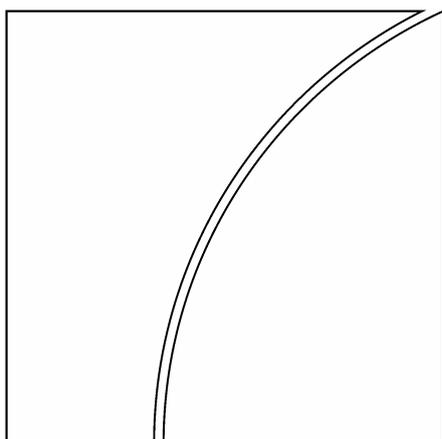


Committee on Payment and Settlement Systems



Payment systems in Sri Lanka

Prepared by the Central Bank of Sri Lanka and the
Committee on Payment and Settlement Systems of
the central banks of the Group of Ten countries

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Foreword

The Committee on Payment and Settlement Systems (CPSS) periodically publishes - under the aegis of the Bank for International Settlements (BIS) - reference works on payment systems in various countries, widely known as "Red Books". The CPSS has also invited the central banks of a number of countries where important developments in payment systems are under way to prepare - in collaboration with its Secretariat at the BIS - separate volumes on their respective payment systems. The present volume, the first edition of the Red Book for Sri Lanka, is a further step towards increasing our understanding of the way payment systems work in different countries.

Properly functioning payment systems enhance the stability of the financial system, reduce transaction costs in the economy, promote the efficient use of financial resources, improve financial market liquidity and facilitate the conduct of monetary policy. In recent years, issues relating to the economic efficiency and financial risks of all types of payment systems have come to the fore.

Central banks have a strong interest in promoting safety and improving efficiency in payment systems. They play a key role in domestic payment system development and, in many cases, operate large-value payment systems. Central banks in many countries have been influential in improving public understanding of payment and settlement arrangements in their countries and public awareness of the various policy issues connected with such arrangements.

Payment systems include not only retail money transfer systems used by businesses and consumers for commercial purposes but also large-value interbank funds transfer systems that underpin the money and credit markets of market-oriented economies. Systems for the settlement of securities transactions and the related payments are also key elements in financial system infrastructure.

We hope that this volume will contribute to the general understanding and awareness of payment and settlement arrangements in Sri Lanka, both domestically and internationally.

Tommaso Padoa-Schioppa
Chairman, Committee on
Payment and Settlement Systems

Sunil Mendis
Governor
Central Bank of Sri Lanka

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Abbreviations

ACH	automated clearing house
ATM	automated teller machine
ATS	automated trading system
BIC	bank identifier code
CAA	Consumer Affairs Authority
CBSL	Central Bank of Sri Lanka
CDS	Central Depository Systems (Pvt) Ltd
CIT	cheque imaging/truncation
CSE	Colombo Stock Exchange
CSS	central securities system
DEX	debt securities trading system
DF	delivery free
DVP	delivery versus payment
EFTPOS	electronic fund transfer at point of sale
EPF	Employees' Provident Fund
FCBU	foreign currency banking unit
FIFO	first in first out
GDP	gross domestic product
IBSL	Insurance Board of Sri Lanka
ILF	intraday liquidity facility
ISIN	International Securities Identification Number
LankaSecure	scripless securities settlement system & scripless securities depository system
LankaSettle	real-time gross settlement system, scripless securities settlement system & scripless securities depository system
LCB	licensed commercial bank
LCPL	LankaClear (Pvt) Ltd
LSB	licensed specialised bank
LTBO	local treasury bills ordinance
MICR	magnetic ink character recognition
MLA	Monetary Law Act
MLNS	multilateral net settlement
MNSB	multilateral net settlement batch
MT	message type
OMO	open market operations
OTC	over-the-counter
PC	personal computer
PD	primary dealer in government securities

PDD	Public Debt Department
PIN	personal identification number
PWS	participant work station
Repo	repurchase agreement
Reverse repo	reverse repurchase agreement
RF	receive free
RSSO	registered stock and securities ordinance
RTGS	real-time gross settlement
RVP	receive versus payment
SEC	Securities and Exchange Commission of Sri Lanka
SLACH	Sri Lanka automated clearing house
SLIPS	Sri Lanka interbank payment system
SSDS	scripless securities depository system
SSSS	scripless securities settlement system
SWIFT	Society for Worldwide Inter-bank Financial Telecommunication
TIF	time in force
TRN	transaction reference number
VAT	value added tax

Introduction

- The financial sector in Sri Lanka has undergone significant reforms during the last two and half decades following the economy-wide liberalisation introduced in 1977. The reform process has been gradual and financial sector reforms gathered momentum in the early 1990s with increased emphasis on deregulation of the financial system, encouragement of competition, relaxation of exchange controls, implementation of institutional reforms and strengthening of legal and accounting infrastructure. Having realised the need for an efficient and robust financial sector to facilitate rapid transformation of Sri Lanka into a financial service hub in the Asian region, the Central Bank of Sri Lanka (CBSL) and the Government have initiated reforms in the financial sector in general and the financial infrastructure, in particular. It was also recognised that payment and settlement system should be developed in line with international standards. Under the central bank modernisation project, which commenced in 2001, CBSL's objectives have been redefined by an amendment to the Monetary Law Act (MLA) in 2002 to achieve price and economic stability and financial sector stability. In the reform process it was expected to achieve following broad objectives:
- establishing core infrastructure required to facilitate the development of financial markets;
- eliminating payment risks inherent in the end of day settlement (deferred net settlement) system;
- improving the efficiency of CBSL's current and future financial operations;
- reviewing and reforming of financial and legal infrastructure;
- promoting public interest in investing in government debt securities;
- enhancing the integrity of trading and settlements of Sri Lanka's public debt;
- improving the efficiency and effectiveness of the implementation of monetary policy; and
- ensuring greater efficiency and sound liquidity management in the banking sector.

CBSL plays a key role in the payment and settlement system being the owner and the operator of "LankaSettle", the systemically important major payment and settlement system, which accounts for more than 75% of the total value of non-cash payments. "LankaSettle" comprises two components: the real-time gross settlement system (RTGS) and "LankaSecure". The RTGS system is the fund settlement component of LankaSettle and LankaSecure is the securities settlement component, which is consisting of the scripless securities settlement system (SSSS) and the scripless securities depository system (SSDS). The CBSL successfully launched the RTGS system in September 2003, replacing the CBSL current account settlement system, which was an end-of-day net settlement system. The integrated RTGS system, SSSS and SSDS went live on 3 February 2004. The retail payment systems, ie clearing of cheques, which was handled by the CBSL from its inception and the operation of the Sri Lanka Interbank Payment System (SLIPS), were divested in April 2002, to a newly formed company, LankaClear (Pvt) Ltd (LCPL), a company jointly owned by the CBSL and licensed commercial banks. The LCPL has taken measures to improve the efficiency of the clearing process of low value and retail payment instruments by better management and introducing new technology. In October 2002, LCPL launched the US dollar cheque clearing system. The CBSL jointly with LCPL has embarked on a cheque imaging/truncation project to shorten the cheque clearing cycle, particularly for cheques presented from outstation areas.

Securities traded in Sri Lanka consist of government securities (treasury bills and treasury bonds), corporate debt securities and equities. The government debt securities are issued in scripless form. Corporate debt and equities listed on the Colombo Stock Exchange (CSE) are initially issued by the respective issuers (companies) to the investors in scrip form. However, there is provision for an investor to have his securities directly deposited (lodged) in the Central Depository System (CDS) of the CSE if he so wishes. The CDS is a fully owned subsidiary of the CSE.

There are two central securities depositories. The scripless securities depository system of LankaSecure (SSDS) serves as the depository/registry for the government debt securities, while the Central Depository Systems (Pvt) Ltd (CDS) serves as the depository for the securities traded on the CSE. When securities are deposited (lodged) in CDS, they are converted from scrip to scripless form. Accordingly, securities in CDS are held in a dematerialised form. Lodging securities in the CDS in

dematerialised form is a prerequisite for trading on the CSE. Those dematerialised securities are traded on screen trading basis on the automated trading system (ATS) operated by CSE.

Government securities and central bank securities are cleared and settled through LankaSecure. With regard to corporate debt and equities traded on the CSE, securities leg is cleared in the CDS, on a real time basis, but the fund-leg of the transaction is settled with a time lag through a private settlement bank.

1. Institutional aspects

1.1 The institutional framework

1.1.1 Regulatory institutions

In Sri Lanka, there are three major regulators for financial institutions.

The Central Bank of Sri Lanka (CBSL), which was established under the Monetary Law Act in 1950, is responsible for securing the objectives of the economic and price stability and financial system stability. The CBSL issues licences, regulates, and supervises all major financial institutions, which include licensed commercial banks (LCBs), licensed specialised banks (LSBs), finance companies, finance leasing companies and primary dealers (PDs) in government securities. It is also responsible for the administration, supervision and regulation of the monetary, financial and payment systems in Sri Lanka.

The Securities and Exchange Commission of Sri Lanka (SEC) is responsible for licensing and regulation of stock exchanges (at present, there is only one stock exchange ie Colombo Stock Exchange), stock brokers, stock dealers, unit trusts and credit rating companies.

The Insurance Board of Sri Lanka (IBSL) issues licences, regulates and supervises insurance business, both life insurance and casualty insurance.

1.1.2 The legal framework for the payment and settlement systems

The major statutes that govern the payment and settlement systems in Sri Lanka are listed and briefly described below:

- The Monetary Law Act, No 58 of 1949 entrusts CBSL with the responsibility for the administration, supervision, and regulation of the monetary, financial and payment systems in Sri Lanka, assigns to the CBSL the sole authority for the issue of currency notes and coins and empowered CBSL to establish and operate systems to transfer funds and settlement of scripless securities. It also vests CBSL with the responsibility for providing cheque clearing services to commercial banks in the country.
- The Bills of Exchange Ordinance, No 25 of 1927, provides for matters relating to bills of exchange, cheques, bankers' drafts, and promissory notes. It specifies the requirements in respect of endorsements, presentment, acceptance, and dishonour of each of the said instruments and liabilities of parties to each instrument in order to facilitate the use of such instruments for commercial transactions efficiently.
- The Banking Act, No 30 of 1988, establishes licensing requirements for LCBs and LSBs, prudential requirements, prudential supervision, accounting and disclosure requirements, and procedures relating to dealing with problem banks and winding up of banks. It assigns the duty of carrying out the provisions of the Act to the Monetary Board of CBSL.
- The Local Treasury Bills Ordinance, No 8 of 1923, which provides for the issue of treasury bills, either in scrip form or scripless form to raise funds for the Government and for repayment thereof by the central bank. It also empowers CBSL to appoint, regulate, and supervise primary dealers and other categories of participants in respect of their transactions in scripless treasury bills and to issue directions to such participants on specified matters.
- The Registered Stock and Securities Ordinance, No 07 of 1937, which provides for the Government to raise funds by issuing registered stock, Government promissory notes,

bearer bonds, and treasury bonds in scrip form or scripless form. It also empowers CBSL to appoint, regulate, and supervise primary dealers and other categories of participants in scripless treasury bonds, and to issue directions to such participants on specified matters.

- The Securities and Exchange Commission of Sri Lanka Act, No 36 of 1987, established the Securities and Exchange Commission of Sri Lanka (SEC) with the objective of establishment of a market in which securities can be issued and traded in an orderly and fair manner, protection of interests of investors, and the operation of a compensation fund to protect investors from financial losses.
- The Exchange Control Act, No 24 of 1953, governs the dealings of Sri Lankan residents in gold and foreign currencies, payments from and to Sri Lankan residents, securities, imports and exports, settlement of property, and also foreign assets of Sri Lankan residents. CBSL has been empowered to grant permission on the matters specified in the Act on the agreement of the Government.
- The Consumer Affairs Authority Act, No 09 of 2003, was enacted in January 2003 to safeguard the interests of consumers in an effective manner by controlling or eliminating anticompetitive, unfair, restrictive and exploitative trade practices. In order to carry out the functions under the Act, the Consumer Affairs Authority (CAA) and the Consumer Affairs Council were established. Banking and financial services come under the purview of the Consumer Affairs Authority.

1.1.3 The role of financial intermediaries

The Banking Act defines two categories of banking institutions, ie LCBs (licensed commercial banks) and LSBs (licensed specialised banks) in the country. LCBs are permitted to engage in a wide range of banking and financial services, including accepting current/demand deposits from customers and dealing in foreign exchange. LSBs are permitted to carry on most of the normal banking and financial services with the exceptions of accepting the current/demand deposits and dealing in foreign exchange.

At the end of 2003, there were 22 LCBs, consisting of 2 state-owned banks, 9 privately owned locally incorporated banks, and 11 foreign banks. There were 15 LSBs, consisting of 6 Regional Development Banks, and 9 LSBs permitted to operate at national level, 5 of which were established by special statutes to cater to the financial needs of specific sectors of the economy.

The National Savings Bank, which was established by a special statute, licensed as an LSB and operates at national level, is wholly owned by the state and is the premier savings bank in the country.

In addition to LCBs and LSBs, there were 1,594 Co-operative Rural Banks and about 8,000 Thrift and Credit Co-operative Societies, which are registered with the Registrar/Commissioner of Co-operatives. They are authorised to accept deposits, to engage in lending and to use the word "bank".

The majority of LSBs were established under government initiatives. Of those state owned LSBs, two development finance institutions have been privatised. The Government owns the National Savings Bank and the State Mortgage and Investment Bank. The Government, CBSL, two state commercial banks, National Savings Bank, and the Employees' Provident Fund jointly own the six Regional Development Banks.

Locally incorporated private LCBs have increased both their branch network and market share recently. Foreign banks have recorded a decrease in number and they concentrate their business in Colombo and its suburbs.

With the nationwide branch networks, LCBs, in particular, the state owned banking institutions dominate the banking sector. At the end of 2003, 79% of the total assets of the banking sector and 80% of deposits were held by LCBs. The state owned commercial banks held about 45% of assets and 47% of deposits of LCBs, while the state owned National Savings Bank held about 62% of assets and about 90% of the total deposits liabilities of all LSBs.

1.2 The role of the central bank

1.2.1 Statutory responsibilities

The CBSL is responsible for the administration, supervision and regulation of the monetary, financial, and payment systems, and is charged with the duty of securing economic and price stability and financial system stability. The functions and duties of CBSL derived from the provisions of the Monetary Law Act inter alia include:

- formulation and execution of monetary policy of Sri Lanka;
- formulation and execution of the exchange rate policy of Sri Lanka;
- acting as the sole authority for the issue of banknotes and coins, which are the legal tender of the country;
- providing facilities to clear transactions among LCBs in Sri Lanka and for the transfer of funds and for settlement of securities transactions;
- acting as the banker and the fiscal agent of the government and government agencies;
- regulating and supervising deposit taking institutions in the country;
- management of foreign reserves of the country; and
- managing the public debt of the Government as agent of the Government.

The CBSL has been empowered by the Monetary Law Act to regulate money supply by regulating assets and liabilities of the commercial banks through directions, determinations, orders, imposition of statutory reserve requirement and open market operations. With regard to payment and settlement system, CBSL has been empowered to establish and operate payment systems and securities settlement systems.

The CBSL is also responsible for the management of the Employees' Provident Fund - the country's largest superannuation fund. The CBSL implements the provisions of the Exchange Control Act as the agent of the Government.

In addition, the CBSL is vested with additional powers and functions under various other laws.

The CBSL is represented on the Board of Directors of the Securities and Exchange Commission (SEC) and the Insurance Board of Sri Lanka (IBSL).

1.2.2 Oversight

In order to ensure sound financial system, the CBSL assumes a responsibility to regulate and oversee the financial sector, including banking institutions, finance companies, and leasing companies. The CBSL regulates the industry through the issue of directions, imposing prudential requirements and issue of orders, off-site surveillance, and on-site examination. The CBSL has a department for supervision of banking institutions as well as a department for supervision of finance companies and financial leasing companies. The Monetary Board of the CBSL has also set up a Financial Stability Committee to observe the developments in the financial sector and to make recommendations to enhance the financial stability.

