branches of the participating banks or their non-bank remittance partners abroad. The remittances are then sent to the Philippines via wire transfer and received by the participating (remitting) banks. Using an interface system provided by the BSP to enable the banks' interconnectivity to *PhilPaSS*-REMIT, the remitting banks prepare and transmit their batched files indicating the details of beneficiary accounts to be credited, e.g. beneficiary name, amount, account number, branch etc. Upon settlement in *PhilPaSS*, i.e. debited from the Remitting Bank and credited to the Beneficiary Bank, the latter is informed on the accounts of the ultimate beneficiary to further credit the remittance funds. Once posted in beneficiary accounts, the beneficiary banks are required to inform the BSP and the Remitting Bank through *PhilPaSS*-REMIT on the posting status of remittance funds. The feedback mechanism serves as an effective tool ensuring that remittance funds reach the ultimate beneficiary on Day 1 or not later than Day 2.

The *PhilPaSS*-REMIT System business hours are as follows:

9:00AM	<i>PhilPaSS</i> Open for Business
9:01AM – 5:45PM	Settlement Timeline for <i>PhilPaSS</i> transactions
	Transmission Cut-Off time
3:00PM (Day 1)	Cut-off time for Transmission of OFW Remittance Text Files
4:00PM (Day 2)	Cut-off time for Bank's Updating of Report Files – OFW Remittances With Exceptions/Rejects (Previous Day's transmissions)
5:45PM	Cut-off time for OFW funds settlement <i>PhilPaSS</i> End of Day
6:00PM	<i>PhilPaSS</i> Close of Business/Log Off

Up to 6:15PM	Cut-off for Updating Report Files for Posting of Remittances to Beneficiary Accounts
Up to 6:30PM	Final Update/Summary of OFW Remittances Release of DDA Balances via MT950

### Settlement

Using an interface system provided by the BSP to enable bank's interconnectivity to *PhilPaSS-REMIT*, the remitting banks prepare and transmit their batched files indicating the details of beneficiary accounts to be credited, e.g. beneficiary name, amount, account number, branch, etc. Upon receipt of remitting bank's batch files, the system performs validation of such files (per OFW file structure) after which, remitting bank's DDA is debited and correspondingly, beneficiary bank's DDA is credited. The Beneficiary Bank in turn forwards settled transactions to the account of the Beneficiary/Customer using its own internal system.

The *PhilPaSS-REMIT* System is operating under the terms and conditions set forth in the Memorandum of Agreement (MOA) entered into by the BSP, ABROI, Bankers Association of the Philippines (BAP), Chamber of Thrift Banks (CTB) and the Rural Bankers Association of the Philippines (RBAP). The ABROI-member banks who are also members of *PhilPaSS*, are bound by the same requirements and responsibilities embodied in the MOA covering the various settlements in *PhilPaSS* as well as the respective Participation Agreements accomplished by each bank.

### Risk management

To mitigate the risks associated with the system, i.e., liquidity, system, operational, reputational, etc., the BSP performs the following roles as stated in the Memorandum of Agreement:

- To check if the remitting bank has sufficient DDA balance to cover the OFW remittance transactions transmitted for processing and settlement in *PhilPaSS-REMIT*
- To ensure compliance with control and security infrastructure, policies, procedures and guidelines as agreed upon
- To settle with finality and non-repudiation due to and from all participant banks, as debits or credits are posted to the respective DDAs maintained by participant banks with BSP
- To provide for an Intraday Liquidity Facility (ILF).

### Technical Aspects

The *PhilPaSS-REMIT* system defines the interface which links the participant banks with the BSP-Philippine Payments and Settlements System (*PhilPaSS*) for the settlement of remittances sent by Overseas Filipino Workers (OFWs) for credits to other banks using the standard message file structure. It provides the definitions of REMIT message formats, transfer methods and settlement process.

The communication and transfer method consists of:

#### Connection Type

Each Remit installation supports two initial "variants"

- Using VPN connection over Internet as the primary connection; or
- VPN over dial-up as the secondary/back-up connection

File Transfer Method

- Primary Method: File Transfer through Secure File Transfer Protocol (FTP)
- Secondary Method: through e-mail (activated only if needed )

**Pricing policy**

BSP charges PhP5.00 against the Remitting Banks' DDA for every electronic fund transfer instruction that settles in *PhilPaSS*, regardless of the amount of transaction. The fee is debited from the Remitting bank's DDA on a daily basis.

All beneficiary banks shall charge the standard amount for back-end fees of PhP50.00 per transaction against the proceeds of remittance funds that will be credited to the customer account(s) subject to annual review.

**3.4 Electronic Cash Withdrawal System (ECWS)****Overview**

The BSP implemented the Electronic Cash Withdrawal System (ECWS) in February 2006 in order to improve the processing and settlement of banks' cash withdrawals for their daily requirements for peso notes and coins in various denominations.

The use of *PhilPaSS* as the settlement system of ECWS eliminated the use and presentation of checks before cash withdrawals can be completed. ECWS also facilitated the reengineering of processes involved on previously transacted over-the-counter (OTC) cash withdrawals from the BSP. The system has made cash more convenient and efficient for the banks.

ECWS standardized the process of ordering various currency denominations by the introduction of a Cash Order Slip (COS), where banks specify their desired currency denominations subject to approval based on the availability of currency stock held at the BSP Cash Department. The amount approved in the processed COS is indicated in the SWIFT/PPS-FES message instruction sent to *PhilPaSS* for settlement, subject to available balances in the deposit account of the withdrawing bank. Once settled, a system-generated settlement electronic notification is transmitted to BSP-Cash Department to trigger the release of the proceeds of withdrawals to awaiting bank representatives.

The implementation of ECWS also resulted to man-hour savings for the banks in terms of time spent in check preparation, authorizing signatures and delivery to the BSP. With ECWS, bank representatives come to the BSP - only to take away the cash.

**Participation**

Participants involve twenty nine (29) withdrawing (Head Office) banks, the BSP-Payments and Settlements Office as operator of *PhilPaSS*, and BSP-Cash Department as the Unit responsible for servicing/releasing of currency notes and coins. .

**Types of transactions**

The system covers banks' cash withdrawals to secure various peso notes and coins for the daily cash requirements of their Head Offices and servicing branches.

**Settlement**

On Day 1, a withdrawing bank secures an approved COS indicating the requested denomination of currency notes and coins.

On Day 2, between 9:00AM - 12:00NN, banks electronically transmit MT 202 (SWIFT or PPS-FES) message instructions for the representing withdrawal transaction(s). The PhilPaSS account of banks shall be debited subject to available balances in their Demand Deposit Accounts.

By access to and notice of the real time settlement of withdrawal instructions through PhilPaSS, the BSP-Cash Department is authorized to process and prepare the requested denomination of currency notes and coins based on the pre-approved COS. Proceeds of the cash withdrawals are released only to the withdrawing bank's authorized representative(s).

### **3.5 Philippine Clearing House Corporation (PCHC) Clearing Operations**

#### **Overview and Framework**

The Philippine Clearing House Corporation (PCHC) was incorporated in July 1977 as a private corporation co-equally owned by all commercial banks enlisted as members of the Bankers Association of the Philippines (BAP). With the Clearing House Rules and Regulations approved and subsequently the arbitration mechanisms in place, PCHC commenced its live operations on 06 June 1980 and stood proud being the first automated Magnetic Ink Character Recognition (MICR) Check Clearing House in Southeast Asia. Its main purpose was to automate the check clearing system through the medium of MICR-encoded checks.