To ensure efficient and sound payment and settlement systems, the CBSL maintains a close relationship with the major participants of those systems. The Governor and senior officials of the CBSL meet regularly with the chief executive officers of banking institutions, and also with the operators of payments and settlement systems to discuss issues and to take appropriate measures promptly to resolve such issues. It also maintains a close relationship with the Sri Lanka Bankers' Association (Guarantee) Ltd and the Primary Dealers' Association.

1.2.3 Operational role

The CBSL plays a major operational role both in the payment systems and securities settlement systems.

As for the payment systems, the CBSL established and operates the real-time gross settlement (RTGS) system, which is for the settlement of large value and time critical payments. The

RTGS system is the only large value payment system and handles the largest part of the fund transfers (more than 75% of the value of non-cash payments) in the country.

Regarding the securities settlement systems, the CBSL established and operates the "LankaSecure", which consists of SSSS and SSDS. The functions of LankaSecure include the maintenance of central records of ownership and transfer of securities between securities holders' accounts. LankaSecure handles the government securities in scripless form.

The RTGS system and LankaSecure are operated as an integrated system, known as LankaSettle, by the CBSL.

1.2.4 Ongoing work

The major ongoing and planned work relating to payment and settlement system in the country are as follows:

- The cheque imaging/truncation (CIT) project is to be launched by June 2005 replacing the physical delivery of the cheque to the clearing house and then to the paying bank when the clearing process is completed. In implementing the CIT, the clearing process of the cheque, especially in regions will be speeded up as presenting the electronic cheque image to the paying bank will be possible. This will require all commercial banks to use a standardised cheque with image friendly features, setting up of regional cheque image capturing centres, and introducing certain amendments to existing laws.
- There are shortcomings in the legal framework governing all payment media, including lack of adequate legal provisions for implementing the CIT. The CBSL has initiated action to introduce a comprehensive Payment Transactions Law.

1.3 The role of other private and public sector bodies

1.3.1 LankaClear (Pvt) Ltd (LCPL)

The CBSL provided clearing facilities to LCBs from its inception. In 1988, the Sri Lanka automated clearing house (SLACH) was established by the CBSL as a separate unit under the Information Technology Department to handle the increased volume of cheques. To automate the clearing process, the SLACH introduced computerised reader-sorter machines and a cheque format with magnetic ink character recognition (MICR) code. In 1994, the SLACH commenced the SLIPS.

Under the CBSL modernisation project, the CBSL, in April 2002, divested the operations of the SLACH to LankaClear subject to terms and conditions imposed by CBSL. The objective of divestiture is to improve the efficiency of cheque clearing and the SLIPS by utilising new management and introducing new technology to achieve a cost effective operating system with the close corporation of its stakeholders - LCBs. Assets including the clearing equipment of SLACH were transferred to LankaClear and the CBSL staff worked for SLACH were absorbed to the CBSL, resulting in discontinuation of the SLACH.

LankaClear (Pvt) Ltd is an organisation jointly owned by the CBSL (20% of the equity capital) and LCBs. Two state banks hold 28% of the shares of the LCPL. Local private and foreign LCBs own balance 52% of the share capital. The Board of Directors of the LCPL consists of eight non-executive directors including three appointees from the CBSL. The Chairman is appointed by the CBSL. In October 2002, the LCPL launched the US dollar cheque clearing system. Currently, the LCPL operates LankaClear cheque clearing system, the SLIPS and US dollar cheque clearing system.

1.3.2 Colombo Stock Exchange (CSE)

The Colombo Stock Exchange (CSE) is the only stock exchange in Sri Lanka.

CSE was established and took over the stock market operations from the Colombo Share Brokers' Association in 1985. It has a membership of 15 institutions, which are licensed to operate as stockbrokers.

The policymaking body of the CSE is the nine member Board of Directors consisting five members elected by the member institutions and four members appointed by the Minister of Finance.

At the end of 2003, it had 242 listed companies and a market capitalisation of LKR 260 billion.

1.3.3 Central Depository Systems (Pvt) Ltd

The Central Depository Systems (CDS) serves mainly as the central securities depository for corporate debt and equities traded at the CSE. The CDS is a fully owned subsidiary of the CSE and is responsible for clearing and settlement process of secondary market transactions at the CSE. The CDS was incorporated in 1991 and became fully operational in 1992. All listed securities at the CSE are not fully dematerialised. Therefore, it is mandatory for all listed securities issued by companies in scrip form to be lodged in CDS for trading at the CSE. When an investor lodges his securities in CDS he effectively transfers the legal ownership to CDS, while retaining the “beneficial interest”. The beneficial interest is recorded in his account at CDS. The CDS clears and settles corporate debt and equities traded in the automated trading system (ATS) and the “beneficial interest” of government securities traded in the debt securities trading system (DEX) at the CSE.

1.3.4 Sri Lanka Bankers’ Association (Guarantee) Ltd

The Sri Lanka Bankers’ Association (Guarantee) Ltd is an association of the licensed commercial banks. It coordinates among member banks about the cutoff times of business and other common aspects of their businesses. It also maintains a close relationship with the CBSL.

1.3.5 Primary Dealers Association

The Primary Dealers Association is a collective body of the primary dealers in government securities. It formulates guidelines and establishes professional ethics for its member firms. It also maintains a close relationship with the CBSL.

2. Payment media used by non-banks

2.1 Cash payments

The standard unit of monetary value in Sri Lanka is the Sri Lanka rupee. It is divided into one hundred units of cents. The CBSL has the sole authority to issue banknotes and coins on behalf of the Government of Sri Lanka. Currency issued by the CBSL is the legal tender in Sri Lanka and can be used for the payment of any amount.

The denominations of banknotes in circulation at the end of 2003 were LKR 10, 20, 50, 100, 200, 500 and 1,000.¹ The currency note of LKR 200 is printed on a polymer substrate. Banknotes are printed by the “De la Rue Lanka Currency and Securities Print (Pvt) Ltd”, a joint venture of the Government of Sri Lanka and De la Rue, a printing company in UK. The CBSL had issued coins² with denominations of ct 1, cts 2, 5, 10, 25, 50, LKR 1, 2, 5 and 10 at the end of 2003. The Royal Mint, UK, minted almost all of them.

Banknotes and coins are the most popular retail payment medium among individuals and business entities to make “face to face” payments for goods and services. In most institutions, salaries and wages are still paid in cash, despite the increased use of the SLIPS.

At the end of 2003, banknotes and coins in circulation amounted to LKR 99 billion, which was equivalent to 6% of the GDP. Currency in circulation showed an increase of 12% when compared with the previous year. The value of currency held by the public, at the end of 2003, was LKR 86 billion, or 53% of the narrow money supply (M1), which indicates the dominance of cash payments. Banknotes

¹ Banknotes in denominations of LKR 5, 2, 1, cts 50, cts 25 and cts 10 had also been issued. In order to accommodate frequent use, these denominations were also issued in coins. Those banknotes issued are still in circulation.

² Coins in denominations of LKR 100, 500, 1,000 and 5,000 issued as commemorative coins were also in circulation at the end of 2003.

accounted for 96% of the total currency in circulation at the end of 2003. In terms of value, LKR 1,000 banknotes accounted for 74% of the total banknotes in circulation.

2.2 Non-cash payments

The use of non-cash payment instruments is increasing gradually reflecting the change of payment habits of the general public.

Major non-cash payment instruments in use include:

- paper based instruments: cheques, drafts, bills of exchange, promissory notes, money orders and postal orders; and
- electronic payments: credit transfers, direct debits, debit cards, credit cards, and prepaid cards.

2.2.1 Cheques

Cheque is a retail payment instrument widely used by business entities and individuals. It is a negotiable instrument with the following characteristics:

- an unconditional order in writing;
- signed by the drawer himself or any other person authorised to do so on his behalf;
- drawn by a current account holder of an LCB or the CBSL;
- order the bank to pay a specified sum in money on demand or order; and
- drawn in favour of a specified person or to his order or in favour of the bearer.

Cheque is the most extensively used non-cash paper based retail payment instrument and is widely accepted by the business sector. However, the use of cheques for large value payments between banks, and in capital and securities market transactions has dropped significantly with the introduction of the RTGS system in September 2003.

Since September 2003, LCBs and PDs have not been allowed to use cheques drawn on the CBSL to settle their large value and time critical payments under normal circumstances. However, they would be able to use cheques drawn on the CBSL only as a backup measure, if and when the CBSL declares a contingency situation in the RTGS system. The Government and some government agencies, which maintain current accounts with the CBSL, can use cheques drawn on the CBSL. The LCPL clears such cheques.

The total number and value of cheques processed and cleared by the LCPL in 2003, amounted to 36 million and LKR 2,677 billion (approximately USD 28 billion) respectively.

2.2.2 Credit transfers

Customers of LCBs submit credit transfer orders to their banks by written instructions or by electronic means such as ATMs, telephone or Internet. For the interbank settlement of such credit transfers, LCBs send the payment order to the SLIPS operated by LCPL. The SLIPS clears the credit transfer between banks with a value date of T+1 to T+14.

Corporate customers use direct credit transfers mainly to pay salaries, dividends and pensions. They submit details of such bulk payments to their banks using diskettes, magnetic tapes and electronic file transfers.

The total value and volume of credit transfers processed and cleared by the SLIPS during 2003 amounted to LKR 979 billion (USD 10 billion) and 2 million respectively. The total value of credit transfers recorded a drop of 27% in 2003, from the previous year due mainly to switching over of large value payments from the SLIPS to the RTGS system.

2.2.3 Direct debit transfers

Direct debit transfer is an instrument used by customers for their regular payments such as paying for utility services (ie electricity, telephones and water etc), loan repayments, and dues on credit cards. Bank customers give direct debit authorisation in advance to their banks for debiting the amounts claimed by the billing utility/financial organisations from their specific accounts. The billing organisation sends details of such preauthorised direct debit transfers in a magnetic tape or diskette to the bank and also informs details of the bill to each customer well in advance the payment date. Such direct debit transactions are sent to the SLIPS by LCBs for clearing. The use of direct debit transfers is very limited and has shown a very slow growth in recent years.

2.2.4 Payment cards

(a) Credit cards

Credit cards were first introduced to Sri Lanka in 1989. It represents a “pay later type” payment instrument, which permits cardholders to purchase goods/services up to a revolving credit limit approved by the issuing bank. Cardholders are also permitted to withdraw cash up to an approved limit from their credit card accounts using ATMs or over the counter at any bank, which accepts the respective card for cash withdrawals.

Customers are permitted to make the minimum sum/part/full payment by the due date. An interest is charged on the amounts unsettled by the due date. An additional fee is charged on transactions, which are considered as cash withdrawals. The use of credit cards to purchase petrol, diesel, traveller’s cheques, drafts and telegraphic transfers are generally considered as cash withdrawals.

At the end of 2003, nine LCBs and one non-bank company had issued credit cards in Sri Lanka. The majority of the credit cards issued by LCBs are affiliated with Visa, MasterCard, or AMEX. Almost 78% of these cards are globally accepted. The non-bank company issues domestic credit cards only.

The total number of credit cards in use have shown a significant increase and reached a level of 406,130 (one card for every fifty citizen) at the end of 2003, due mainly to vigorous promotional campaigns. The total volume and value of transactions carried out through credit cards have undergone a steady growth and amounted to 7.7 million and LKR 23.2 billion respectively in 2003.

(b) Debit cards

Debit cards are mainly used by cardholders to effect payments and withdraw cash from their accounts through an ATM or at an EFTPOS terminal which has direct access to a Sri Lanka rupee or foreign currency account (current, savings, non resident foreign currency account etc) of the cardholder. Debit cards are not permitted to be used for purchasing/importing goods in commercial quantities and for capital transfers.

At the end of 2003, five LCBs had issued Visa Electron and the debit MasterCard. The total volume and value of using debit card was 0.2 million and LKR 0.7 billion respectively in 2003.

(c) Prepaid cards

Prepaid cards, which allow “pay before” type transactions, are largely in use for obtaining small value services such as public telephones, Internet services and overseas telephone calls. The use of these prepaid cards have increased significantly with the introduction of card-based public telephones by a number of telephone companies.

2.2.5 Payment cards infrastructure

(a) Automated Teller Machines (ATMs)

ATMs are convenient instruments for bank customers to perform their day-to-day banking transactions without visiting bank counters. ATMs, which were introduced to Sri Lanka in 1986, were initially used mainly for cash withdrawals. Currently, banks are providing a wide range of services through ATMs, ie cash withdrawals, balance inquiries, chequebook requisition, transfer of funds, cash and cheque deposit, and utility/other bill payments.

At the end of 2003, 14 LCBs and one LSB had installed 721 ATMs. The total volume of financial transactions made through ATMs (including cash withdrawals), showed a steady growth and reached

a level of 34 million during 2003. The total value of financial transactions made through ATMs during 2003 was LKR 119 billion.

(b) *Electronic Funds Transfer at Point of Sale (EFTPOS)*

EFTPOS is a debit card mechanism, which allows bank customers to use their debit cards to purchase goods and services online debiting of their own current/savings accounts while crediting the trader's account overnight. EFTPOS, which was introduced to Sri Lanka in 1994, have gradually become a substitute for cash and cheques. The total number of EFTPOS terminals, which accept debit cards, was 3,913 at the end of 2003.

2.2.6 Other access channels for banking and payments

(a) *Telephone banking*

Under telephone banking facilities, bank customers are given an access to their bank accounts and to send messages to banks using a telephone/mobile phone at any time of the day to obtain the following services:

- checking the balance of his/her account;
- credit card services including checking of credit card balance, applying for a new credit card and checking of the status of a credit card application;
- reporting of a lost or stolen cash/credit card; and
- information on banking services and products.

The privacy and security of telephone banking are secured with phone banking number/credit card number and personal identification number (PIN).

As of June 2004, nine LCBs had been providing telephone banking facilities to individual and corporate customers. The quality of services and level of these services vary from bank to bank depending on their business strategies. The total number of bank customers registered for telephone banking services was 438,515 at the end of 2003, which showed a year-on-year increase of 75%.

The total volume of financial transactions handled by telephone banking was 87,847 during 2003. The total value of transactions handled through this media, which stood at LKR 32 billion (USD 0.3 billion) in 2002 decreased to LKR 1 billion in 2003 due mainly to shifting of phone banking to internet banking.

(b) *Internet banking*

Internet banking was started in Sri Lanka in 1999 in order to allow bank customers to access the banking services in a convenient and efficient manner. Banks have developed Internet services to provide better customer services particularly to their corporate customers to perform large value payment and import/export related transactions. The level of usage of Internet banking varies from bank to bank depending on the level of technology, customer base and business strategies.

The total number of bank customers enjoying this facility showed an increase during last two years and reached 24,650 at the end of 2003. The total volume and value of Internet banking transactions during 2003 amounted to 188,057 and LKR 81 billion (USD 0.8 billion) respectively.

(c) *Postal instruments*

Post offices, which are scattered nationwide, issue money orders and postal orders to transfer funds from person to person. The postal network is the largest branch network in terms of customers and regions in Sri Lanka. At the end of 2003, there were 4,680 post offices, including sub-post offices and agency post offices.

Postal and money orders are mainly used to make small value payments to individuals and to pay pension and social security payments by government.

The total value of payments made through postal instruments was LKR 11 billion (USD 118.6 million) during 2003.

2.2.7 E-money schemes

At the end of 2003, there was no e-money scheme in operation in Sri Lanka.

2.3 Recent developments

A project is underway to introduce cheque imaging/truncation by June 2005, to reduce inefficiencies involved in handling and movement of physical cheques and to shorten the cheque clearing cycle particularly in the regions.

In order to overcome legal constraints relating to retail payments in electronic form and the acceptance of the electronic presentment of cheques, the CBSL initiated action to introduce a payment transactions law.

3. Interbank exchange and settlement systems

3.1 General overview

The following interbank exchange and settlement systems are in operation in Sri Lanka.

- the real-time gross settlement (RTGS) system: a component of "LankaSettle";
- LankaClear cheque clearing system;
- Sri Lanka interbank payment system (SLIPS);
- local cheque clearing; and
- US dollar cheque clearing system.

Among these five payment systems, the RTGS system is the only large value payment system and the rests are retail payment systems.

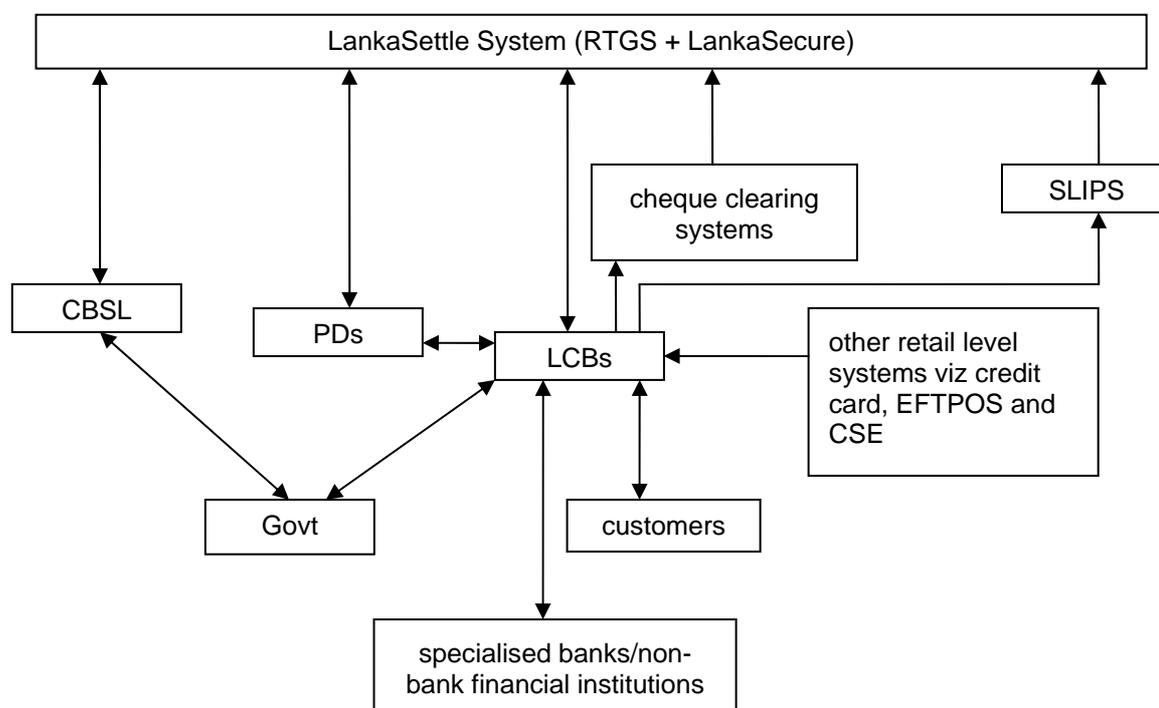
The CBSL owns and operates the RTGS system. The RTGS system is a component of "LankaSettle". The RTGS system is a fully automated systemically important payment system, which settles large value and other urgent rupee payments, including cash leg settlement of government securities transactions.

The LCPL, under authorisation by the CBSL, operates LankaClear cheque clearing system, the SLIPS, and US dollar cheque clearing system. The LCPL calculates the net positions of cheques and the SLIPS and sends these positions to the CBSL. The net positions are settled irrevocably through the RTGS system.

The three regional offices of the CBSL operate local cheque clearing in four local areas and inform the net positions to the head office of the CBSL for final settlement in the RTGS system.

Obligations arising from credit card transactions and US dollar cheque clearing system are settled at LCBs, which serve as settlement banks.

Figure 1
Payment and settlement systems in Sri Lanka



3.2 The real-time gross settlement (RTGS) system

The RTGS system went live in September, 2003. This system is for the settlement of large value and time critical payments among LCBs, PDs and the CBSL. The RTGS system replaced the “current account settlement system”, which had been a cheque based end-of-day net settlement system, operated manually by the CBSL. The RTGS system provides participants with full facilities over their inter-participant payments as well as their customer payments providing an opportunity for more sound liquidity management.

3.2.1 Operating rules

Section 62A (3) of the Monetary Law Act empowers the CBSL to enter into agreements with participants of a payment and settlement system established and operated by the CBSL and to issue in writing to the participants of the system rules for operation of such a system, which may, inter alia, provide for:

- provision of intraday credit against the collateral of securities to the participants and the conditions attached to the provisions of such credit;
- appointment of the CBSL as a certification authority for the purpose of issuing certificates to participants under any law applicable to the appointment of certification authority in respect of electronic signatures;
- formulation and adoption of a code of conduct for participants;
- authentication of transactions carried out electronically;
- the CBSL, if it considers necessary in the interest of the system, to cease or suspend the operation of the system, or to withdraw or suspend the privileges or rights of any participant or category of participants or to suspend or revoke the membership of a participant in the system;

- appointment of auditors or inspectors for the auditing or inspection of the operating systems of participants in respect of the settlement system; and
- payment of charges and fees to CBSL by participants.

The system rules issued by CBSL in August 2003, describe the duties, obligations and rights of CBSL and participants and how CBSL and participants interact at business level in the system. The system rules broadly cover the following areas:

- access criteria for participation;
- payment messaging in RTGS;
- queue management;
- intraday liquidity facility (ILF);
- net settlement batches;
- operating calendar and schedule;
- security of LankaSettle operations;
- technical, security and backup standards;
- contingency planning ;
- system administration and user assistance;
- system changes and change control;
- settlements of disputes between participants; and
- fees and charges.

To participate in the LankaSettle system (including the RTGS system), each participant is required to sign the following four agreements with the Monetary Board of the CBSL:

- accession agreement;
- mandate agreement in respect of the opening, maintenance and operation of settlement and securities accounts and matters related thereto;
- master repurchase and reverse repurchase agreement for open market operations; and
- agreement on intraday liquidity facility.

These agreements provide the legal foundation for each aspect of the activities in LankaSettle including the RTGS system. Further, they obligate the participants to abide by the system rules of the LankaSettle.

3.2.2 Participation in the system

The participation in the RTGS system is limited to LCBs and PDs (Primary Dealers) in principle. The CBSL itself participates in the system. The CBSL may appoint an entity giving the facility to maintain a settlement account with the CBSL as a participant for limited purposes, provided that it satisfies the requirements for participation in the RTGS system.

As of June 2004, there were 33 participants in the RTGS system, which included the CBSL, 22 LCBs, 9 non-bank PDs and the Employees' Provident Fund (EPF). The EPF is regarded as a designated non dealer bidder. The Central Depository Systems (Pvt) Ltd, a fully owned subsidiary of the Colombo Stock Exchange (CSE), participates as a direct participant since October 2004.

3.2.3 Types of transactions

The RTGS system settles Sri Lanka rupee transactions between direct participants provided that the payers' and the payees' settlement accounts are neither suspended nor defaulted, and the payer's account has a sufficient balance. These transactions could be broadly categorised into the following:

- General credit transfers: these are payments among participants regarding call market transactions and securities transactions etc.
- Transactions with the CBSL: these are payments for which one of the parties is the CBSL. Open market operations, cash delivery to and from LCBs, the rupee leg of foreign exchange transactions and government securities transactions are included in this category.
- Multilateral net settlement balances: these are net positions of LankaClear cheque clearing system and the SLIPS sent by the LankaClear and local cheque clearing sent by the regional offices of the CBSL.
- Customer payments: any other high value and time critical payment sent to the RTGS system by a participant on behalf of a customer.

The RTGS system accepts multiple customer credit transfers (MT 102), single customer credit transfers (MT 103), general financial institution transfers (MT 202) and financial institution transfer executions (MT 205) entered by participants through SWIFT network.

In addition, the CBSL is authorised to make transfers between participants' accounts:

- settlement of delivery versus payment (DVP) transactions submitted by participants to LankaSecure system using MT 541 (delivery versus payment) and MT 543 (receive versus payment);
- settlement of the CBSL's open market operations;
- settlement of receipt of funds for primary issues and payments for redemptions and interest payments of government securities;
- granting and repayment of intraday liquidity facility (ILF);
- settlement of net clearing obligations;
- debiting any fee or charge due from participants to the CBSL; and
- transferring funds from a participant account on his request, when there is an operational problem with its infrastructure.

The RTGS system accepts forward dated transactions up to ten calendar days.

3.2.4 Operation of the system

The payment instructions are transmitted to the RTGS system via SWIFT FIN Y-Copy service. Therefore, participants are required to subscribe to the SWIFT network and the FIN Y-Copy service and also to join in the LankaSettle closed user group.

Participants should comply with message standards as well as rules of SWIFT, which prescribe technical and security requirements for participation. Participants are required to have adequate contingency arrangements to avoid disruptions for entering the transactions into the system.

Upon receipt of a valid payment instruction, the RTGS system processes payment instructions individually on a real time basis throughout its operating hours. Payments are debited from settlement account of paying participant and credited to receiving participant's account instantaneously, provided that the sending participant has sufficient balance in his account to make the payment. Funds are irrevocably credited to the receiving participant ensuring settlement finality.

The Payments and Settlements Department of the CBSL operates the RTGS system. The system is open from 8.00 am to 4.00 pm on bank business days.

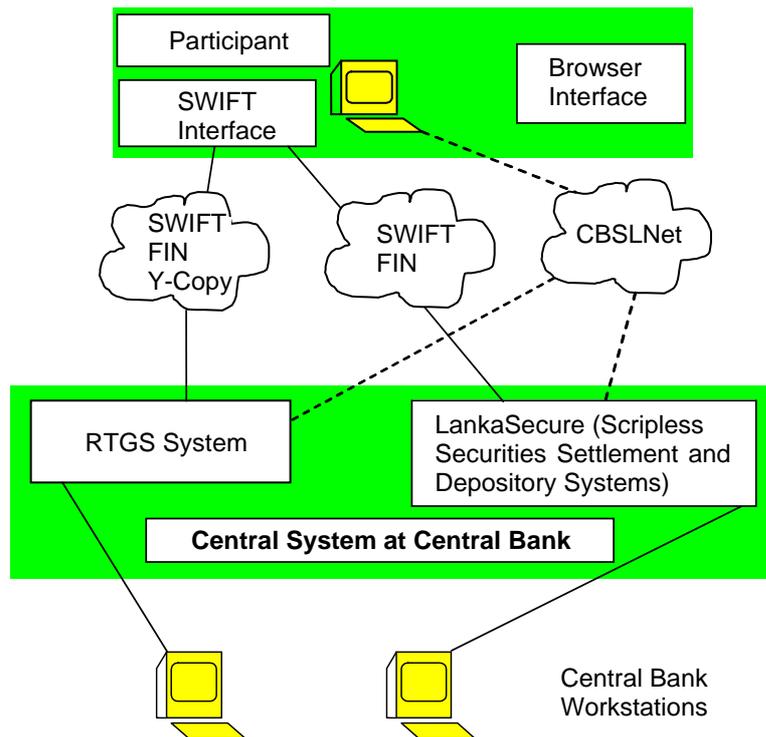
The net positions of LankaClear cheque clearing systems and the SLIPS are settled in batches in the RTGS system at specified times in the operating schedule (the details of the operating schedule are given in Appendix 1).

Each participant has a participant work station (PWS), which is a PC with LankaSettle browser interface. With PWS, participants can make online access to the following information of the RTGS system:

- its own account balance;
- payment messages in the queue; and
- operational status of LankaSettle.

In addition, participants can cancel/reprioritise their queued payments with PWS.

Figure 2
LankaSettle



3.2.5 Settlement procedure

Participants use FIN Y-Copy service of SWIFT to submit payment instructions to the RTGS system. When the SWIFT network receives a payment instruction from the participants with the identifier code “LKB” in its header, selected information of the payment instruction is sent to the RTGS system by an MT 096 message. The MT 096 message includes the sender’s and receiver’s bank identifier code (BIC), transaction reference number (TRN), value date, amount, and a priority level.

Participants can prioritise the payment instructions with prioritisation code in the range of 11-98. The CBSL can use priority levels in the range of 0-99.

(a) Settlement of payment message

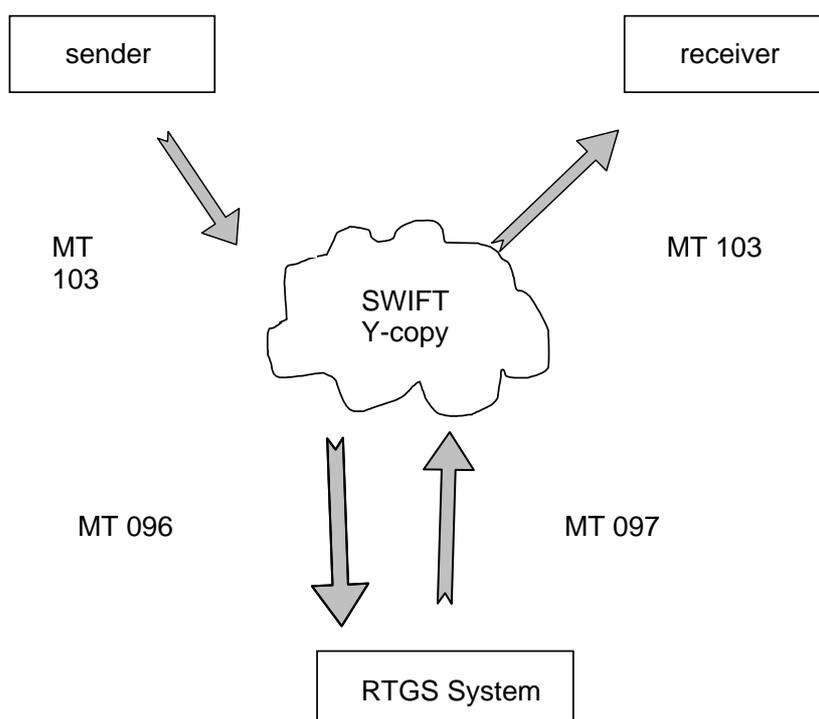
A payment is settled immediately in the RTGS system when the payment message is received and if the following conditions are satisfied:

- the RTGS system is open for business (8.00 am - 4.00 pm on a bank working day) and not suspended;
- settlement process for the relevant message category has started (8.00 am - 3.00 pm for customer payments and 8.00 am - 4.00 pm for inter-participant payments on bank working days) and not ended or suspended;
- both payer’s and payee’s accounts are neither suspended nor defaulted;

- payer has a sufficient balance in his account to settle the payment;
- payer's payment queue is not blocked by a payment message with either a high priority or the same priority but has been entered before.

Once the payment is settled in the RTGS system, an MT 097 message is sent to the SWIFT network by the RTGS system, which instructs SWIFT to release the original payment instruction to the receiver. When the payee receives the payment instruction, the payment is already settled in the RTGS system irrevocably. SWIFT sends an MT 012 to the payer to confirm the settlement of his payment.

Figure 3
Payment Process Flow



(b) *Rejection of payment message*

The RTGS system immediately rejects a payment message under the following circumstances:

- payment message for the past value date;
- payment message dated ahead more than 10 calendar days;
- the deadlines passed for the message type (after 3.00 pm for customer payments and after 4.00 pm for inter-participant payments);
- either payer's or payee's account is in "default" status;
- transaction reference number (TRN) is the same as the TRN of another payment message from the same participant for the same value date and the same message type.

When a payment message is rejected, the sender receives an MT 019 message.

(c) *Queue management*

If there are inadequate funds in the payer's account, the payment message is held in a central queue. The payment message is queued until the required funds are made available. The queue is managed based on FIFO (first in, first out) principle as for the payment messages with the same priority. The participants are permitted to monitor their own queues in real time.