The objectives of the MICR Clearing Operations include the following:

- To effect, at a designated place, the daily exchanges between clearing participants of fully Magnetic Ink Character Recognition (MICR) encoded checks and other properly encoded demands;
- To provide reports to the BSP Accounting Department that serve as the basis for the settlement of exchanges;
- To report clearing participants with information which will enable them to balance, identify and trace items processed through the clearing operation; and
- To assist the banking and financial community in the development, design and installation of sound exchange practices intended to promote faster exchange of values between clearing participants.

PCHC provides check clearing services covering sixty-nine (69) geographical regions processing a daily average of about 700,000 clearing items from more than 6,000 participating bank branches nationwide.

In April 1998, with its mission to implement a single clearing region for the entire country, PCHC automated and initially took over the Outward Inter-Regional Clearing Operations and in October 2001 included the inward clearing operations thus completing the takeover of the entire Regional Clearing formerly managed by the BSP. On March 2003, the Out-of-Town bank branches which used to operate under a mail-based exchange were also included as part of the Inter-Regional Clearing Exchange, dramatically reducing the clearing period from 30-45 days to 5-7 days.

In 2004, PCHC further expanded its operational coverage by integrating seven (7) additional clearing regions (one (1) in Luzon and six (6) regions from the Visayas and Mindanao area) into what is now known as the "Greater Manila Clearing Exchange", thereby reducing the cycle of fund transfer from 5-6 days to a uniform of three (3) days within the covered regions.

More regions were added in the following years until 2010 whereby six (6) regions were integrated thus making the total GMA regions into 30 including Metro-Manila.

Also in 2005, PCHC completed the expansion project by converting the remaining BSP operated clearing regions into MICR/ECCS operation. PCHC operations now encompass the entire country – thirty (30) Greater Manila/Integrated Regions and thirty nine (39) Regional “local” exchange centers.

### **3.5.1 Electronic Check Clearing System (ECCS)**

In the course of promoting a faster exchange of value, PCHC started its Electronic Check Clearing System (ECCS) on 15 January 1999. Through ECCS, banks transmit clearing checks data to PCHC and deliver the corresponding physical items later. Net clearing value transmitted electronically shall be the basis of BSP in posting the DDA of every bank. Moreover, downloaded inward clearing checks files are used by computerized banks to debit the accounts of their individual clients.

Furthermore, the early submission of clearing results affect the timing and order of priority for the posting/updating of banks’ DDA with the BSP.

In August 2008, PCHC adopted digital imaging technology and through an external hard disk, provided the banks with clear images of their clearing items that complemented centralized check processing and verification system. The shift to digital media also replaced the use of microfilm in archiving the images of the checks processed by PCHC.

#### **Participation**

All commercial/universal banks (stockholder members), thrift/rural banks (associate members) and the BSP are participating in the MICR Check Clearing Operations. There are two classes of participants, namely: direct participants and indirect participants.

##### Direct participants

Direct participants are composed of the following stockholder member (commercial bank), and non-commercial bank which has met the required criteria of the BSP i.e. CAMELS, CAR, and affiliates/subsidiaries of stockholder participants, which have been provided a standby L/C by their mother institution.

##### Indirect participants

Indirect participants are the non-stockholder member that has an arrangement with a stockholder member.

##### Types of Transactions

Fully MICR encoded checks and other properly encoded demands are cleared through PCHC, including all types of checks and demand drafts drawn by regional branches of banks.

##### Operation

##### Greater Manila Area (GMA) and Interregional Checks

Each clearing participant, through his representative or through PCHC’s official courier shall deliver to the PCHC fully qualified MICR checks grouped in batches composed of a maximum of one hundred checks per batch supported by an “add list”, a batch control slip and a delivery statement. Each participant procures their supply of batch control slips from BAP-accredited security printers with the clearing participant’s name and Bank Routing Symbol Transit Number (BRSTN) preprinted thereon. Discrepancies between the PCHC computer-generated

total and the presenting banks' Batch Control Slip amount arising from exception conditions such as missing items, free items, erroneous bank's add-list, etc., shall be reconciled by PCHC by passing adjustment tickets to balance the physical batch totals.

Any check/item sent for clearing through the PCHC on which payment is refused by the drawee bank, in accordance with long standing and accepted banking practices, shall be returned through the PCHC not later than the prescribed clearing period for local exchanges. The acceptance of the returned check/item by the presenting (collecting) bank is mandatory. Each returned item shall be presented to the Clearing House via the use of MICR Document Carrier Envelopes. These will be processed by the PCHC as a separate job and will not be intermingled with bundles of regular clearing items. Return of such items through the Clearing House Facility after the "prescribed period" shall be subject to penalty. Items which have been subject to a material alteration or items bearing a forged endorsement when such endorsement is necessary for negotiation shall be returned by direct presentation or demand to the presenting (collecting) bank and not through the regular clearing house facilities within the period prescribed by law for the filing of a legal action by the returning bank/institution against the institution/entity sending the same.

Items originally presented and subsequently returned by the drawee bank may be subject to clearing for the last and final time again. Re-clearing of the check after the second presentation shall be subject to a penalty computed on the prevailing IBCL rate multiply by the amount of the item or Php1,000.00, whichever is higher, to be imposed by the drawee bank against the presenting bank. However, re-clearing of an item previously returned or dishonored for reasons of stop payment order or the closed account is strictly prohibited. Special clearing of checks by direct presentation shall be allowed only for regular clearing items or returned items not presented at the PCHC Clearing Window on or before the clearing cut-off time which are as follows:

- **Regular clearing items** to be delivered to the drawee bank's central clearing unit (CCU) not later than 8:00PM of the same day; and
- **Returned items** to be delivered to the presenting bank's central clearing unit (CCU) not later than 11:00PM of the same day.

A Special Clearing Receipt shall be used for regular clearing checks (delivered to drawee bank's CCU) returned items (delivered to presenting bank's CCU). Regular clearing checks/items presented directly to the drawee bank shall be treated as if they were received from normal clearing operations. However, upon the implementation of BSP Circular 681 in 2010, returned/dishonored items shall be returned within the corresponding "prescribed period".

#### Regional Local Check Exchange

Banks/branches in the regions shall batch locally-drawn checks separately from their inter-regional outward and shall capture and transmit the electronic data on or before 3:00PM. After transmission, the banks shall sort the items according to drawee banks; likewise a list of the items per drawee bank/branch shall be generated from their front-end machine. The banks shall then package the items per bank using envelopes together with a copy of the list of the items. They will proceed to the designated document exchange center (DEC) at a prescribed timeline to exchange envelopes with other participating banks in their locality.

For DEC's managed by JRS (a courier service provider), the banks shall prepare a delivery receipt to be acknowledged by JRS indicating the number of envelopes and the corresponding receiving bank. JRS personnel shall be the one to sort and dispatch the envelopes by receiving bank making sure that the dispatch of envelopes are properly documented. As for areas

without JRS, the local bank association shall designate the place of the DEC and supervise the exchange of envelopes.

Once the bank received all their incoming local checks, they are required to validate both their outward and inward totals and items using the downloaded outward and inward files and reports from PCHC.

### **Settlement**

Clearing balances of participating banks/branches shall be debited or credited, to the clearing accounts of banks' respective head offices in the BSP in the afternoon of the same day the demands are presented for clearing.