A payment message is also queued in the following situations:

- the RTGS system is not open for business (before 8.00 am);
- settlement process for the message type has not started (before 8.00 am);
- future value date (up to 10 calendar days);
- either the sender's or receiver's account or the RTGS system itself is suspended;
- payer's payment queue is blocked with one or more payment messages with either higher priority or the same priority with an early time stamp.

The sender and the CBSL can cancel a payment message held in the queue. All remaining unsettled payment messages would be automatically cancelled with the closure of the system for business for the day.

(d) Gridlock resolution algorithm

When the payment queues of two or more participants are blocked due to insufficient funds to settle the payments at the head of each queue, which can be settled by a cyclical movement of funds, the "gridlock resolution algorithm" can make a batch processing of these payment messages simultaneously without changing the original settlement order of each participant. To be more precise, the algorithm will look for a group of payment messages and calculate the "simulated net position" of each participant. If this process generates positive balances in the accounts of the respective participants, the RTGS system will then process all the related payment messages simultaneously. The gridlock resolution algorithm executes automatically once in every 30 minutes.

(e) Multilateral net settlement (MLNS) batches

The RTGS system settles multilateral net settlement (MLNS) batches (which contain net clearing obligations/claims of LCBs under different clearing systems) in a different manner. When an MLNS batch is submitted to the RTGS system, it suspends the normal settlement process for a few seconds and starts to earmark funds for each debit position. If sufficient funds for all debit positions can be earmarked, it settles all debit and credit transactions as a single batch. If, one or more participants do not have a sufficient balance, in the settlement account, none of the transactions is settled. The system will repeat the same process in every two (2) minutes until the batch is settled or cancelled by the CBSL.

3.2.6 Credit and liquidity risk

(a) Credit risk

Credit risk in the RTGS system is eliminated by settling funds in real time, when sufficient funds are available in the payer's account.

(b) Liquidity risk

In the RTGS system, payments are settled on gross basis. Therefore, participants have to maintain higher balances in their settlement accounts, compared to the end-of-day net settlement system. Participants are allowed to utilise their required reserves for settlements during business hours. For the smooth settlement in the RTGS system, the CBSL provides interest free, fully collateralised Intraday Liquidity Facility (ILF) to assist participants to meet their liquidity requirements. The amount of funds to be provided to a participant under ILF is determined by valuing the securities at the applicable official prices with a haircut. Funds provided under ILF by the CBSL are fully secured by eligible securities such as treasury bills and treasury bonds. Participants agree to repay the funds obtained under ILF by the time specified in the Daily Operating Schedule. When the title of the securities used as collaterals is transferred to the CBSL, the participants have only a right of getting securities released on the same day upon repayment of the funds. If the balance of borrower's settlement account is not sufficient to repay ILF, the intraday credit is spilled over to the overnight credit. But in that case, the participant is charged with heavy penalty.

3.2.7 Pricing

The establishment of the LankaSettle system was funded by the World Bank by way of a soft loan to the Government of Sri Lanka. The CBSL as the owner/operator of the LankaSettle system, in pricing the services of the LankaSettle, expects to recover direct operational costs and to raise funds to recover the investments and the capitalised direct operational costs within an 8 year period.

Accordingly, the CBSL charged an all-inclusive flat fee of LKR 240 (approximately USD 2.49) per settlement at the end of 2003. Rejected and cancelled messages, non-payment messages such as enquiries and the account transfers done by the CBSL for net positions were not charged.

Charges are calculated at the end of each month and debited from the participant's settlement account in the RTGS system on the third working day of the following month.

3.2.8 Statistical data

The total volume of transactions settled by the RTGS system from September to December 2003 was 38,454 with a total value of LKR 4,210 billion (USD 44 billion). The average volume and value of transactions settled per day during that period was 499 and LKR 55 billion (USD 570 million) respectively.

3.3 Other large-value payment systems

At present, there is no large-value payment system other than the RTGS system in Sri Lanka. However, certain institutions still draw cheques for large value payments and those cheques are cleared under the cheque clearing system operated by the LCPL.

3.4 Retail payment systems

3.4.1 LankaClear cheque clearing system

The LCPL provides clearing of cheques and drafts in Sri Lanka rupees to LCBs in Sri Lanka subject to guidelines and directions issued by the CBSL. Its cheque clearing system includes three types of clearing;

- main cheque clearing: automated processing and clearing of cheques;
- cheque settlement clearing: manual processing of returned cheques; and
- rupee draft clearing: manual processing of cheques and drafts of foreign banks drawn on their "nostro" accounts with LCBs in Sri Lanka.

(a) Operating rules

The LCPL operates with a set of rules, which cover the following areas:

- types of services;
- responsibilities of participants;
- operating time table; and
- responsibilities of the LCPL.

(b) Participation in the system

Participation in cheque clearing system operated by LCPL is limited to LCBs. Bank branches participate through their respective head offices. The CBSL also participates in the system.

(c) Types of transactions handled

The LCPL clears cheques, drafts, dividend warrants, and foreign drafts denominated in Sri Lanka rupees and drawn on the CBSL and LCBs. There is no lower or upper limit on the volume or value of such payment instruments to be cleared through the LCPL.

(d) *Operation of the system*

Under the main cheque clearing, all cheques collected throughout the day are bundled into batches by the commercial banks/branches and dispatched to the LCPL before the cutoff time (at 5.45 pm). The bundle is accompanied by a batch ticket, which shows the total amount of the batch of cheques. At the LCPL, the data contained in the magnetic ink characters of the cheques are read and captured onto the database and the cheques are sorted by the reader-sorter machines. Details of the rejected cheques are re-entered into the database through a manual key-in process. On completion of the cheque clearing process, the LCPL provides the consolidated debit/credit information, which includes the list of outward/inward items and net positions, to the CBSL in printed form as well as in electronic media. All LCBs receive their inward cheques with detailed and summary reports together with report on total value of their outward clearing. Apart from these reports, the inward clearing data is provided to LCBs in tapes/diskettes/electronic file transfer at their request, usually between 8.00 pm and 9.30 pm Net clearing positions are settled in the RTGS system.

The cheques and drafts in Sri Lanka rupees drawn on the “nostro” accounts of foreign banks with LCBs in Sri Lanka and in favour of customers of LCBs are treated separately from the cheques of domestic banks for clearing purposes. These items are collected and dispatched to the LCPL and cleared manually at about 12.30 pm This process is called the “rupee draft clearing”. The settlement of net positions of rupee draft clearing is also executed through the RTGS system.

If the paying bank dishonours a cheque/draft in the main cheque clearing or rupee draft clearing, it is treated as an unpaid returned item to the presenting bank. Such cheques/drafts are forwarded to the LCPL for manual processing, carried out by representatives of LCBs at the LCPL at 12.30 pm of the following business day of main cheque clearing and rupee draft clearing. This manual processing is called “cheque settlement clearing”. On completion of this clearing, the summary settlement information is submitted to the CBSL, and net positions are settled in the RTGS system. In general, it is considered that the proceeds of cheques cleared in the main cheque clearing cannot be withdrawn until the completion of the settlement of the cheque settlement clearing.

(e) *Settlement procedure*

Multilateral net positions of the participants under the main cheque clearing are settled in a batch in the RTGS system at 8.30 am on the following business day of the cheque clearing. The net positions arising from the settlement clearing and rupee draft clearing are settled in two separate batches at 2.15 pm on the same day. Net clearing obligations of the adjustment clearing (correcting of technical mistakes) are settled in the RTGS system at 2.45 pm on the same day.

(f) *Credit and liquidity risk*

LankaClear cheque clearing system has no debit cap or collateral arrangement for the risk management. There is also no loss sharing arrangement or unwinding clauses in the system rules to ensure timely settlement of net positions in the RTGS system in case of default of a participant. Credit and liquidity risk is mitigated by the possibility to use the reserves maintained under the statutory reserve requirement and intraday liquidity for the settlement of net clearing obligations arising from the cheque clearing.

(g) *Pricing*

The LCPL charges for the cheque clearing services on a cost recovery basis. Costs involved include maintenance and operational costs. At the end of 2003, LKR 2.00 (USD 0.021) was charged for processing an item. The details of charges are given in Table 1.

Table 1

Charges of LankaClear cheque clearing system as at end 2003

Type of charges	Charge (excluding VAT) per unit (in rupees)
Main cheque clearing	
Item processing charges - cheques/drafts	2.00
Fine sort charges (optional)	0.35
Invalid items	100.00
Present reject items (amount, field)	2.00
Drawn reject items	5.00
Late submission charges (5.45 pm-6.15 pm)	2.00
Encoding charges (amount, field)	5.00
Full line	15.00
Past (after 24 hours) printout charges (per request)	500.00
Late query reporting - (per request)	
After 24 hours-7 days	50.00
After 7 days-30 days	150.00
After one month	200.00
Diskette charges (monthly)	5,700.00
Online inward data transfer (monthly)	4,000.00
Bank Directory	250.00
Cheque settlement clearing	
Item processing charges - cheques/drafts	0.50
Data entering at the LCPL	300.00

Source: LankaClear (Pvt) Ltd.

(h) Statistical data

Total volume of rupee cheques cleared in main cheque clearing during 2003, was 36 million amounting LKR 2,677 billion (USD 27.7 billion). The daily average volume and value of cheques cleared were 151,383 and LKR 11 billion (USD 0.12 billion) respectively. The daily average values of cheques/drafts cleared during 2003, in the cheque settlement clearing and rupee draft clearing amounted to LKR 144.4 million and LKR 18.1 million respectively.

The RTGS system settled net positions amounting to LKR 142 billion (USD 1.5 billion) under all cheque clearing systems during the period of September - December 2003.

3.4.2 Sri Lanka interbank payment system (SLIPS)

The Sri Lanka interbank payment system (SLIPS) is an ACH (automated clearing house) type retail payment system. The SLIPS handles small value bulk payments including credit transfers and direct debits. This is an offline payment system and payment instructions are submitted by magnetic tapes/diskettes/electronic file transfers. The SLIPS was introduced in August 1994 and has been operated by the LCPL.

(a) Operating rules

The procedure manual issued by the LCPL provides a guide to the procedures and rules of the SLIPS.

(b) Participation in the system

All LCBs (22) and the CBSL are direct participants of the SLIPS. Other financial institutions, corporate bodies and individuals can participate in the SLIPS only through their correspondent banks.

(c) *Types of transactions handled*

The types of transactions handled by the SLIPS are:

- Credit transfers: these credit transfers are widely used to pay salaries, dividends, pensions etc.
- Direct debits: these debit transfers are used mainly to collect regular payments relating to utility bills such as electricity, telephone, and water.

(d) *Operation of the system*

Participants submit the payment instructions to the LCPL by magnetic tapes/diskettes/electronic file transfers. Cutoff time to deliver magnetic tapes/diskettes/electronic file transfers to the LCPL is 3.30 pm. The LCPL routes transactions from the originating bank (the bank which presents transactions) to the receiving bank (the bank which receives transactions). After calculating the net positions, the LCPL provides the settlement information to the CBSL in printed form and electronic media by 5.00 pm on the same day.

(e) *Settlement procedure*

Settlement of the net positions of the SLIPS is made through the RTGS system at 8.30 am on the following business day of processing and clearing of transactions at the LCPL.

(f) *Credit and liquidity risks*

Credit and liquidity risk management of the SLIPS is similar to that of LankaClear cheque clearing system explained above. There is no collateral arrangement or loss-sharing rule.

(g) *Pricing*

The LCPL charges 50 cents per item on originating bank, subject to a minimum fee of LKR 250 per month to cover the operational cost. Details are given in Table 2.

Table 2
SLIPS Charges as at end 2003

Type of charges	Charges in rupees
SLIPS charges per item (minimum LKR 250 per month)	0.50
Past (more than 24 hours) printout charges per request	500.00
Online data transfers (per month)	2,000.00

Source: LankaClear Pvt Ltd.

(h) *Statistical data*

The total value cleared through the SLIPS during 2003 amounted to LKR 979.3 billion (USD 10.15 billion), indicating a substantial drop of 27% compared with the previous year. This indicated that banks have shifted some of their large value payments to the RTGS system since September 2003.

Out of the total value of transactions under the SLIPS in 2003, credit transfers accounted for 99.99% and direct debits made up only just 0.01%.

3.4.3 Local cheque clearing

Regional offices of the CBSL operate local cheque clearing in four towns in regions: Anuradhapura (a town in the North-Central Province), Matale (a town in the Central Province), Kandy (a city in the Central Province) and Matara (a town in the Southern Province). The local clearings are carried out by the CBSL regional offices in Anuradhapura, Matara, and Matale. The Matale regional office also

executes Kandy clearing. The participants of the local cheque clearing are local branches of LCBs. Local clearing is made twice a day at Kandy and once a day in other three locations.

(a) *Operating rules*

There are no specific documents on operating rules for local cheque clearing.

(b) *Participation in the system*

The number of LCBs and total number of participants in each local cheque clearing are given in Table 3. Multiple branches of some LCBs participate in the clearing.

Regional office of the CBSL	Location of clearing	No of LCBs	No of participants
Anuradhapura	Anuradhapura	7	10
Matale	Matale	6	6
	Kandy	12	19
Matara	Matara	10	10

(c) *Types of transactions handled*

The regional offices of the CBSL clear cheques drawn in Sri Lanka rupees on LCBs. There is no lower or upper limit on the cheques to be cleared by the regional offices.

(d) *Operation of the system*

Main clearing and settlement clearing of each region are carried out according to the time schedule in Table 4. Settlement clearing for the returned items is made on the following working day.

Location of clearing	Type of clearing	Schedule
Anuradhapura	Main clearing	11.30 am
	Settlement clearing	8.30 am on the following working day
Matara	Main clearing	11.30 am
	Settlement clearing	8.30 am on the following working day
Matale	Main clearing	12.30 pm
	Settlement clearing	9.00 am on the following working day
Kandy	First clearing	9.00 am
	Second clearing	12.00 noon
	Settlement clearing	9.00 am on the following working day

(e) *Transaction processing environment*

Each regional office of the CBSL handles cheque clearing process manually.

(f) *Settlement procedure*

After completion of each clearing, details of net positions are faxed to the CBSL. The net positions of each main clearing are settled in the RTGS system on the same day on which cheques are presented to the regional offices of the CBSL. The net position of each settlement clearing cycle is settled in the

RTGS system on the following business day. Net clearing obligations/claims of each local cheque clearing are settled in the RTGS system as a single batch at 2.45 pm

(g) Credit and liquidity risks

Credit and liquidity risk management under local cheque clearing is much similar to that of the LankaClear cheque clearing system explained in Section 3.4.1 (f).

(h) Pricing

No charge is levied on the local cheque clearing at the regional offices of the CBSL.

(i) Statistical data

During 2003, local cheque clearing cleared 1 million cheques amounting to LKR 51 billion (USD 528 million).

3.4.4 US dollar cheque clearing system

The US dollar cheque clearing system was launched by the LCPL in October 2002. This is a semi-computerised retail clearing system for cheques and drafts drawn in US dollars.

Main objectives of this system are to:

- reduce the time lag for clearing and settlement of US dollar cheques/drafts from about three weeks to about 4 working days;
- reduce delays in receiving the funds for US dollar cheques/drafts by depositors in Sri Lanka; and
- reduce costs on foreign exchange payments involved in clearing and settlement of cheques/drafts by introducing multilateral net clearing mechanism.

This system handles following categories of US dollar cheques/drafts:

- US dollar cheques/drafts issued by LCBs in Sri Lanka payable to Sri Lankan individuals and institutions; and
- US dollar cheques/drafts issued by banks and money exchangers outside Sri Lanka drawn on LCBs in Sri Lanka.

Before introducing the US dollar cheque clearing system, a substantial number of such cheques/drafts were despatched to correspondent banks abroad for realisation and the value was credited to LCBs' accounts. But this settlement process took as long as about 3 weeks to make the final credit to depositors. In addition to that, the charges were relatively high (ie about US dollars 5 to 25 per cheque/draft). As the bank would pass such costs onto customers, the costs were ultimately borne by the customers.

(a) Operating rules

The system rules describe the procedure and responsibilities of participants, the LCPL, and of the settlement bank.

(b) Participants

All LCBs in Sri Lanka are eligible to participate in the US dollar cheque clearing system. At the end of 2003, 16 LCBs participated in this system.

(c) Operating procedure

Day One

- Each LCB delivers their US dollar cheques/drafts, clearing statement which indicates the value of outward US dollar items, and diskettes containing all outward clearing figures to the LCPL by 12.30 pm on each working day.
- Those US dollar cheques/drafts (outward clearing items) are exchanged among LCBs.

- The LCPL processes information contained in all the diskettes and calculates the net position of each LCB.

Day Two

- The dishonoured cheques/drafts are handled at the settlement clearing of cheques/drafts on the following day.
- The LCPL informs the net positions in US dollar (clearing balances after making adjustments for returned cheques/drafts) to each participant and to the settlement bank.
- Each participant is required to pay in the required funds for settlement to his US dollar settlement account maintained with the settlement bank.

Day Three

- The settlement bank executes the settlements. In other words, the bank debits the accounts of the short position participants, and credits the accounts of the long position participants.

Day Four

- LCB can release the received funds to the customer/depositor.

The US dollar cheque clearing system enables relatively time-saving and cost effective process. The clearing mechanism used in this system could be expanded to other international currencies.

(d) Operation of the system

An in-house developed software application package is used for processing and clearing of US dollar cheques/drafts.

(e) Settlement bank

The Sampath Bank Ltd, a locally incorporated private LCB, performs as the settlement bank for this system. Each participating LCB should maintain a US dollar (nostro) account with the Sampath Bank and the net positions are settled on T+2.

3.4.5 Card-based schemes

International payments made by using credit or debit cards are cleared via the respective card issuing companies or banks.

The net positions between domestic LCBs under Visa card transactions are settled across the LCBs' accounts in the "national net settlement system" at the Bank of Ceylon, a state-owned LCB in Sri Lanka.

The Colombo branch of the Standard Chartered Bank operates "MasterCard International Services for Intracountry Settlement" as the settlement agent for MasterCard transactions in Sri Lanka. Those net positions are settled across the accounts of LCBs maintained at the Standard Chartered Bank. LCBs pay in the required funds to settlement agent through the SLIPS or the RTGS system.

4. Securities settlement system

The Government of Sri Lanka borrows short-term funds by issuing treasury bills under the provisions of the Local Treasury Bills Ordinance (LTBO), and medium and long-term funds by issuing treasury bonds and rupee loans under the provisions of the Registered Stock and Securities Ordinance (RSSO). These securities had been issued in scrip form (in the form of physical securities). But from January 2004, treasury bills and treasury bonds are issued in scripless form (by an electronic entry in records) to primary dealers and non-dealer bidders.

Companies issue debt securities (promissory notes, debentures, bonds etc) and equity shares (common stock, preferred stock etc) to raise funds from the market. These are issued in scrip form. As most businesses in Sri Lanka are run as family concerns or by related parties, debt financing and

equity financing of most of the companies in the country are accomplished through private placements. Transfer of such securities is also done on private placement basis. Consequently, the organised primary and secondary markets are relatively small in size and trading is concentrated on the government securities and the securities listed on the Colombo Stock Exchange (CSE).

4.1 Trading of securities

4.1.1 Government securities

A treasury bill is a negotiable money market instrument issued at a discounted price by the Government to raise short-term funds. The issuance of treasury bills commenced in 1923 under the LTBO. Treasury bonds, which are long-term transferable debt securities, were introduced in 1997. Treasury bonds are issued with maturities of more than one year (2, 3, 4, 5, 6, 10, 15 and 20 year maturities). Treasury bill and treasury bond markets are open only to domestic investors. Treasury bonds are widely used by fund managers and individual investors in the secondary market. In terms of section 113 of the MLA, the Public Debt Department (PDD) of the CBSL performs as the borrowing agent for the Government as well as the registrar and paying agent for government securities.

The PDD is responsible for:

- issue of tender notices or prospectus;
- receiving and evaluation of bids;
- issue of securities to successful bidders;
- maintenance of records and accounts;
- effecting securities transfers for purchases and sales;
- payment of interest;
- redemption and cancellation on maturity; and
- operation of the central securities depository for government securities.

(a) Primary auction of Government Securities

Auctions are normally conducted weekly for treasury bills and treasury bonds. The participation in the primary market auctions is limited to PDs (Primary Dealers) and to selected institutional investors. In order to be qualified as a PD, an organisation must have a capital not less than LKR 200 million (approximately USD 2 million), meet other criteria laid down by the CBSL and perform in line with regulations issued by the PDD of the CBSL. At the end of June 2004, there were 12 PDs, four of which were subsidiaries of LCBs, three were LCBs and five were non-bank companies. The responsibilities of PDs include, bidding at the primary auctions for more than the specified minimum amount, purchasing of securities on their own account and on behalf of customers and participating in the secondary market by offering two-way quotes. In addition to PDs, the PDD may issue government securities directly to key strategic investors, ie Employees' Provident Fund and the Employees' Trust Fund.

The auction day for primary issue of treasury bills is Wednesday, while treasury bonds are auctioned on a bank business day other than Wednesday. Bids should be in multiples of LKR 1 million and the sum of the bids should be not less than LKR 5 million. Bids are submitted to the PDD in electronic form.

The PDD makes the initial issue/allocation of securities available to the successful bidders. In February 2004, the CBSL implemented the scripless securities settlement system (SSSS), which enabled the issue of government securities in scripless form. The CBSL is in the process of dematerialising the physical securities issued in the past. In case of physical securities, the securities are transferable by endorsement and physical delivery. As for scripless securities, they are transferable by an electronic transfer between securities settlement accounts in LankaSecure.

Treasury bill and treasury bond markets have grown significantly during the last decade. During 2003, the PDD issued treasury bills and treasury bonds amounting to LKR 342.8 billion (USD 3.55 billion) and LKR 214.8 billion (USD 2.23 billion) respectively. The value of total outstanding treasury bills and

treasury bonds at the end of 2003 amounted to LKR 219.3 billion (USD 2.27 billion) and LKR 487.5 billion (USD 5.05 billion) respectively.

(b) *Secondary market for government securities*

Bills and bonds acquired in the primary market are traded by using the Bloomberg electronic trading platform or telephone by PDs³. The “beneficial interest” of government securities are also traded in the debt securities trading system (DEX) at the CSE. Major participants of the secondary market are LCBs, PDs, unit trusts and other public and private funds.

Secondary market for treasury bills and treasury bonds is widely used for outright buy/sell and repo transactions. The PDD has taken a number of measures to promote the government securities market. These measures include implementation of SSS system for government securities, issue of guidelines for the capital of PDs, and providing detailed information on government securities transactions. Treasury bills and treasury bonds are used as eligible securities for the CBSL’s open market operations and for providing intraday liquidity to the participants of the RTGS system.

(c) *The central bank open market operations (OMO) mechanism*

The CBSL participates in the secondary market through its open market operations, which is a means to regulate the market liquidity in the economy. OMO is made through the OMO mechanism operated by CBSL. In 1981, the CBSL opened the discount window (to sell treasury bills in the secondary market) and rediscount window (to purchase treasury bills in the secondary market). These operations increased the liquidity of treasury bill market and paved the way to develop a secondary market. Active OMOs of the CBSL in the late 1980s and the commencement of weekly auction of treasury bills in 1986 increased the attractiveness of treasury bills as an instrument for trading. In the early 1990s, the CBSL introduced repurchase agreements (repos) and reverse repurchase agreements (reverse repos) for secondary market transactions as a measure for implementing its monetary policy. The “CBSLNet” links the CBSL with LCBs and PDs and permits electronic bidding under OMO auctions.

4.1.2 Equity and corporate debt securities listed on CSE

(a) *Organisational aspects*

Share trading in Sri Lanka commenced as far back as 1896 when the Colombo Brokers’ Association, which was later renamed as Colombo Share Brokers’ Association, started trading of shares of plantation companies. The CSE was established in 1985 under the Companies Act, No 17 of 1982. In 1985, the CSE took over the stock market from the Colombo Share Brokers’ Association. The CSE was admitted as the first South Asian member of the World Federation of Exchanges in 1998.

Equity shares and corporate debt listed on the CSE are traded by online screen trading system operated by the CSE. The CSE owns and operates the following two trading systems to ensure an efficient and transparent market:

- The automated trading system (ATS): for trading of equity and corporate debt securities.
- The debt securities trading system (DEX): for trading of “beneficial interest” of government debt securities.

At the end of 2003, 242 companies had been listed on the CSE, representing 20 business sectors with a market capitalisation of over LKR 262 billion (over US \$ 2.7 billion). At the end of 2003, there were 15 stockbrokers licensed by the SEC.

The CSE has a two-tier system, which consists of the Main Board (for large companies) and Second Board (for medium and small companies) for debt and equity securities. Listing requirements for each Board are different. Special emphasis has been placed on reviewing the listing requirements regularly to foster investor confidence.

³ The Association of Primary Dealers signed an agreement with Bloomberg L.P. in October 2003 and implemented “Lanka primary dealer - Bloomberg bond trader” at the end of 2003. It facilitates multi-dealer, pricing display, order routine and dealer conformation of secondary market trades.

The CSE adopts an “order-driven trading platform” for securities trading, including shares and corporate debt securities.

(b) Participation in the system

The automated trading system (ATS)

The ATS is the trading system for equity and corporate debt securities. Only stockbrokers licensed by the SEC can become the members of the CSE and are eligible to function as direct participant in the ATS. Only direct participants are given access to the ATS for trading purposes. At the end of 2003, there were 15 direct participants.

The debt securities trading system (DEX)

The DEX is the trading system for “beneficial interest” of government debt securities. Stockbrokers and trading members are eligible to trade in the DEX. Trading members who are also licensed by the SEC, should have adequate capacity in dealing and trading of debt securities and a capital not less than LKR 25 million (approximately USD 0.25 million). Trading on the DEX was started in March 2004.

The Central Depository System (CDS)

Corporate debt and equities listed on the CSE which are issued in scrip form by the respective companies, are subsequently lodged by the investors in CDS in a dematerialised form. Lodging such securities in CDS is a prerequisite for trading on the CSE. The CDS facilitates clearing and settlement of transactions taken place through the CSE. Securities positions pertaining to all trades completed on the CSE are recorded in the CDS and respective securities accounts are updated at real time with the exception of those traded in DEX. Besides the stockbrokers and trading members, the CDS has a third category of participants, ie “Indirect Participant”, a status given only to LCBs. They act as custodian banks for account holders in the CDS. At the end of 2003, there were 17 indirect participants in the CDS. All three categories of participants in CDS are given equal access to the services offered by the CDS.

Investors maintain securities accounts in the CDS through their respective participants.

Every investor account is identified in the CDS by a unique account number and all correspondence and dealings including trading and depository activities are done by the investor using this number. These accounts are operated through participants. Accordingly, individual and corporate customers, other than participants of the CDS are not allowed to issue instructions directly to the CDS. It is possible for a customer to maintain multiple accounts in the CDS through different participants and transfer securities across those accounts.

(c) Operation of the system

The CSE is open for trading from 9.30 am to 1.30 pm on all business days as determined by the CSE. The trading on a business day is divided into the following sessions;

- pre-open session (9:00 am - 9:30 am);
- open auction (9:30 am); and
- regular trading session (9.30 am - 1.30 pm) for ATS;
- regular trading session (9.30 am - 12.30 pm) for DEX.

The ATS/DEX accept orders during pre-open session (9.00 am to 9.30 am). Before starting the open auction at 9.30 am orders can be amended or cancelled. During the pre-open session, no trade takes place and orders submitted during the period are queued in the ATS/DEX. Those queued orders are forwarded for the execution at open auction time.

When open auction starts at 9.30 am, the system temporarily closes the order book and starts matching orders queued in the system. During this process, the system matches the entered sell/buy orders according to the prescribed rules.

Regular trading starts after the open auction period. During this period new orders are continuously matched to existing orders in the order book. If an order cannot be executed, it is queued in the order book according to time in force (TIF) prescribed by the broker, ie day orders to five day orders. DEX permits day orders only.

At the end of each trading day, the CDS provides “bought notes/sold notes” to each participant, which contain details of all the transactions of his customers conducted on the trading system of the CSE.

4.1.3 Central bank securities

The CBSL issues its own securities for conducting open market operations in order to absorb excess liquidity from the market. Central bank securities were first issued in 1956 with maturities of up to two years. In 2003, the CBSL issued central bank securities worth of LKR 5.1 billion for a shorter period of three months without a coupon interest rate. Central bank securities are traded in the secondary market but are not accepted as an underlying security in the CBSL reverse repos. Any central bank securities purchased by the CBSL should be cancelled. Since the implementation of LankaSecure system, issuing of central bank securities has to be done in scripless form.

4.1.4 Non-listed corporate debt and equity shares

Majority of trades on non-listed corporate debts and equity shares is agreed bilaterally outside the CSE and considered as over-the-counter (OTC) trades. These trades are also settled bilaterally and are not subject to the clearing and settlement procedures of the CSE.

4.2 Clearing

There is no independent clearing house in Sri Lanka to exclusively handle securities clearing. Post trading and pre-settlement clearing activities that are relevant to securities settlement are described under section 4.3.

4.3 Settlement

4.3.1 Government securities

(a) Functions of the LankaSecure system

Government securities and central bank securities are settled through LankaSecure system. LankaSecure is operated by the CBSL as an integral part of LankaSettle along with the RTGS system. LankaSecure is composed of the scripless securities settlement system (SSSS) and the scripless securities depository system (SSDS). The LankaSecure system performs the following functions:

- issuing of government securities and central bank securities in electronic (scripless) form;
- maintenance of a central record of ownership and of other interests in scripless form;
- payment of interest and maturity proceeds to the settlement accounts of participants in the RTGS system;
- settlement of above securities trades on a delivery versus payment (DVP) basis, whereby transfer of securities and settlement of funds only occur if both securities and funds are available in the respective accounts of participants;
- the settlement of government securities in LankaSecure takes place on gross basis in real time for both securities leg and fund leg. Hence the DVP mechanism is the model 1 DVP;
- transferring the above securities between accounts on a Delivery Free (DF)/Receive Free (RF) basis; and
- providing the securities account facilities to allow segregation of holdings between own account and customers' accounts.

The main components of LankaSecure are:

- the central securities system (CSS), which facilitates the LankaSecure functions;
- SWIFT FIN messaging service, which provides the communication infrastructure for exchanging securities instructions;

- a browser Interface facility to provide the participants with enquiry and queue management facilities;
- the “CBSLNet” wide area network for connecting the browser interfaces to the LankaSecure; and
- an interface to the RTGS system for the settlement of the funds leg of securities transactions.

The role of the CBSL in respect of LankaSecure and scripless securities includes:

- acting as an agent of the Government of Sri Lanka to administer the issue of new securities, conduct of the primary auctions and the payment of interest and maturity proceeds on government securities;
- issuing central bank’s own securities in scripless form;
- acting as a counterparty in the secondary market trading in government securities, particularly in its conduct of open market operations;
- providing intraday liquidity facility (ILF) to eligible participants;
- operating the LankaSecure system and providing depository facilities for scripless securities; and
- regulating the market for government securities and its participants, including the supervision of primary dealers and dealer direct participants and the monitoring of LankaSecure transactions.

Treasury bills, treasury bonds and central bank securities issued in scripless form or converted to scripless form can be held in LankaSecure.

In LankaSecure, trades of securities are made by units, which are uniquely identified by the International Securities Identification Number (ISIN). Minimum marketable parcel in LankaSecure is one unit, which has a face value of one Sri Lanka rupee (USD 0.01).

(b) Settlement procedure of the LankaSecure system

The settlement procedure of LankaSecure system is as follows:

1. Seller submits the DVP (delivery versus payment) instruction.
2. Buyer submits the RVP (receive versus payment) instruction.
3. Inputs are validated and matched.
4. Transaction is queued for settlement until the settlement date.
5. On the settlement day, the system checks the availability of securities.
6. Securities are earmarked.
7. Settlement request is sent to the RTGS system.
8. Check for the availability of funds.
9. Funds are transferred in the RTGS system.
10. Positive response is sent to LankaSecure.
11. Securities are transferred in LankaSecure.
12. Customer statements are issued.