Any bank which incurs an overdraft in its deposit account with the BSP shall fully cover it, including interest at a rate equivalent to one-tenth of one percent. (1%) per day or the prevailing 91-day T-bill rate plus three percentage points, whichever is higher, not later than the next clearing day. The corresponding clearing office (PCHC and the BSP Regional Clearing Office) shall officially notify banks with overdrawn balances.

Settlement of clearing balances with the BSP shall not be effected for any account which continues to be overdrawn for five consecutive banking days until such time that the overdrawn amount is fully covered or otherwise converted into an emergency loan or advances pursuant to the provisions of Section 84 of R.A. No. 7653. Banks may also borrow from other banks through the interbank facility or from the BSP through the overnight or term regular repurchase facilities at existing rates to cover overdrafts.

### **Risk management**

Rules and procedures on contingencies and business continuity plus proper controls are pillars anchored on PCHC existence. Risks associated with each process were identified with corresponding mitigation/action defined.

### **Technical aspect**

#### **BRSTN**

PCHC, upon written request, shall assign a unique Bank Routing Symbol-Transit Number (BRSTN) to all branches/extension offices/units of Banks desiring to participate in the PCHC Clearing Operations. PCHC shall maintain a register for this purpose and shall keep an updated list of banks/branches' BRSTN available to all clearing participants upon request in writing.

For purposes of inclusion in PCHC's sort pattern parameter, banks should advise PCHC of the impending participation of their branch/extension offices/units in any of the clearing regions through the submission of the following information: (a) name of branch/extension office/unit, (b) complete address, (c) clearing region where to participate, and (d) effective date of participation.

#### **Bank records of clearing items**

Each bank/branch shall maintain adequate records for tracing and reproducing any item lost or destroyed in transit to PCHC, i.e. regular items, return items and special clearing items.

#### **Photocopy/Image of clearing items**

PCHC shall maintain microfilm/electronic images of items cleared through its facilities. A photocopy shall be made available upon submission of a request in proper form and duly signed by an authorized bank officer whose specimen signature is on file with PCHC. A

photocopy/image of an item, which is duly certified by PCHC, shall be used as a binding document to debit the corresponding client's account in case the original item is lost or mutilated. In case of loss of regular item(s) while in transit to PCHC, a photocopy of such item(s) shall be used as a binding document to debit the client's account. Authorized officers of the Presenting Bank shall duly certify the genuineness of the photocopy by affixing their signature over their printed names. Provided that the drawee bank requires so, the Presenting Bank shall inform the drawee bank with a written undertaking (supported by detailed add-list of the lost items) to reimburse the latter for the amount(s) of the item(s) including losses and/or damages arising from a duplication of payment of the item(s) or subsequent return of the photocopy due to fraudulent negotiation thereof.

#### Retention of records by PCHC

PCHC shall inform duplicate diskette/magnetic tape records of incoming checks to clearing participants upon request by an authorized officer of the requesting bank/branch provided that the request is made within four (4) clearing days after the original date of preparation of the incoming diskette/magnetic tape. Any request made beyond the period herein prescribed may be entertained on a best effort basis. PCHC shall keep microfilm/electronic images and duplicate lists of the items processed for a period of five (5) years from the date of clearing.

#### PCHC tracer/identification band

The presence of the PCHC Tracer/ID Band on the back of the check will serve to certify that the item has been cleared through PCHC but still shall not be construed as a legal endorsement.

#### Quality of checks/items for MICR clearing

To assure a fast and efficient processing system at all times at the Clearing House, member participants shall maintain and provide a testing mechanism for the strict monitoring of the production of MICR checks/items by their accredited printers. Rejects attributable to inferior quality check paper, poor control features and sub-standard printing and/or encoding of the prequalified fields shall be subject to the provisions of Penalty on Rejected Items.

#### Pricing policy

Pricing policies for the services of PCHC to its member clients are based on the following pricing structure:

Item fees exclusive of expanded value-added tax or eVAT

- Outward Item Php0.75/item
- Inward item Php0.75/item
- Inter-branch Outward Php0.40/item
- Inter-branch Inward Php0.40/item

Minimum Monthly Charges

- Greater Manila Branch Php1,500/branch
- Regional Branch Php800/branch

OR

Bank level charge of Php10,000/branch whichever is higher

### **3.5.2 Electronic Peso Clearing System (EPCS)**

The Electronic Peso Clearing & Settlement System (EPCS) is an interbank account-to-account fund transfer system that supports bulk, recurring, non-time sensitive payment and collection transactions.

Banks are charged according to the number of transactions they incurred for the day. The amount of fee is ten (10) Pesos for every transaction and the billing statements are sent every month to the banks.

The rules, regulations and procedures are provided under a Memorandum of Agreement entered into among the BSP, PCHC and the clearing participant-banks.

#### **Participation**

Thirty-eight (38) commercial banks participate in the daily peso netting operations of EPCS.

#### **Operation and settlement**

The electronic transmissions of electronic peso transfers between banks occur between 9:00AM and 4:00PM. Being an online processing system, the participating banks/branches are permitted to gain access to the EPCS Host Computer located at PCHC via data communication lines.

The system enables payees to use funds on the next business day while withdrawals of transferred funds from the payees' accounts in the Peso Netting require at least 48 hours following the remittance date.

#### **Technical aspect**

Using this connectivity to the EPCS Host Computer, participant-banks electronically transmit funds transfer transactions to PCHC anytime within a pre-defined transmission time. PCHC transmits the Peso net results to BSP at 16:00 for posting/settlement at the banks' DDA. The results and inward data files and reports are generated by PCHC and are made available to the participants for downloading.

BSP will immediately broadcast the results of the position of each participating bank after settlement is completed. The US dollar net results will be forwarded to Citibank for posting. The system utilizes a centralized data entry for payment instructions by the banks using PCHC provided front-end software.

Funds will normally be available to clients no later than two (2) banking days after clearing date for Metro Manila area while no later than three (3) and seven (7) for regional clearing areas and other areas/places, respectively.

It is an on-line based processing system where EPCS banks/branches participants are permitted to gain access to the EPCS Host Computer located at PCHC via data communication lines. Using this connectivity to the EPCS Host Computer, participant-banks can electronically transmit transactions to PCHC anytime within a pre-defined transmission time. Net clearing positions are forwarded by PCHC to Bangko Sentralng Pilipinas for posting to the participant bank's respective DDA account. The bank's clearing results and inward data files and reports are generated by PCHC and made available to the participants for downloading.

### **3.5.3 Philippine Domestic Dollar Transfer System (PDDTS)**

#### **Overview and framework**

PDDTS is a local USD payment system operated by the Bankers Association of the Philippines (BAP), Philippine Securities Settlement Corporation (PSSC), Philippine Clearing House Corporation (PCHC) and Citibank Manila. It is a facility used by the banking industry for the settlement of USD transactions between banks by moving US dollar funds from one Philippine bank to another on the same day, without having to go through correspondent banks in the U.S.

PDDTS is the first USD RTGS payment system in Asia, dating back to 1995, and precedes the only other Asian USD RTGS payment system, the Hong Kong RTGS system which established in 2000.

Each PDDTS participating bank maintains a US dollar interest bearing account with the settlement/depository bank (PDDTS account) used solely for effecting credits and debits and other transaction arising from PDDTS transactions as well as payment(s) of transactions and other charges attendant to PDDTS transactions. The end-of-day net positions of banks arising from OFW remittances which are coursed through the PCHC, are also settled through PDDTS.