Securities instructions are queued in LankaSecure if the securities specified are not available in the specified accounts. Overdraft in securities account is not allowed in any circumstances.

(c) Participation in the LankaSecure system

Participants in the LankaSecure system are the same as the participants of the RTGS system. Access criteria explained in Section 3.2.2. are also applied to LankaSecure system. The CBSL ensures that

any addition, deletion, or modification of participant details in the RTGS system is updated in the LankaSecure system.

(d) *Type of transactions handled by the LankaSecure system*

The LankaSecure system handles the following transactions:

- DVP transactions between two participants or two customers of different participants and between a participant and a customer of another participant for outright sale/outright purchase, repo/reverse repo and repo reversal/reverse repo reversal of treasury bills and treasury bonds.
- DVP transactions between the CBSL and participants for outright sale/outright purchase, repo/reverse repo and repo reversal/reverse repo reversal of treasury bills and treasury bonds. These transactions are matched outside the SSS system and entered into the SSS system using the “matched trade feed” option.
- ILF initiation and ILF repayment.
- Repositioning of securities among different customers of the same participant, a customer of a particular participant and his own account and different sub accounts of a same participant, which includes the ILF sub account.
- Delivery Free transactions among participants, which do not include a payment leg.
- DVP Model 2 transactions with the CBSL, where the outward payment for interest and redemption money for treasury bills and treasury bonds and the inward payments for purchases at the primary auction are netted, while the securities are transacted in gross basis.
- Direct debit transactions by the CBSL on request of a participant to resolve an operational issue or debit a securities account of a participant for any other purpose authorised to the CBSL as the regulator.

(e) *Operation of the LankaSecure system*

The LankaSecure system is operated by the PDD of the CBSL and it opens for business from 8.00 am to 4.00 pm from Monday to Friday on bank working days.

Securities transactions should be submitted to the LankaSecure system by two participants. However, there is an exception in the case of transactions submitted by the CBSL and repositioning messages. The system matches the DVP and RVP as well as DF and RF instructions submitted by the two parties, by matching the buyer’s BIC in the DVP/DF message and the seller’s BIC in the RVP/RF message. In addition, the ISIN, the value date, the number of units of securities, and the price quoted in both instructions should be matched. In the case of repo and reverse repo transactions, the date of reversal and the buy back value also have to be matched in addition to the above information.

It is immaterial whether the buyer or the seller inputs the instruction first. Whenever a DVP or RVP instruction is received by the LankaSecure system, it is held in a queue waiting for the matching information to be received from the counterparty. The submitter of an instruction can cancel an unmatched transaction unilaterally. But once a transaction is matched, both parties have to submit cancellation requests for the cancellation prior to the settlement. The LankaSecure system accepts the forward dated transactions up to 10 calendar days.

When a pair of DVP/RVP instructions is matched and provided that value date is the current date, the LankaSecure system makes a payment request and submits it to the RTGS system automatically, while the securities for the settlement with those instructions are earmarked in the LankaSecure system. A payment request is not submitted to the RTGS system if sufficient securities are not available in the securities account. If the RTGS settlement account balance is not sufficient to settle the payment leg, it is held in a queue in the RTGS system.

When the payment leg is settled in the RTGS system, it is immediately notified to the LankaSecure system and securities are settled across securities accounts to complete the transaction eliminating credit risk. The LankaSecure system has queuing facility and the Gridlock Resolution function. The Gridlock Resolution function is automatically executed in every 60 minutes, which minimise the liquidity risk.

Secondary market transactions on existing scrip government securities are settled by making a payment through cheques, SLIPS or the RTGS system and physically delivering the securities that have been duly endorsed in favour of the buyer to transfer the ownership of the securities.

4.3.2 Equity and corporate debt traded on the CSE

(a) The CDS and the settlement bank

Once a securities transaction is made on the CSE, the settlement for such transaction takes place as follows:

- All the transactions are sent from the trading system on CSE to the CDS. For the equity and debt securities traded at ATS, securities leg of the transaction is settled in the CDS on a gross basis in a real time manner.
- As for the fund leg of equity transactions, the CDS derives the net clearing balances (fund settlement amongst the participants of the CDS), which takes place in net basis on T+6, via the settlement bank of the CDS. Sampath Bank Ltd is the present settlement bank of the CDS.
- The CSE has a two tiered fund settlement cycle for equity; the buyers settle on T+5 with the broker and the seller receives the sales proceeds from his broker on T+6.
- In respect of corporate debt securities there is a single tier settlement cycle, which is T+1. The inter-participant settlement for such securities also takes place on T+1.
- There is no DVP mechanism in the settlement of equity shares and corporate debt securities traded on the CSE. The time lag between the settlement of fund leg and securities leg is 6 days for equity shares and one day for corporate debt.
- The CDS settles the trades done at the DEX on DVP model 2 basis.
- Securities settlement of all the trades done at DEX is executed after the net positions of the fund are settled.

With regard to equity trades, the CDS produces a preliminary settlement statement to the settlement bank and to each participant at the end of each trading day indicating the net settlement liability of each participant. The CDS also produces a final settlement statement, which contains any adjustment to the preliminary settlement statement.

All transactions on equity submitted through custodian banks should be either confirmed or rejected by the relevant custodian bank by 9.00 am on T+4. If a transaction is rejected on T+4 by the custodian bank the settlement liability in respect of such rejected custodian trade shall vest with the respective stockbrokers who carry out the trade. The settlement liability of all trades affirmed by custodian bank is the sole responsibility of the custodian bank. There is no trade affirmation facility for corporate debt securities transactions.

If a custodian bank has a net payment obligation then it pays dues to the Sampath Bank (settlement bank) through the RTGS system. If the custodian bank has net credit balance then the Sampath Bank makes the payment to the relevant custodian bank through the RTGS system.

(b) Clearing and settlement process of a transaction on the CDS (See Figure 4)

1. A customer sends sell/buy orders to the participant. Each customer should have a CDS account through a participant, which can be a stockbroker, or a custodian bank or an exclusive trading member (customers of exclusive trading members of DEX can not trade in the ATS). If an investor has his CDS account through a custodian bank, he can place his order to the ATS/DEX through any of the stockbrokers or trading members of DEX. If an investor maintains a CDS account through a stockbroker/trading member, he should place the order at the ATS/DEX only through the stockbroker/trading member.
2. Custodian banks can place their own orders and their customers' orders to the ATS/DEX through a stockbroker/trading member of DEX.
3. Stockbrokers/trading members of DEX place sell/buy orders to the ATS/DEX using a computer-based terminal at their offices. The orders are matched and processed by ATS/DEX according to the pre-defined trading rules.

4. When a trade is matched at the ATS, the relevant information is immediately updated at the CDS. For the trades done at ATS, the securities leg of the transaction is settled at the CDS on gross basis in real time manner. For the trades done at DEX, securities are settled on gross basis after receiving the payment on net basis at a designated time. As the legal title of all the securities lodged in the CDS belongs to the CDS, the "beneficial interest" of the securities is transferred from the seller to the buyer.
5. The CDS calculates the amounts payable and receivable by/to each participant for the transactions carried out by their account holders. The net clearing obligation with regard to equity trades of each participant is informed to them by the CDS on a daily basis.
6. On the settlement day, the net settlement obligations of each participant is settled via the settlement bank. Stockbrokers maintain accounts with the settlement bank. Settlements pertaining to stockbrokers take place through these accounts.
7. Custodian banks pay/receive their settlements from the settlement bank through the RTGS system.
8. Each participant pays/receives funds to/from their customers.

(c) *Settlement cycle*

The CSE has two different fund settlement arrangements for equity transactions. Buyer's obligations should be settled on T+5 and sellers receive their funds on T+6. Inter-participant settlement occurs on T+6.

For all corporate debt securities transactions, all dues are calculated and paid on T+1.

(d) *Finality of a transaction*

Equity and corporate debt securities traded in the ATS are debited and credited to/from the buyers/sellers securities accounts at the CDS on line and real time. However, the fund settlement in respect of equity transaction takes place only on T+5 for buyers and T+6 for sellers, subject to any cancellations or custodian rejections. The inter-participant settlement takes place on T+6 via the settlement bank. Fund settlement regarding corporate debt securities takes place on T+1 for all parties.

A transaction is finalised once the fund settlement is completed.

4.3.3 Settlement of trades of non-listed corporate debt and equity shares

The transactions and settlement of non-listed corporate debt and equity shares are made bilaterally between the buyer and seller on OTC basis by transferring physically securities.

4.4 The use of securities by the central bank or by commercial banks and PDs

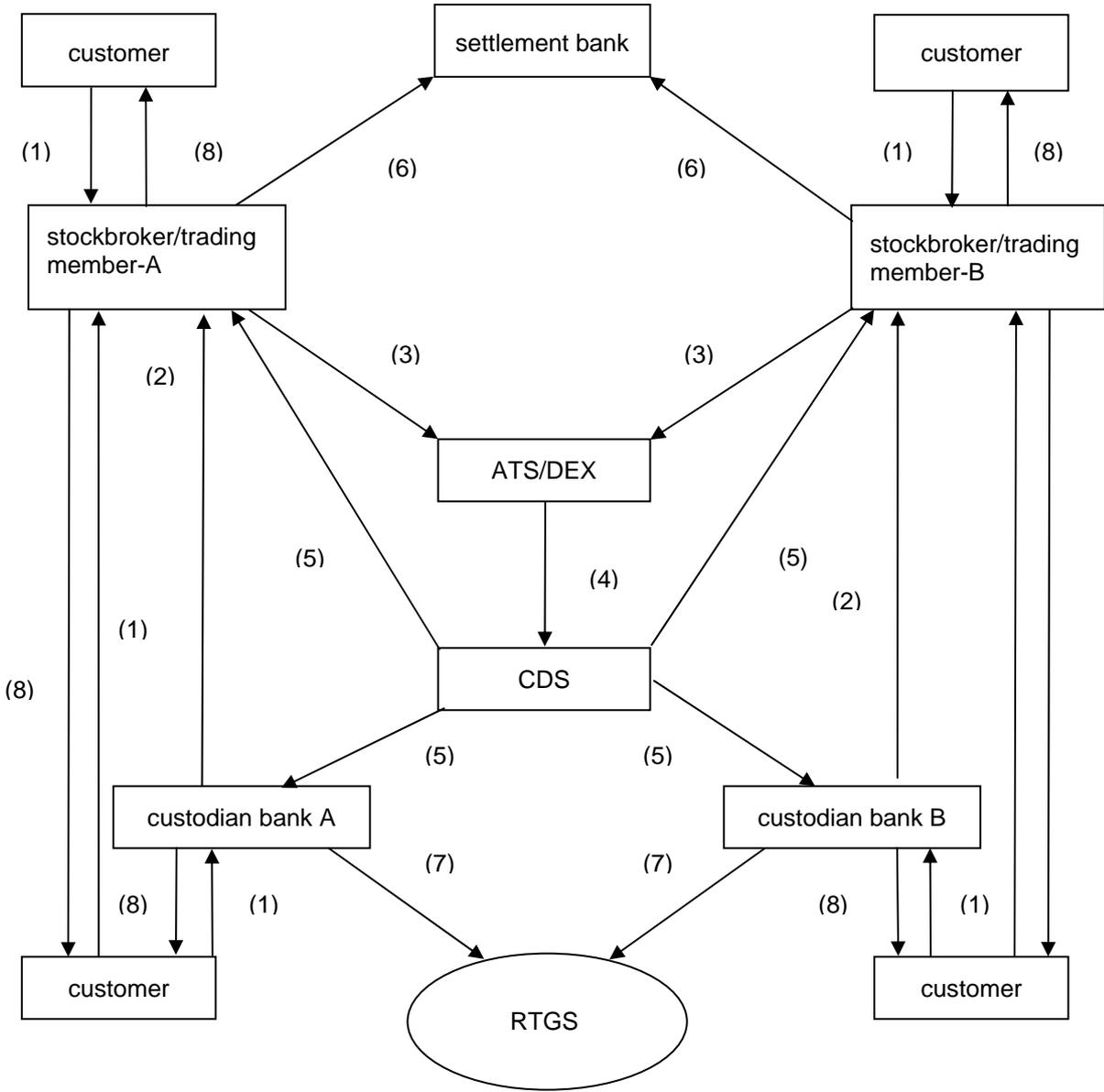
The CBSL is an important player in the securities market. It issues and manages Government securities, issues its own securities and uses Government securities for its open market operations.

In the OMO repo/reverse repo daily auctions, the CBSL decides the quantity of government securities sold/purchased with a reversing agreement and the interest rates are allowed to be decided by market forces.

The CBSL offers "OMO standing facilities" to the banks. Through these facilities, the banks can manage the liquidity position by sell or purchase the eligible securities. Under these facilities, the CBSL does not limit the volume of securities either sold or purchased. But, in this case, the interest rates are fixed by the CBSL at bounds of the interest rate corridor, thereby encouraging banks to manage their liquidity more cautiously and avoid resorting to standing facilities regularly. Standing facilities serve as an instrument for the banks to borrow or lend overnight funds using the Government securities as collaterals.

Figure 4

Clearing and settlement process of a transaction on the CSE



Appendix 1

Timetable of the business day of LankaSettle system (as at 1 September 2004)

Time	Event	Activities and available transactions
7.30 am	System initialisation	Server and net work startup
7.30 am to 8.00 am	Pre-start activities	Automated draw down of ILF, DvP ₂ batch settlement of primary auctions, interest and maturities, settlement of central bank repos.
8.00 am	LankaSettle/LankaSecure starts	System opens for business.
8.30 am	LankaClear (main clearing and SLIPS)	Multilateral net settlement batch (MNSB) run.
9.30 am	Central bank repo/reverse repo window opens	
12.00 noon	Repayment of previous day's reverse repos of the CBSL	All reverse repos of the CBSL maturing on the day to be settled by this deadline.
1.00 pm	Closing of modified net batch settlement	Modified net batch settlement of primary auctions, interest and maturities proceeds closes.
2.15 pm	LankaClear (settlement clearing and rupee draft clearing)	Multilateral net settlement batch (MNSB) run.
2.45 pm	Adjustment clearing and local clearing settlement	Multilateral net settlement batch (MNSB) run.
3.00 pm	Primary cutoff	Closed to new trades for T+0 settlement. Closed to new payments in favour of third parties, except for bank to bank. (MT2XX....).
3.00 pm to 3.15 pm	ILF repayment	ILF repayment.
3.30 pm	Central bank reverse repo/repo window closes	
4.00 pm	Final cutoff. Closes for business	No further inputs accepted, queue/ settlement processing will cease and any transaction still in queues will be rejected.
4.00 pm to 5.00 pm	End of day processing	Generating reports, archiving, etc.
5.00 pm	System closure	System closure processes, eg archiving, database maintenance, etc.

Statistical tables

Table 1
Basic statistical data

	1999	2000	2001	2002	2003
Population (thousands) ¹	18,208	18,467	18,732	19,007	19,252 ²
GDP (rupees billions)	1,106	1,258	1,407	1,583	1,760 ²
GDP per capita (rupees)	60,741	68,102	75,133	83,267	91,434 ²
Exchange rate (rupees/USD):					
<i>year end</i>	<i>72.1150</i>	<i>80.0598</i>	<i>93.1587</i>	<i>96.7250</i>	<i>96.7382</i>
<i>average</i>	<i>70.3922</i>	<i>75.7772</i>	<i>89.3628</i>	<i>95.6618</i>	<i>96.5209</i>

¹ Mid year population. ² Provisional.

Source: Central Bank of Sri Lanka.