The PDDTS also made possible the implementation of Payment vs. Payment (PvP) facility in 2003 for interbank USD-Peso transactions with the dollar leg settling in PDDTS and the peso leg settling through the central bank's own payment system, the Philippine Payments and Settlements System (PhilPaSS).

This local clearing and electronic communications system is operated by the BAP, the PSSC, the PCHC, and Citibank Manila (as the USD settlement bank). The role of the USD settlement bank is submitted for bidding every three years.

#### Participation

Philippine commercial banks, which are allowed to engage in FX transactions, are participants in the PDDTS. PDDTS participants may also avail of the PvP service.

#### Types of transactions

- a. USD transfers to another domestic bank. This facility may also be used to transfer USD to a correspondent bank abroad by coursing the transfer through the USD settlement bank at the domestic counterparty, with instructions for onward delivery to a foreign bank.
- b. Payment vs. Payment (Peso vs. USD) where the dollar leg is settled at the PDDTS and the peso leg is settled via the BSP's own payment system, PhilPaSS.
- c. End-of-day net clearing results of OFW remittances from PCHC are also transmitted to the PDDTS system for posting into the banks' PDDTS accounts.

#### Operation

PSSC is the PDDTS' system operator. On-line transfers and PvP settlements are processed via PSSC's PDDTS system. Banks course their OFW remittances through the PCHC batch clearing system and PCHC sends the end-of-day netted clearing results of banks to the PSSC system.

At the start of the day, the PSSC receives the beginning balances of the participant-banks' PDDTS accounts from the USD settlement bank. Each participant may then commence sending electronic transfer instructions through the PDDTS system using Real Time Gross Settlement (RTGS) anytime from 6:00AM to 4:00PM of a particular business day via the PDDTS front-end system. The PSSC system accepts and processes these instructions on real time mode.

#### Settlement

Settlement is done through book transfers in the US dollar accounts of participants maintained with the USD settlement bank. Each participating bank maintains a non-checking, interest – bearing FCDU (i.e. US dollar) current account with the USD settlement bank, which acts as their clearing account. The USD settlement bank handles the inward and outward transfers to/from the banks' PDDTS accounts. These are also posted in real time through interfaces between the PSSC System and the USD settlement bank.

Upon receipt of said instructions, the PDDTS system shall automatically access the sending participant's PDDTS account balance. If the participant's account has sufficient funds to cover the transaction, the instruction will be implemented and the transfer effected. Once the transfer is effected, the funds if a particular sending participant become immediately available to the receiving participant and the settlement shall be final and irrevocable.

If the sending bank's PDDTS account balance, as reflected in the PSSC System, is insufficient to cover the transfer, the transfer instruction will be placed on queue. Participants who may be temporarily short of funds during the day may then request Citibank for daylight overdraft facility for the queued transactions.

For Payment vs. Payment transactions, the USD leg is checked first and where sufficient, the USD amount is earmarked. A peso payment instruction is then sent to the BSP-PhilPaSS system, which is queued together with all other payment instructions of the same bank. Upon successful posting of peso payment debiting the USD buyer's PhilPaSS account and crediting the USD seller's PhilPaSS, PhilPaSS sends a confirmation message to the PSSC System, which triggers the actual transfer of the earmarked USD amount in the USD seller's PDDTS account to the PDDTS account of the USD buyer.

#### Risk management

- Real-time transfers and Payment vs. Payment settlement. Funds move only against sufficient balance in the accounts. Finality of transfer is achieved real-time.
- To mitigate gridlock and settlement and liquidity risks, participants may request for a daylight overdraft facility from the USD settlement bank.
- Accounts are controlled by the participating banks themselves without any intervention from the PSSC or the USD settlement bank.
- Industry standard security access with disaster recovery facilities.

The PSSC system is an internet-based system running over a network infrastructure with industry standard security features. Participants access the system via any computer with internet connection.

Use of the PDDTS is governed by the PDDTS Agreement signed among the Bankers Association of the Philippines (on behalf of its member-banks), the PSSC, PCHC and the USD Settlement Bank (currently Citibank Manila). Each participant signs a Participation Agreement which binds them to the Agreement.

Use of the PvP is governed by the PvP Agreement signed by the Bangko Sentral ng Pilipinas and the PDDTS agreement signatories.

Both PDDTS and PvP are subject to the BSP Oversight as systematically important payment systems.

#### **Pricing policy**

PSSC fees (plus 12% Value-Added Tax):

- One-time Joining Fee of PhP250,000.00
- Single-sided USD transfer fee of PhP40.00 per side (sending and receiving)
- PVP settlement fee of PhP100.00 per side (seller and buyer)
- Cut-off extension fee of PhP10,000 per request
- Miscellaneous fee for special requests

PCHC fees (Plus 12% VAT):

- One-time fee of PhP3,000.00
- Processing fee for remittances of PhP6.00 per outward item and PhP6.00 per inward item, with a minimum of PhP500.00 per month
- Print request for past transactions PhP45.00 per page

### 3.6 ATM Networks

#### Overview

There are 5 (Automated Teller Machine) ATM switch operators in the Philippines, namely BancNet, ENCASH, ExpressNet, MegaLink and NATIONLINK. BancNet, ExpressNet and MegaLink are considered major players in the payment systems because of their customer reach. BancNet, ExpressNet and MegaLink are co-owned by the big commercial banks. Their services go beyond the traditional transactions coursed through the ATM. Meanwhile, ENCASH and NATIONLINK are more geared towards reaching out to people in the rural areas who are not normally reached by the major ATM consortiums.

#### Institutional framework of the ATM Consortia in the Philippines

BancNet is an interbank network connecting the Automated Teller Machine Consortium (ATM) networks of more than forty-nine (49) local banks. As a multi-channel payment gateway, BancNet enables its customers to transact at any ATM terminals anywhere, anytime, at point-of-sale (POS), the Internet or through mobile phones. BancNet is also the exclusive gateway of China UnionPay. BancNet has also forged an alliance with global payment brand JCB International. BancNet serves 8 million members with over 4,000 ATMs and more than 10,000 POS terminals.

ExpressNet is an interbank network connecting the ATM networks of seven major banks in the Philippines. At present, ExpressNet has 3.5 million customers and has 2,213 ATMs operating nationwide.

MegaLink is an interbank network connecting the ATM networks of fifteen (15) member-banks in the Philippines with a more than 2,921 ATMs nationwide and 32,439 11 POS terminals.

To this date, the three (3) major ATM networks are already interconnected with each other to enhance the services they provide to their clients.

NATIONLINK is an interbank network and EFTPOS network in the Philippines. Unlike the main existing networks: BancNet, ExpressNet and MegaLink - NATIONLINK is not expected to compete with those networks. Instead, it seeks to complement those networks by extending the reach of ATMs in the countryside, as the main networks are largely concentrated in urban

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<sup>11</sup> Source: MegaLink, figures as of end-December 2011

areas. Its closest competitor is the ENCASH Network Service. NATIONLINK's members consist mostly of savings banks, credit unions, rural banks, cooperatives and non-governmental organizations, and is largely concentrated in rural areas, where the reach of ATMs are more limited than in the cities. The network focuses heavily on the overseas Filipino worker (OFW) market.