Table 2
Settlement media used by non-banks

End of year, in billions of rupees

	1999	2000	2001	2002	2003
Notes and coin ¹	58.5	62.6	65.5	75.3	85.6
Transferable deposits ²	50.1	55.8	56.7	64.1	76.0
Narrow money supply (M1) ³	108.6	118.4	122.2	139.4	161.6
<i>Memorandum items:</i>					
Broad money supply (M2) ⁴	358.1	404.7	450.7	510.4	580.7
Broad money supply (M2b) ⁵	428.3	483.4	549.1	622.5	717.9
Transferable balances held in foreign currencies	nav	nav	nav	nav	nav
Outstanding value on e-money schemes	nap	nap	nap	nap	nap
<i>of which:</i>					
<i>on card-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>on network-based products</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

¹ Currency held by public. ² Demand deposits held by public. ³ M1 is defined as currency held by public plus demand deposits held by public with commercial banks. ⁴ M2 is defined as M1 plus time and savings deposits of the public held with commercial banks. ⁵ M2b is defined as M2 plus time and savings deposits of foreign currency banking units (FCBUs) of commercial banks.

Source: Central Bank of Sri Lanka.

Table 3

Settlement media used by banks

End of year, in billions of rupees

	1999	2000	2001	2002	2003
Transferable balances held at central bank	30.2	31.8	36.0	38.1	42.6
Transferable balances held at central bank (last reserve week average)	28.7	nav	34.4	39.7	47.1
<i>of which:</i>					
<i>required reserves (statutory)</i> ¹	28.6	32.5	34.3	39.7	47.0
<i>free reserves</i> ²	0.1	nav	0.1	neg	0.1
Transferable balances held at other banks	14.6	33.1	14.6	16.2	15.3
<i>Memorandum items:</i>					
Institutions' borrowing from central bank					
MLCF ³	0.8	0.5	0.2	neg	neg
Reverse repo	0.5	30.4	1.5	0	0

¹ Required reserves data are the daily average of the cumulative reserves kept by LCBs for the last reserve week of each year. With effect from 3 April 2003 reserves are computed weekly, based on the average deposit liabilities and vault cash during the week ending Tuesday of the previous reserve week. ² Free reserves refer to the daily average of the difference between cumulative required statutory reserves for the reserve week and cumulative balances of the LCBs for the week. ³ Medium and long term and short term credit to LCBs.

Source: Central Bank of Sri Lanka.

Table 4

Banknotes and coin

End of year, in billions of rupees

	1999	2000	2001	2002	2003
Total banknotes issued ¹	67.642	70.428	73.465	85.024	95.282
<i>Of which:</i>					
<i>LKR 1,000</i>	45.914	48.289	51.628	61.683	70.765
<i>LKR 500</i>	10.401	10.187	9.868	10.942	11.274
<i>LKR 200</i>	2.055	2.432	2.005	1.481	0.998
<i>LKR 100</i>	5.698	5.578	6.086	6.796	7.728
<i>LKR 50</i>	1.652	1.703	1.803	1.922	2.061
<i>LKR 20</i>	0.900	1.096	1.068	1.166	1.233
<i>LKR 10</i>	0.955	1.073	0.938	0.966	1.154
Total coin issued ²	2.568	2.888	3.096	3.283	3.503
<i>Of which:</i>					
<i>LKR 10</i>	0.180	0.326	0.393	0.478	0.475
<i>LKR 5</i>	1.224	1.329	1.409	1.464	1.560
<i>LKR 2</i>	0.460	0.507	0.542	0.571	0.447
<i>LKR 1</i>	0.313	0.321	0.342	0.353	0.349
<i>cts 50</i>	0.148	0.154	0.155	0.159	0.163
<i>cts 25</i>	0.109	0.109	0.111	0.112	0.114
<i>cts 10</i>	0.038	0.039	0.039	0.039	0.039
<i>cts 05</i>	0.023	0.023	0.023	0.023	0.023
<i>cts 02</i>	0.006	0.006	0.006	0.006	0.006
<i>ct 01</i>	0.004	0.004	0.004	0.004	0.004
Total banknotes and coin issued	70.210	73.316	76.561	88.308	98.785
Banknotes and coin held by credit institutions ³	11.729	10.669	11.025	13.016	13.184
Banknotes and coin in circulation outside credit institutions ⁴	58.481	62.647	65.536	75.292	85.601

¹ Currency notes of LKR 5, 2, 1, cts 50, 25, 10 are also included. The value of these notes remained unchanged at LKR 37 million, 27 million, 4 million, 0.4 million, 0.5 million and 0.5 million, respectively from 1974. ² Includes coins of the denomination of LKR 100, 500, 1,000, 5,000 and other coins. As at end 2003 the value of LKR 100, 500, 1000 and 5000 coins stands at LKR 2.0 million, 19.8 million, 35.1 million and 20.5 million respectively. The value of other coins, as at end 2003 stands at LKR 246.5 million. ³ Refers to bank notes and coins held by LCBs. ⁴ Refers to bank notes and coins in circulation outside LCBs.

Source: Central Bank of Sri Lanka.

Table 5
Institutional framework

End of 2003

Categories	Number of institutions	Number of branches	Number of accounts (thousands)	Number of internet-linked accounts	Value of accounts (USD billions)
Central bank	1	4 ¹	nav	nav	nav
Credit institutions	37	1,689	nav	nav	nav
Licensed commercial banks <i>of which:</i>	22	1,319	nav	nav	nav
<i>domestic</i>	11	1,285	nav	nav	nav
<i>foreign</i>	11	34	nav	nav	nav
Licensed specialised banks ²	15	370	nav	nav	nav
Postal institutions	1	4,680 ³	nav	nav	nav
Total <i>of which:</i>	39	6,373	nav	nav	nav
<i>virtual institutions</i>	0	0	nav	nav	nav

¹ There are four branches of central bank including the head office. Only the head office provides cashless payment services. ² Hold deposits for customers but do not provide cashless payment services. ³ Including post offices, sub post offices and agency post offices.

Source: Central Bank of Sri Lanka.

Table 6
Payment card functions and accepting devices

End of year

	1999 ¹	2000 ¹	2001	2002	2003
Cash function					
Cards with a cash function (thousands)	nav	nav	nav	nav	nav
Number of networks	nav	nav	14	14	15
Number of ATMs with a cash dispensing function	nav	nav	495	636	721
Volume of transactions (millions)	nav	nav	14.1	25.1	33.5
Value of transactions (rupees billions):	nav	nav	43.8	71.6	119.4
Number of ATMs with a giro transfer function	nav	nav	nav	nav	nav
Volume of transactions (millions)	nav	nav	nav	nav	nav
Value of transactions (rupees billions)	nav	nav	nav	nav	nav
Debit function					
Cards with a debit function (thousands)	nav	nav	794.8	1,058.9	1,383.1
<i>of which: retailer cards</i>	nav	nav	0	0	0
Number of networks	nav	nav	3	4	5
Number of terminals	nav	nav	2,669	3,396	3,913
Volume of transactions (millions)	nav	nav	0.09	0.17	0.24
<i>of which: transactions with retailer cards</i>	nav	nav	0	0	0
Value of transactions (rupees billions)	nav	nav	0.3	0.6	0.7
<i>of which: transactions with retailer cards</i>	nav	nav	0	0	0

Table 6 (cont)

Payment card functions and accepting devices

End of year

	1999 ¹	2000 ¹	2001	2002	2003
Credit function					
Cards with a credit function (thousands)	nav	nav	258.4	326.7	406.1
<i>of which: retailer cards</i>	<i>nav</i>	<i>nav</i>	8.3	10.2	9.4
Number of networks	nav	nav	10	9	10
Number of terminals	nav	nav	3,664	4,256	4,794
Volume of transactions (millions)	nav	nav	5.4	6.3	7.7
<i>of which: transactions with retailer cards</i>	<i>nav</i>	<i>nav</i>	0.2	0.1	0.1
Value of transactions (rupees billions)	nav	nav	14.9	18.2	23.2
<i>of which: transactions with retailer cards</i>	<i>nav</i>	<i>nav</i>	0.7	0.6	0.9
Electronic money function					
Cards with an e-money function (thousands)	nap	nap	nap	nap	nap
Number of accepting terminals	nap	nap	nap	nap	nap
Number of networks	nap	nap	nap	nap	nap
Number of purchase transactions (millions)	nap	nap	nap	nap	nap
Value of purchase transactions (rupees billions)	nap	nap	nap	nap	nap
Number of loading transactions (millions)	nap	nap	nap	nap	nap
Number of loading terminals	nap	nap	nap	nap	nap
Value of money loaded (rupees billions)	nap	nap	nap	nap	nap
Float (rupees billions)	nap	nap	nap	nap	nap
Delayed debit cards (charge cards)					
Cards with a delayed debit function (thousands)	nap	nap	nap	nap	nap
Number of terminals	nap	nap	nap	nap	nap
Volume of transactions (millions)	nap	nap	nap	nap	nap
Value of transactions (rupees billions)	nap	nap	nap	nap	nap
<i>Memorandum item:</i>					
Total number of cards in circulation (thousands)	nap	nap	nap	nap	nap
<i>of which:</i>					
<i>cards with a combined debit, cash and e-money function</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>
<i>cards with a cheque guarantee function</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>

¹ Collection of statistics commenced since 2001.

Source: Central Bank of Sri Lanka.

Table 7

**Payment instructions handled by selected interbank
funds transfer systems: volume of transactions**

In millions

	1999	2000	2001	2002	2003
CBSL current accounts settlement system	nav	nav	0.13	0.15	0.10 ¹
Concentration ratio (in %)	nav	nav	nav	nav	nav
The RTGS system	nap	nap	nap	nap	0.04 ²
Concentration ratio (in %)	nap	nap	nap	nap	37.3
LankaClear cheque clearing system ³	32.66	34.56	35.31	35.49	36.48
Concentration ratio (in %)	86.6	86.1	85.7	85.4	84.9
Sri Lanka interbank payments system	0.83	1.08	1.26	1.61	2.02
Concentration ratio (in %)	nav	nav	nav	73.7	91.3
Local cheque clearing	1.36	1.38	1.34	1.36	1.34
Concentration ratio (in %)	nav	nav	nav	86.1	85.6
US dollar cheque clearing system ⁴	nap	nap	nap	0.02	0.09
Concentration ratio (in %)	nap	nap	nap	77.2	76.8

¹ Refers to the period of January to 5 September 2003. ² Refers to RTGS transactions (excluding transfers of CBSL Current account balances to RTGS settlement accounts on 08.09.2003) during the period of 8 September to 31 December 2003. ³ Figures of main cheque clearing. ⁴ US dollar cheque clearing system commenced operations in October 2002.

Source: Central Bank of Sri Lanka. LankaClear (Pvt) Ltd.

Table 8

**Payment instructions handled by selected interbank
funds transfer systems: value of transactions**

In billions of rupees

	1999	2000	2001	2002	2003
CBSL Current accounts settlement system	nav	nav	16,703.2	19,475.4	12,749.8 ¹
Concentration ratio (in %)	nav	nav	nav	nav	nav
The RTGS system	nap	nap	nap	nap	4,210.0 ²
Concentration ratio (in %)	nap	nap	nap	nap	47.6 ³
LankaClear cheque clearing system ³	2,034.6	2,225.2	2,371.9	2,444.9	2,676.6
Concentration ratio (in %)	nav	nav	nav	76.0	76.0
Sri Lanka interbank payments system	1,042.6	1,245.8	1,667.1	1,335.7	979.3
Concentration ratio (in %)	nav	nav	nav	nav	nav
Local cheque clearing	32.4	36.8	39.2	46.6	50.6
Concentration ratio (in %)	nav	nav	nav	87.8	86.6
US dollar cheque clearing system ⁴	nap	nap	nap	1.9	10.7
Concentration ratio (in %)	nap	nap	nap	nav	nav

¹ Refers to the period of January to 5 September 2003. ² Refers to RTGS transactions (excluding transfers of CBSL Current account balances to RTGS settlement accounts on 08.09.2003) during the period of 8 September to 31 December 2003. ³ Figures of main cheque clearing. ⁴ US dollar cheque clearing system commenced operations in October 2002.

Source: Central Bank of Sri Lanka. LankaClear (Pvt) Ltd.

Table 9

**Indicators of use of various cashless payment
instruments: volume of transactions**

In millions

	1999	2000	2001	2002	2003
Instruments					
Cheques ¹	32.7	34.6	35.3	35.5	36.5
<i>of which: face-to-face</i>	32.7	34.6	35.3	35.5	36.5
Payments by debit card	nav	nav	0.1	0.2	0.2
Payments by credit card	nav	nav	5.4	6.3	7.7
Credit transfers ²	nav	nav	1.3	1.6	2.0
<i>of which: face-to-face</i>	nav	nav	1.3	1.6	2.0
Direct debits ³	nav	nav	0.002	0.002	0.002
<i>of which: face-to-face</i>	nav	nav	0.002	0.002	0.002
Card-based electronic money	nap	nap	nap	nap	nap
Network-based electronic money	nap	nap	nap	nap	nap
Total	32.7	34.6	42.1	43.6	46.4

¹ Cheques presented by LCBs at main cheque clearing of LCPL. ² Credit transfers under Sri Lanka interbank payment system. ³ Direct debits under Sri Lanka interbank payment system.

Source: Central Bank of Sri Lanka. LankaClear (Pvt) Ltd.

Table 10

**Indicators of use of various cashless
payment instruments: value of transactions**

In billions of rupees

	1999	2000	2001	2002	2003
Instruments					
Cheques ¹	2,034.6	2,225.2	2,371.9	2,444.9	2,676.6
of which: face-to-face	2,034.6	2,225.2	2,371.9	2,444.9	2,676.6
Payments by debit card	nav	nav	0.3	0.6	0.7
Payments by credit card	nav	nav	14.9	18.2	23.2
Credit transfers ²	nav	nav	1,667.1	1,335.7	979.3
of which: face-to-face	nav	nav	1,667.1	1,335.7	979.3
Direct debits ³	nav	nav	0.1	0.1	0.1
of which: face-to-face	nav	nav	0.1	0.1	0.1
Card-based electronic money	nap	nap	nap	nap	nap
Network-based electronic money	nap	nap	nap	nap	nap
Total	2,034.6	2,225.2	4,054.3	3,799.5	3,679.9

¹ Cheques presented by LCBs at main cheque clearing of LCPL. ² Credit transfers under Sri Lanka interbank payment system. ³ Direct debits under Sri Lanka interbank payment system.

Source: Central Bank of Sri Lanka. LankaClear (Pvt) Ltd.

Table 11a

**Instructions handled by trading platforms, clearing houses
and securities settlement systems: volume of transactions**

In millions

	1999	2000	2001	2002	2003
Trading platforms¹					
Automated trading system at the CSE					
(a) Equity shares	0.2	0.2	0.2	0.3	0.5
(b) Corporate debt (debentures)	neg	neg	neg	neg	neg
Clearing houses	nap	nap	nap	nap	nap
Securities settlement systems²					
Central Depository System	0.2	0.2	0.2	0.3	0.5

¹ Lanka primary dealer - Bloomberg bond trader was implemented towards the end of 2003. Trading volume in 2003 was negligible. Debt securities trading system (DEX) was launched in 2004. ² LankaSecure system was implemented in February 2004.

Source: Colombo Stock Exchange.

Table 11b

**Instructions handled by trading platforms, clearing houses
and securities settlement systems: value of transactions**

In billions of rupees

	1999	2000	2001	2002	2003
Trading platforms¹					
Automated trading system at the CSE					
(a) Equity shares	14.3	10.6	13.9	30.2	73.7
(b) Corporate debt (debentures)	0.6	0.4	0.2	0.3	0.2
Clearing houses	nap	nap	nap	nap	nap
Securities settlement systems²					
Central Depository System	14.8	11.1	14.1	30.5	73.8

¹ Lanka primary dealer - Bloomberg bond trader was implemented towards the end of 2003. Trading value in 2003 was negligible. Debt securities trading system (DEX) was launched in 2004. ² LankaSecure system was implemented in February 2004.

Source: Colombo Stock Exchange.