Electronic Network Cash Tellers, Inc. (ENCASH) is an independent switch network that provides ATM service to the Philippine countryside. As the first Independent ATM deployer, ENCASH provides privately-owned ATMs to areas not deemed viable by commercial banks, allowing users in remote locations to conveniently access to their finances. Initially connecting the ATMs of five (5) rural banks in the Philippines, the ENCASH network eventually expanded to more than 101 member- rural banks and cooperatives with two hundred twenty (220) ATMs deployed and operations implemented Luzon, Visayas and Mindanao. ENCASH is a member of MegaLink which is interconnected with the other Philippine interbank networks, i.e., BancNet and ExpressNet.

It is also the first network in the Philippines to fully adopt EMV technology on all its ATM cards, although the regular magnetic stripe cards remain an option for the network. ENCASH provides both rural and commercial bank ATM cardholders with the convenience of having access to ATMs in more locations all over the country.

#### Types of transactions

The following transactions may be utilized by most ATM switch operators in the country:

- Cash withdrawal
- Cash advance<sup>12</sup>
- Account balance inquiry
- Checkbook and statement request
- Bills payments
- Funds transfer (intrabank and interbank<sup>13</sup>)
- Load fulfillment (e.g. airtime, top-up)
- Purchases

These transactions are made available through the members' existing delivery channels (ATMs, POS terminals, internet and mobile facilities)

#### Participation

All commercial banks are shareholders in either or all of the ATM networks in the country. In the case of the thrift banks since not all of them are qualified to become a shareholder, some participate in an ATM network as a subscriber. A subscriber is a non-shareholder participant bank.

On the other hand, rural banks operate ATMs in a different set-up. Since most rural banks are relatively small in terms of capitalization, they normally do not have the capacity to become a principal shareholder nor a subscriber in any of the major ATM network. NATIONLINK and ENCASH, the smaller ATM switch operators, have provided a special arrangement with the

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<sup>12</sup> Credit card owners dispense their cash advances through ATMs

<sup>13</sup> Capability for interbank fund transfer is limited to banks belonging to the same ATM network

rural banks who wish to operate an ATM. The arrangement provides for a profit-sharing scheme between the ATM switch and the bank that actually operates the machine.

#### Operation

The ATM switch operators connect the delivery channels of its members and other participants to allow their cardholders to transact with the delivery channels of other participants.

#### Settlement

The settlement of ATM transactions among the participants and members of the ATM switch operators vary from one another. In the case of BancNet and MegaLink, final settlement of transactions by their participants and members are processed by PhilPaSS. These two (2) consortiums send electronic payment instructions to PhilPaSS for the settlement of network funds against the demand deposit accounts maintained by member banks with the BSP. Other ATM consortiums, which are non-members of PhilPaSS, utilize the services of designated settlement/depository bank(s) in order to conduct final settlement of their ATM transactions.

For *PhilPaSS* participant ATM consortiums, the settlement flow is as follows:

- ATM consortium transmits Settlement Reports to BSP-PhilPaSS via leased line (FTP)
- BSP gets the report from ATM consortium's server for validation
- BSP processes the report from ATM consortium via the *PhilPaSS* system and posts debits and/or credits to the banks' DDA account
- BSP sends the status/confirmation file to the ATM Consortium
- ATM consortium process BSP's confirmation file and verify/ post settlements

On the other hand, ENCASH operates a switch-in-front architecture, connected to appropriate transaction authorization entities. These will include Member Bank CA/SA systems, electronic money/wallet systems, VISA or MasterCard(s), when available. The (*ENS*) switch network is also being developed toward accepting transactions using other front-end devices, e.g., POS. *ENS*-ATMs will be stationed more appropriately at points where commercial banks have minimal presence.

#### Risk Management

##### BancNet/MegaLink/ExpressNet

BancNet and MegaLink have entered into and signed an agreement with BSP for the use of PhilPaSS for immediate settlement of payments between member banks in order to manage settlement risks. Settling through the RTGS system, the potential risks that can come from the inability of member-banks to meet ATM withdrawals are reduced. ATM network consortia protect their respective ATM outsourcing facilities by using hardware security modules (HSMs) to ensure critical data protection and transaction security. ATM operations outsourcing is a service that empowers the member banks to focus more on their respective core businesses. The service frees clients from the complex processes and high costs of starting and managing their own ATM network. The respective network ensures that processes are completely safe from adversaries by employing a security systems that protect the integrity of highly sensitive data passed on from network to network during inter-bank ATM transactions including those of cryptographic keys, the process of encryption and decryption, and payment transactions, as well as card and PIN issuance and verification.

The ATM Networks have identified various risk areas specifically operational, financial, reputational and legal. These risks are being managed by the Quality Assurance and Risk management thru various programs and processes such as accreditation processes, enterprise risk management, internal audit, process reviews, and development of policies and procedures. Besides management level reviews, specific Board level committees such as the Executive Committee, Audit Committee, and Corporate Governance Committee have been organized and delegated specific responsibilities to oversee risk management activities. MegaLink and BancNet, two of the country's largest automated teller machine (ATM) conglomerates, are enhancing their credit and liquidity risk management by crafting a written policy on loss sharing among member banks in case of credit pressures.

BancNet is considered the biggest in terms of ATM network of 4,000, followed by MegaLink with 2,600 while ExpressNet operates 2,200. Both MegaLink and BancNet have partnership deals with two of the Philippines' largest telecommunications/mobile service providers - Globe and SMART. In 2005, MegaLink, BancNet and ExpressNet agreed to interconnect networks in order to reduce the cost of ATM transactions for banks and their clients. The BSP encouraged the three operators to interconnect since this will result in greater operational efficiencies and lower operational costs. Likewise, the three-way network interconnection resulted in increased deposit and withdrawal convenience for the banking public since depositors would have easier access to all ATM networks nationwide.

#### Technical Aspects

The network member-banks are connected to the respective network main switches both on the production site and the disaster recovery site via leased-line connectivity provided by two major telecommunications companies (Globe and PLDT). All of the networks' peripheral infrastructures (production and disaster recovery) are protected by firewalls and intrusion prevention systems (IPS).

#### Pricing Policy

The network member-banks charge a fee for every approved individual transaction coursed through the ATM terminals; depending on the type of transaction.

## 4. POST-TRADE PROCESSING, CLEARING AND SECURITIES SETTLEMENT

### General Overview

Until February 1997, the BSP-Government Securities Department (GSD) was responsible for the maintenance of a registry of securities for financial institutions. The registry was called the Book Entry System (BES) and maintained 951 securities accounts. In 1998, when the BSP's fiscal function was transferred to the Bureau of Treasury and a (new) registry was established, the membership was initially limited to Accredited Government Securities Dealers (AGSDs) although the BSP had previously approved (1995) the inclusion of insurance companies and mutual benefit associations in the book entry system for government securities. It was believed that the widening of the paperless government securities trading system would eliminate the risk of non-delivery of the securities and reduce administrative costs for both the Government and securities dealers. The BES recorded transfers of securities ownership through ledger entries. Each participant opened a securities account with the GSD that served as the medium for transfers and registration of its individual holdings. In contrast to the custodianship facility, the system allowed partial withdrawal of securities.

### 4.1 Registry of Scripless Securities (RoSS)

The Registry of Scripless Securities or *RoSS* is a central securities depository maintained and administered by the Bureau of Treasury (BTr). The operations of RoSS are anchored on the following functional objectives:

- Registration of ownership and transfers or encumbrances of scripless/uncertified Treasury bills and Treasury bonds.
- All Philippine Government Securities trade on Delivery versus payment (DvP) and on Real Time Gross Settlement (RTGS) basis.
- Elimination of potential systemic risk/disruption of the Philippine financial system.
- Lower cost of delivery/settlement through electronic trading.

As of end-December 2011 there are 11,228 registered accounts in the RoSS, detailed as follows:

- Banks – 12
- Non-Bank Financial Institutions – 11
- Others – 11,205

All government securities floated / originated by the National Government under its scripless policy shall be recorded in the registry in the name of the Government Securities Eligible Dealer (GSED) by virtue of the auction award made by the Auction Committee. Subsequent transfer of ownership or encumbrance on the scripless securities out of the securities account of a GSED is recorded in RoSS through the securities account of the counterparty GSED. A complete backroom processing and information system was set up in the offices of the BTr.

Since the transfer of the fiscal agency functions from the BSP to the DoF in 1996, the BTr performs as the custodian of government securities, responsible in safekeeping and booking of securities trades/purchases through RoSS. The BTr owns and operates the RoSS system.

### Participation

The participants in the RoSS are classified as follows:

Government Securities Eligible Dealers (GSED) – are dealers licensed by the Securities and Exchange Commission to engage in both purchase and sale of government securities. They are acknowledged by the BTr as eligible to participate in the auction upon application and proof of unimpaired capital of at least Php100 Million, compliance with statutory ratios, and subscription of an electronic link to the BTr's Automated Debt Auction Processing System and the RoSS, and existence of a Demand Deposit Account with the BSP.

Non-Government Securities Eligible Dealers (Non-GSED) – are dealers which may also engage in the purchase and sale of government securities but only from and to GSEDs. Any institution may be accepted as a non-GSED after submission of proof that they are into buying and selling of securities, application of membership to the RoSS and accomplishment of an Oath of Undertaking that they will abide by all the rules and provisions governing the system.

#### Types of transactions

The RoSS handles the transfer of ownership or encumbrance on the scripless securities out of the Securities Account of a GSED into the Securities Account of the counterparty GSED/non-GSED.

#### Operation

Under the RoSS, GSEDs maintain a Securities account for official recording of Scripless government securities awarded to them as a result of an auction. Acquisition of securities in the secondary market is recorded in the same manner.

A GSED likewise maintains Securities Sub-accounts in the name of its respective clients for the purpose of segregating scripless government securities sold to clients in the secondary and tertiary markets under one account, provided that the GSED maintains complete records of ownership/other titles of their clients in the GSED's own books. GSEDs desiring to achieve delivery versus payment (DvP) and real time gross settlement (RTGS) in their secondary market transactions shall open a Settlement Account with the BSP or any bank of their choice, which, like the BSP, shall agree to service their settlement of Scripless securities trade immediately upon notice of a transaction concluded. All banks/financial institutions, which have regular demand deposit account with BSP, may serve as settlement banks in connection with the government securities transactions of RoSS account owners.

GSEDs have the option to: (1) fund their Settlement Account before the start of trading hours or 9:30am, or (2) avail of an Overnight Credit Line with the Settlement Bank which shall be deemed drawn whenever the GSED's Settlement Account is negative or insufficient to settle a trade otherwise, the transaction shall be queued until sufficient funds are credited to the Settlement Account. Before the implementation of the familiarization period for Circular 266, trading starts at 9:30 to 12:00. However under Cir. 266, banks can now deal with BSP as well as among themselves up to 15:00. GSEDs have until 14:00 to register their transactions with ROSS. This will give ROSS sufficient time until 16:00 within which to clear the scripless securities and settle the payment thereof. Trades can be settled manually or electronically.

For transactions wherein one of the parties does not have the electronic link to the RoSS System or in cases of system breakdown and failure of trade transactions to meet the cut-off time prescribed by RoSS, these are manually settled through physical delivery of the confirmation of outright purchase with corresponding confirmation of outright sale/purchase with resale/etc., by the counterparties to the BTr office. Cash settlement for these transactions will now be in the form of checks. For transactions to be settled through electronic trading systems, counterparties have to key-in/transmit the details of the trade using Reuters Interface or PDEX that is linked electronically to the RoSS. GSEDs shall ensure that all trades are

cleared and settled, having sufficient securities and cash/credit in the corresponding accounts. If for any reason, a trade is not cleared/settled, RoSS shall queue the trade until the GSED corrects the deficiency, in which event, RoSS shall clear/settle the trades queued on a first-in-first-out basis.

On the coupon payments and redemption, the BTr shall credit the Settlement Account of each GSED with the amount of coupon payments, net of tax on coupon due date. Likewise BTr shall credit the Settlement Account of each GSED with the redemption value of the government securities on maturity date. Amounts due to the owners of a GSED's Sub-Account shall accordingly be indicated in the credit advice. For government securities issued prior to the origination under the November 20 1995 auction, GSEDs shall settle/clear all transactions pertaining to such securities with BSP's Book Entry System (BES) in accordance with the corresponding settlement arrangement currently being followed by GSEDs.

## Settlement

### Domestic trades

Settlement of transactions may be done manually or electronically as follows:

Manual Settlement. For transactions wherein one of the parties does not have the electronic link to the RoSS system or in cases of system breakdown, the buyer of securities prepares a Confirmation of Purchase (CoP) while the seller prepares a corresponding Confirmation of Sale (CoS) containing all the details of the transaction, i.e. the ISIN Number, issue and maturity dates, face amount, transaction number. The BTr then matches the CoP with the CoS. Matched transactions are then posted to individual securities accounts. Cash settlement may be in the form of checks or direct debit against their accounts with depository banks.

Electronic Settlement. For electronic settlement of transactions in the primary market, (Auction of T-bills/T-bonds), the BTr through the Bridge system announces, two days in advance, the details of the scheduled offering. The GSEDs can submit their respective bids using the Reuters Interface or PDEX, which are electronically linked to the BTr's Automated Debt Auction Processing System (ADAPS) from 10:00 to 13:00. After the cut-off time, the BTr will then array submitted bids after which the Auction Committee will then decide what bids to accept. The BTr then downloads/transmits the accepted tenders to the RoSS System.

Once downloaded, individual security accounts of winning bidders are automatically updated. Cash settlement reports can now be generated and forwarded to the BSP. These cash settlement reports serve as the basis for debiting the demand deposit accounts of the winning GSEDs. For the *secondary market* transactions, the GSEDs/non-GSEDs input settlement instructions for closed deals in their Reuters Interface or PDEX, which is electronically linked to the RoSS system. Each dealer shall use his confidential ID and password to activate the system and shall authorize every transaction. Once matched, the transaction is sent electronically to the RoSS. Individual accounts are automatically updated after downloading of matched transactions to the RoSS System is completed. The cash settlement is done thru *PhilPaSS* wherein BSP, will post the net trading results in the individual demand deposit accounts of the participant banks.

Under the proposed DvP settlement system, GSEDs shall ensure that all trades are cleared and settled, having sufficient securities and cash/credit in the corresponding accounts. If for any reason, a trade is not cleared/settled, RoSS shall queue the trade until the GSED corrects the deficiency, in which event RoSS shall clear/settle the trades queued on a first-in-first-out basis.

### Trans-border trades

GSEDs may settle trades with foreign clients through their account with Cedel and RoSS, subject to the respective agreement with Cedel. This is, however, not yet operational.

#### Coupon payments/redemption

The BTr shall credit the Settlement Account of each GSED with the amount of coupon payments, net of tax, on due date. Likewise BTr shall credit the Settlement Account of each GSED with the redemption value of the government securities on maturity date. Amounts due to the owners of a GSED's sub-account shall accordingly be indicated in the credit advice.

#### Risk management

RoSS will not pose any risk to BTr, as this is a unit under this Office. BTr will see to it that it has full control over its operations. As to the BSP or the participants, RoSS will not in any way pose any risk, as under the said system, all government securities transactions are uncertified and therefore not negotiable just like under the Book Entry System (BES) of the BSP. The RoSS system can also validate if a participant's securities inventory is insufficient to settle a trade, in which case said transaction will be queued until the deficiency has been corrected. Further, there can be no human intervention under RoSS as it is fully automated.

#### Pricing policy

Monthly subscription fees are being assessed by the BTr against all banks/ financial institutions and individuals maintaining principal and client securities accounts with the RoSS. Monthly fees range from Php5,000 for each principal securities account to Php1,000 for every client securities account or per individual.

## **4.2 The Philippine Depository and Trust Corporation (PDTC)**

The Philippine Depository and Trust Corporation ("PDTC"), formerly Philippine Central Depository (PCD), is a 97.72%-owned subsidiary of the Philippine Dealing System Holdings Corporation. It is a domestic corporation incorporated in the Philippines on March 31, 1995. Included in its line of businesses are its authorities to act primarily as depository, registry, custodian, trustee and/or intermediary of its participants of any and all kinds of securities, monetary or financial instruments, and their derivatives. With its role as depository and custodian of all kinds of securities, the PDTC was granted trust and quasi-banking licenses from the Bangko Sentral ng Pilipinas (BSP). As to Registry business, both the Securities and Exchange Commission (SEC) and the Bangko Sentral ng Pilipinas (BSP) granted its license to act as Transfer Agent and accreditation as securities registrar, respectively. The PCD Nominee Corporation (PCNC), on the other hand, is the wholly-owned subsidiary of PDTC which was formed for the single purpose of holding legal title to (but not beneficial ownership of) all Securities lodged in the PDTC book-entry system.

PDTC operates a Depository and Electronic Book-entry Transfer System, a system for the centralized handling of securities which supports the settlement of securities by book-entries in the records of PDTC without physical delivery of stock certificates.

As of April 2010, the shareholders of PDTC were Philippine Dealing System Holdings Corporation (97.725) and Investment House Association of the Philippines (IHAP) in trust for its members (2.28%).

PDTC is operating under the rules and regulations of the Securities and Exchange Commission. Its activities are governed by all such statutes, rules and regulations in force in the Philippines, in particular, the Securities Regulation Code, the Corporation Code, and the Civil Code of the Philippines. It is a wholly-owned subsidiary of the PDS Holdings Corp., which is owned by

various market stakeholders including three strategic shareholders: Philippine Stock Exchange, Bankers Association of the Philippines, and Singapore Exchange. The PDTC Board of Directors is composed of four shareholder representatives, three independent directors and two management representatives.

### Participation

Banks, brokers, and other entities are eligible to become participants of PDTC. A regulatory oversight is an eligibility requirement for banks and brokering participants. As of 30 November 2010, there were 28 bank participants and 136 broker participants in the depository.

As stated in the PCD rules, banks, brokers and other entities incorporated, established or formed, and regulated under laws of the Philippines are eligible to become participants in the depository. Other entities would refer to an insurance company, an investment house, a fund, including a Mutual Fund, a trust company, a trust fund, an issuer of Securities and/or its Transfer Agent, if applicable, the PCD Nominee – a central securities clearing agency. In addition, the potential participant must also pass any local regulatory policy for opening an account.

### Types of transactions

PDTC provides depository and settlement services for listed fixed income securities in the Philippine Dealing & Exchange Corp. (PDEX). This includes government securities and corporate debt issues. PDTC supports both broker level and investor level settlement for all PDEX-traded transactions.

Aside from its core services, PDTC also offers Collateral Management, Lending Agency and Lending Pool services supporting PDEX. On 21 December 2006, the SEC approved the PDEX Securities Lending Transactions Program for fixed income securities where PDTC acts as the Lending Pool and Collateral Management System Operator. In August 2007, the SEC approved the PDEX Inter-Professional Repo Program where PDTC acts as the Central Collateral Management System Operator. BSP issued a “no object” letter with regard to the participation of the regulated entities of the BSP in the PDEX Securities Lending Transactions Program and the IP Repo Program. For these two PDEX-sponsored programs, PDTC performs its Collateral Management functions under its Depository Services. In March 2007, the SEC granted PDTC a Lending Agency license which allows the custody clients of PDTC to participate in the PDEX Securities Lending Transactions Program through PDTC as a Lending Agent. The Lending Agency activities of PDTC are under its Custody services.

### Operation

The services of PDTC include electronic record keeping, value preservation, and guardianship of equities and fixed income securities. It also provides value-added services such as collateral managements for repurchase transactions and acts as agent and collateral manager for Securities Lending transaction and similar activities.

As Registrar, PDTC maintains the electronic records of registered holders of corporate issuers of both the debt and equity securities so that the registration of ownership is reflected in electronic form. It also acts as the transfer agent of the issuer that effects and monitors the change in ownership in its books upon instruction of the registered holder.

As a depository for the equities market, PDTC centralizes management of shareholders information through dematerialization. Dematerialization eliminates the need to deliver paper certificates for securities traded; hence it eliminates the risk associated with maintaining physical certificates and speeds up the processing and settlement of a trade transaction. The

depository services for the fixed income market are provided for securities issued in scripless form.

To avail of the vaulting facility, one has to become a member or a “participant” of PDTC in order to link to its electronic depository system. This will enable the member to effect the necessary transfer instruction in its securities account, as well as to monitor and account its portfolio holdings electronically.

The securities held in the depository are registered under the name of the PDTC nominee (PCNC) with the beneficial ownership reflected via book-entry credits to its securities accounts of the depository participants in the depository system.

PDTC is also licensed as a custodian and shall be using this franchise for its future securities lending agency service. PDTC’s clearing services is focused on non-exchange transactions. The Securities Clearing Corporation of the Philippines handles the clearing for equities trades at the Philippine Stock Exchange while the Philippine Dealing & Exchange Corporation provides both the trading platform and the clearing infrastructure for fixed income trades.

Settlement

#### Equities Market

Trades at the PSE settle on T +3 under DvP Model 3 (Simultaneous Net Settlement of Securities and Fund Transfers) net settlement method for broker-broker transactions (multilateral netting of both securities and cash). Non-exchange transactions settle on a non-DvP basis with securities being delivered against separately agreed payment. PDTC does not have any cross-border links with other CSDs although PDTC holds an account with Clearstream for its local custody.

#### Fixed Income Spot Market

Trades at the PDEX settle on T+1 under DvP Model 1 (Gross, Simultaneous Settlements of Securities and Funds Transfers) method. On the cash settlement side of fixed income securities, the PDEX DvP system is linked to the real time-gross-settlement (RTGS) payment system of the Central Bank thereby achieving finality of settlement using Central Bank money. Investors have the option for DvP settlement either at the broker level or down to investor level wherein investors nominate their securities and cash accounts for purposes of settlement, eliminating the use of check payments for trade transactions.

#### Fixed Income Repo Market

On settlement date, the PDTC System validates the existence and sufficiency of the Securities of the Repo Seller and earmarks them. Once the securities are earmarked, the PDTC System communicates with BSP PhilPaSS to validate the existence and sufficiency of the cash balance in the DDA of the Repo Buyer or its Cash Settlement Bank. If the Repo Buyer uses its Cash Settlement Bank, it debits its account for simultaneous credit to Repo Seller’s account. When the cash movement is confirmed, the debit of the Repo Seller’s earmarked securities shall be effected, simultaneously crediting the securities to the Repo Buyer’s account.

#### Fixed Income Securities Lending Transaction (SLT) Market

Lenders deliver lendable securities to the PDTC Lending Pool while Borrowers deliver collateral to PDTC that acts as the central collateral manager. Both the lendable assets and the collateral value (after haircut) are downloaded to the PDEX SLT trading system which Borrowers use to submit their borrowing interests. Borrowers may only borrow up to the extent of their collateral. After the close of the SLT trading day, the SLT transactions are sent

to the PDTC system where the SLT transactions are booked. The Borrower initiates the return of borrowed securities using their online access to the PDTC system.

#### Risks and risk management

To minimize risks in securities transactions, the PCD implemented the following measures:

##### Asset Commitment Risk

For trades in PSE-listed stocks, settlement between broker and investor is typically via check (for local clients) and direct credit to bank accounts for foreign clients while settlement between brokers is through the SCCP settlement system (Model 3). The processing of payment between brokers and their clients is FOP as payments do not pass through the Depository or the SCCP. The uncertain degree of asset commitment risk can be partially reduced by arrangements between participants and the settlement banks whereby the check exposure is offset against intraday credit limits to ensure that the check has same day value.

Settlement of PDEX trades between direct market participants are all done on a trade-for-trade, Real Time Gross Settlement basis (Model 1 DvP) using central bank money. This includes trades among dealers, brokers and qualified investors (including those under custodians). There is negligible asset commitment risk for these trades.

##### Liquidity Risk

Liquidity risk exposure is increased by the cash payment methods that transfer funds through check payments. However, the availability of credit facilities and market stock lending and a fails management arrangement via the SCCP help mitigate the liquidity risk exposure.

For settlement of PDEX trades, the general mode of settlement between clients and their brokers, which are mostly bank-owned or bank-affiliated, is via automatic debit/credit to the clients' accounts at the bank which minimizes the liquidity risk exposure of the broker.

##### Counterparty Risk

PDTC does not take on counterparty risk in either the equities or fixed income market. The SCCP assumes the role of central counterparty for all PSE-eligible trades and guarantees the settlement of these trades. For off-exchange trades, there is credit exposure between the buying and the selling members.

In the fixed income market, PDEX participants trade with each other against bilateral counterparty limits, which are entered and monitored in the PDEX trading system. A multilateral counterparty limit system against pre-delivered collateral is planned for implementation by third quarter of 2011 to address the limitations of a purely bilateral counterparty limit system.

##### Asset Servicing Risk

PDTC's responsibility for the completeness, accuracy and timeliness of corporate action information and the execution of corporate action instructions is limited to gross negligence. PDTC does not provide proxy voting or tax reclaim services. Otherwise, PDTC offers an efficient and safe asset servicing facility; information is obtained from or verified with official sources and most communication is in electronic form.

##### Financial Risk

PDTC does not act as a central counterparty, hence, it does not carry any credit risk. The depository assumes limited liability for losses incurred as a result of an operations failure or the loss of securities, for which it maintains third party insurance cover. It is not exposed to defective broker lodgments nor is it exposed to clearing and settlement risks of broker trades since this responsibility is assigned to the SCCP.

### Operational Risk

PDTC maintains a comprehensive system of internal controls and procedures. PDTC maintains a disaster recovery site for each of its production systems and are 18 kilometers away from each other. Data in each site is mirrored to the other on real time basis to allow for ease in recovery and resumption in the event of a contingency in one location.

PDTC operates its own data centre in a secure facility using fault-tolerant and/or redundant computers. Control procedures exist to monitor changes to software, provide for disaster prevention mechanisms, data storage, retention of files, program libraries and systems software. The internal audit function of PDTC is handled by Isla Lipana & Company (a member of Price Waterhouse Coopers).

### Technical aspect

PDTC utilizes the eClearSettle (eCS) system for its processing. eCS is an internet-based system which supports investor-level record-keeping and reporting.

The SCCP clears and settles securities and cash for all exchange trades while PDTC clears the securities for custodian trades. Matched and locked-in trade data is downloaded from the Exchange to CCCS at 1:00pm on trade date. Participants can readily view their trade data on-line. On T+1, SCCP provides the settlement banks, through file upload, a cash list that discloses the net money obligation or net money entitlement of its clearing members. On settlement date, the SCCP furnishes each clearing member with a projection report which indicates the expected long or short positions of the securities element of specified trade/s as of a certain settlement date.

### Pricing policy

PDTC fees are regularly marked-to-market with other depositories and providers of similar services, and subject to the review and approval of the Securities and Exchange Commission.

### Major on-going and future payments-related projects

The Government has laid down the groundwork for a clearing and settlement house that will facilitate foreign investment in debt instruments. This clearing house will reduce risks in non-delivery and allow government securities dealers to link up with international clearing houses such as Cedel and Euroclear. It will transform the settlement system into one, which requires payment upon delivery of the instruments from the present book-entry system where no physical delivery takes place. The Government is expected to task the PCDI, a private firm set up by the BAP and the Capital Markets Development Council to implement the project. Further, in a bid to finally link the country's debt and equity markets, the BTr has allowed a few government securities to be traded in the local stock market. By allowing the listing of government securities in the stock exchange, participation in the government securities market will be widened. This will result in lower interest rates.

The BSP, in coordination with the Philippine Clearing House Corporation and the clearing participant-banks – universal/commercial, thrift and rural banks, are on the final stages of drafting “The Check Truncation Act of the Philippines”. Check truncation is expected to

improve the check clearing processes and reduce the number of days in clearing checks. While checks will still be evident in truncation processes, the physical delivery of such checks from one bank to another will be eliminated, as clearing will only be based on check images. The process is expected to shorten the number of days before funds are cleared and made available for withdrawal(s) from 3 to 2 days for Greater Manila Area checks and from 7 to 3-4 days for interregional checks.

Establishing the legal framework for the implementation of check truncation in the Philippines was focused on the recognition of check clearing systems as integral parts of the financial infrastructure; and its efficient operation is vital to the stability and effectiveness of the monetary and financial system in the country. This development supports the BSP's mandate, as a central monetary authority and operator of the national payments system, to continuously ensure the safe and efficient operations of payment systems in the country conducive to the sustainable growth of the economy.

The BSP is also working on the settlement of Philippine Stock Exchange (PSE)-trade securities/equities through PhilPaSS in order to mitigate risks apparent in the use of designated commercial banks as settlement banks. Currently, the payments for stock trades are coursed through the issuance of checks. The BSP envisions the real-time cash settlement of stock market trades directly through PhilPaSS. This initiative aims to achieve a delivery versus payment process promote mitigate settlement risks as well as lessening the turnaround time/no. of days involved to clear the checks received for the payment of trades.