Table 11c

**Number of participants in trading platforms,
clearing houses and securities settlement systems**

	1999	2000	2001	2002	2003
Trading systems¹					
Automated trading system at CSE	15	15	15	15	15
Lanka primary dealer - Bloomberg bond trader	nap	nap	nap	nap	11
Clearing systems	nap	nap	nap	nap	nap
Securities settlement systems²					
Central Depository System	30	31	32	32	32

¹ Lanka primary dealer - Bloomberg bond trader was implemented towards the end of 2003. Debt securities trading system (DEX) was launched in 2004. ² LankaSecure system was implemented in February 2004.

Source: Colombo Stock Exchange.

Table 11d
Outstanding securities
End of year

	1999	2000	2001	2002	2003
Value of securities issued (rupees billions)					
(a) Government securities	229.9	339.1	400.2	558.1	706.8
<i>of which:</i>					
<i>treasury bills</i>	125.0	135.0	171.0	211.0	219.3
<i>treasury bonds</i>	104.9	204.1	229.2	347.1	487.5
(b) Equity shares	112.8	88.8	124.0	162.6	262.8
(c) Corporate debt	4.5	5.8	7.3	10.3	9.6
Volume of securities issued (billions)					
(a) Government securities	nav	nav	nav	nav	nav
(b) Equity shares	1.8	2.3	2.6	3.1	7.9
(c) Corporate debt	0.05	0.06	0.07	0.10	0.09
Value of securities registered (rupees billions)	51.3	40.4	63.2	85.9	136.1
(a) Equity shares	49.9	38.5	60.8	82.9	132.4
(b) Corporate debt	1.4	1.9	2.4	3.0	3.7
Volume of securities registered (billions)	1.9	2.2	2.3	2.8	3.5
(a) Equity shares	1.89	2.18	2.27	2.76	3.48
(b) Corporate debt	0.01	0.02	0.03	0.04	0.02

Source: Colombo Stock Exchange.

Table 11e
Netting ratio in clearing systems

	1999	2000	2001	2002	2003
The automated trading system at CSE					
Netting ratio for cash over year					
Equity shares (%)	10.5	20.2	10.9	8.2	4.5
Corporate debt (%)	19.4	15.3	32.7	25.5	31.4
Netting ratio for securities over year	nap	nap	nap	nap	nap

Source: Colombo Stock Exchange.

Table 12
Participation in SWIFT by domestic institutions

	1999	2000	2001	2002	2003
Members	9	9	9	9	9
<i>of which: live</i>	9	9	9	9	9
Sub-members	13	12	11	10	13
<i>of which: live</i>	12	12	10	10	12
Participants	2	3	3	3	11
<i>of which: live</i>	2	3	3	3	11
Total users	24	24	23	22	33
<i>Memorandum items:</i>					
Total SWIFT users	6,991	7,293	7,457	7,601	7,654
<i>of which:</i>					
<i>members</i>	2,230	2,307	2,265	2,217	2,327
<i>sub-members</i>	2,825	3,037	3,143	3,130	3,083
<i>participants</i>	1,936	1,949	2,049	2,254	2,244

Source: SWIFT.

Table 13
SWIFT message flows to/from domestic users

In thousands

	1999	2000	2001	2002	2003
Total messages sent	1,028.3	1,153.3	1,215.6	1,286.5	1,417.5
<i>of which:</i>					
<i>category I</i>	166.6	197.5	222.1	257.5	303.6
<i>category II</i>	236.5	269.4	277.2	261.5	307.5
Total messages received	1,062.0	1,147.1	1,197.7	1,227.9	1,408.3
<i>of which:</i>					
<i>category I</i>	468.0	484.9	523.0	570.9	636.0
<i>category II</i>	30.2	31.5	34.1	38.0	66.5
Domestic traffic	nav	97.1	102.9	106.1	180.9
<i>Memorandum item:</i>					
Global SWIFT traffic	1,076,490.6	1,298,668.1	1,533,906.0	1,817,444.0	2,047,564.4

Source: SWIFT.

Comparative tables

Table 1
Banknotes and coin in circulation
 End of year

	Total (USD millions) ¹					Value per inhabitant (USD) ¹				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	811	783	703	778	885	45	42	38	41	46
Belgium	12,056	11,044	6,257	nap	nap	1,179	1,078	609	nap	nap
Canada	25,518	23,539	23,697	25,475	32,103	837	764	761	810	1,012
France	44,894	41,488	25,812	nap	nap	745	685	424	nap	nap
Germany	131,707	117,148	59,901	nap	nap	1,604	1,425	727	nap	nap
Hong Kong SAR	12,807	11,770	13,035	14,520	16,472	1,938	1,766	1,938	2,139	2,421
Italy	66,110	64,630	50,805	nap	nap	1,147	1,119	877	nap	nap
Japan	581,944	539,144	507,160	597,537	677,030	4,594	4,248	3,984	4,689	5,305
Netherlands	17,397	15,752	8,052	nap	nap	1,100	989	502	nap	nap
Singapore	6,792	6,520	6,412	7,118	7,548	1,719	1,623	1,552	1,706	1,804
Sweden	10,226	9,409	9,166	10,984	13,698	1,154	1,061	1,030	1,231	1,529
Switzerland	19,830	19,562	21,418	24,590	28,188	2,767	2,714	2,940	3,349	3,807
United Kingdom	45,612	45,059	47,009	54,767	64,842	780	768	796	925	1,092
United States	521,700	535,600	585,400	630,500	667,000	1,868	1,897	2,052	2,188	2,292

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 1 (cont)

Banknotes and coin in circulation

End of year

	As a percentage of GDP					As a percentage of narrow money				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	5.3	5.0	4.7	4.8	4.9	53.9	52.9	53.6	54.0	53.0
Belgium	5.1	4.8	2.8	nap	nap	20.4	19.3	11.8	nap	nap
Canada	3.7	3.3	3.4	3.5	3.4	15.6	13.7	13.0	13.0	12.7
France	3.3	3.1	2.0	nap	nap	12.7	11.9	7.4	nap	nap
Germany	6.6	6.2	3.3	nap	nap	23.5	21.9	11.3	nap	nap
Hong Kong SAR	8.1	7.2	8.0	9.1	10.5	48.5	45.0	44.2	43.6	36.0
Italy	5.9	6.0	4.7	nap	nap	14.4	14.1	11.0	nap	nap
Japan	11.7	12.1	13.2	14.3	14.5	24.8	25.0	23.7	20.5	19.9
Netherlands	4.6	4.2	2.1	nap	nap	12.8	11.4	5.7	nap	nap
Singapore	8.0	7.1	7.7	7.9	8.1	36.4	33.9	32.9	34.5	33.2
Sweden	4.2	4.1	4.3	4.1	4.0	nav	nav	nav	nav	nav
Switzerland	8.0	7.7	8.5	8.2	8.2	15.3	15.8	16.3	14.7	12.3
United Kingdom	3.1	3.2	3.3	3.3	3.3	5.0	5.1	5.0	4.8	4.7
United States	5.6	5.5	5.8	6.0	6.1	45.4	48.2	48.7	50.8	50.6

¹ Converted at end-of-year exchange rates.

Table 2
Transferable deposits held by non-banks
 End of year

	Value per inhabitant (USD) ¹					As a percentage of GDP					As a percentage of narrow money				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^a	38	38	32	35	41	4.5	4.4	4.0	4.0	4.3	46.1	47.1	46.4	46.0	47.0
Belgium	4,609	4,504	4,558	5,593	7,535	19.9	20.0	20.9	21.2	23.1	79.6	80.8	88.2	nap	nap
Canada	4,529	4,832	5,104	5,419	6,973	20.3	20.7	22.8	23.2	23.5	84.4	86.3	87.0	87.0	87.3
France	5,147	5,122	5,371	6,406	7,826	22.8	23.5	25.2	24.6	24.4	87.7	88.8	93.5	nap	nap
Germany	5,212	5,074	5,699	7,411	9,665	21.5	22.1	25.7	27.6	29.7	76.5	78.1	88.7	nap	nap
Hong Kong SAR	2,061	2,160	2,445	2,762	4,296	8.6	8.9	10.1	11.7	18.6	51.5	55.0	55.8	56.4	64.0
Italy	6,798	6,819	7,128	9,231	11,797	35.2	36.3	38.4	40.5	41.7	85.6	85.9	89.0	nap	nap
Japan	13,931	12,748	12,854	18,186	21,327	35.5	36.3	42.5	55.5	58.5	75.2	75.0	76.3	79.5	80.1
Netherlands	7,525	7,712	8,294	9,906	12,146	31.7	32.8	35.2	34.3	34.0	87.5	88.8	94.6	nap	nap
Singapore	3,007	3,158	3,167	3,240	3,636	13.9	13.8	15.8	15.1	16.3	63.6	66.1	67.1	65.5	66.8
Sweden	10,953	10,307	9,868	12,399	15,556	39.8	39.5	40.9	41.1	41.1	nav	nav	nav	nav	nav
Switzerland	8,714	8,228	8,564	11,464	17,424	25.1	23.3	24.8	28.1	37.7	48.2	47.9	47.5	50.5	56.2
United Kingdom	14,723	14,495	15,191	18,314	22,430	59.0	59.9	62.3	64.5	67.6	95.3	95.3	95.3	95.5	95.6
United States	2,212	2,012	2,137	2,089	2,213	6.7	5.8	6.0	5.7	5.9	53.8	51.1	50.7	48.5	48.8

Note: Please refer to the individual country tables for a detailed explanation.

¹ Converted at end-of-year exchange rates.

Sri Lanka: ^a Demand deposits held by public are given under transferable deposits .

Table 3
Settlement media used by banks
 End of year

	Banks' reserves at central bank									
	USD billions¹					As a percentage of narrow money				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	0.4	0.4	0.4	0.4	0.4	27.8	26.9	29.5	27.3	26.4
Belgium	7.4	6.7	6.7	7.7	9.6	12.5	11.8	12.6	nap	nap
Canada	0.9	0.3	0.3	0.4	0.1	0.6	0.2	0.2	0.2	neg
France	24.1	26.0	26.3	34.8	32.8	6.8	7.4	7.5	nap	nap
Germany	33.5	33.0	34.3	40.5	47.9	6.0	6.2	6.5	nap	nap
Hong Kong SAR ²	1.0	0.1	0.1	0.1	3.6	3.9	0.3	0.3	0.2	8.0
Italy	12.2	11.4	11.5	14.2	18.4	2.7	2.5	2.5	nap	nap
Japan	94.9	36.9	82.6	151.6	231.6	4.0	1.7	3.9	5.2	6.8
Netherlands	7.3	8.7	9.0	8.9	15.9	5.4	6.3	6.4	nap	nap
Singapore	4.5	3.3	3.8	3.7	3.9	24.2	17.1	19.3	18.0	17.0
Sweden	0.5	neg	neg	neg	neg	nav	nav	nav	nav	nav
Switzerland	6.6	4.7	4.7	5.3	6.0	5.1	3.8	3.6	3.2	2.6
United Kingdom	3.3	2.3	2.5	3.0	3.5	0.4	0.3	0.3	0.3	0.3
United States	12.4	13.5	17.8	20.9	22.6	1.1	1.2	1.5	1.7	1.7

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 3 (cont)
Settlement media used by banks
 End of year

	Transferable deposits at other banks									
	USD billions ¹					As a percentage of narrow money				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	0.2	0.4	0.2	0.2	0.2	13.4	28.0	11.9	11.6	9.5
Belgium	6.5	6.6	11.7	8.4	14.8	11.0	11.5	22.0	nap	nap
Canada	5.2	4.5	3.3	3.3	4.2	3.2	2.6	1.8	1.7	1.7
France	190.7	169.2	165.9	186.9	221.9	53.9	48.4	47.4	nav	nav
Germany	114.9	105.5	108.5	133.8	147.5	20.5	19.8	20.5	nav	nav
Hong Kong SAR ²	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Italy	59.3	88.1	75.0	101.5	101.7	12.9	19.2	16.2	nav	nav
Japan	103.1	37.8	52.8	75.3	90.6	4.4	1.8	2.5	2.6	2.7
Netherlands	16.4	49.7	26.9	36.2	37.9	12.1	35.9	19.1	nav	nav
Singapore	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Sweden	11.1	7.9	11.4	10.1	8.6	nav	nav	nav	nav	nav
Switzerland	26.2	30.8	27.4	27.8	52.4	20.3	24.8	20.9	16.6	22.8
United Kingdom	369.8	380.7	430.1	582.2	726.9	40.9	42.7	45.7	51.3	52.2
United States	27.5	32.1	34.8	35.7	35.4	2.4	2.9	2.9	2.9	2.7

¹ Converted at end-of-year exchange rates.

Hong Kong SAR: ² Banks do not maintain reserves with the HKMA as there are no reserve requirements in Hong Kong SAR. The data represent the closing balance of the aggregate balance of settlement accounts.

Table 4
Institutional framework

	Number of institutions ^{1,2}		Number of central bank branches ¹		Number of bank branches ^{1,2}		Number of post office branches ¹		Others ¹		Total number of branches ^{1,2}		Number of accounts on which payments can be made ³	
	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003
Sri Lanka ^{a, b, c}	0.7	0.7	0.1	0.1	65.2	66.7	242.9	243.1	nap	nap	308.1	309.9	nav	nav
Belgium	10.9	10.7	0.2	0.2	537.3	480.9	129.9	130.3	nap	nap	667.4	611.4	1.0	nya
Canada ^{4, 5}	47.7	44.0	neg	neg	284.4	284.3	nap	nap	168.6	170.5	453.1	454.9	nav	nav
France	25.6	25.3	3.4	3.4	427.3	419.5	181.2	164.3	nav	nav	611.9	587.2	1.1	1.1
Germany ⁶	29.3	27.8	1.4	0.8	611.4	565.8	nap	nap	nap	nap	612.8	566.6	1.0	1.0
Hong Kong SAR ⁷	19.7	19.8	neg	neg	216.6	202.4	nap	nap	nap	nap	216.6	202.4	nav	nav
Italy	13.0	12.5	1.7	1.7	513.9	523.1	237.8	243.8	nap	nap	753.4	768.6	0.8	0.6
Japan	16.8	15.3	0.3	0.3	288.5	277.6	189.5	189.0	nap	nap	478.3	466.9	4.2	4.2
Netherlands ⁸	6.4	6.4	0.2	0.2	200.3	246.2	142.7	143.2	nap	nap	343.2	389.7	1.3	1.4
Singapore ⁹	43.6	41.8	0.7	0.7	135.2	123.3	nap	nap	nap	nap	135.5	123.5	nav	nav
Sweden	14.3	13.7	0.1	0.1	218.7	205.6	134.5	134.0	nap	nap	353.3	339.7	nav	nav
Switzerland	43.3	40.9	0.8	0.8	371.0	361.4	397.5	367.6	nap	nap	769.6	729.8	nav	nav
United Kingdom	7.6	7.2	neg	neg	244.9	240.5	295.6	277.9	nap	nap	540.5	518.4	2.4 ¹⁰	2.4
United States	68.4	64.5	0.1	0.1	275.1	268.4	nap	nap	nap	nap	275.2	268.5	nav	nav

Note: Please refer to the individual country tables for a detailed explanation.

¹ Offering cashless payment services; per million inhabitants. ² Except where noted, excludes branches of foreign banks. ³ Per inhabitant.

Sri Lanka: ^a "Number of Institutions" excludes licensed specialised banks. ^b "Number of central bank branches" includes only the head office which provides cashless payment services.

^c "Number of bank branches" excludes the branches of central bank and the licensed specialised banks.

Canada: ⁴ "Number of central bank branches": there are five branches but only one offers payment services. ⁵ "Others" includes trust and loan companies; local credit unions and caisses populaires; and governmental savings institutions.

Germany: ⁶ Postbank AG is a fully fledged credit institution, and those post office branches which are entrusted with the semi-cashless payment systems on behalf of Postbank AG are included under "Number of bank branches" (and not "Number of post office branches").

Hong Kong SAR: ⁷ "Number of central bank branches" excludes the HKMA's two overseas representative offices (London and New York).

Netherlands: ⁸ "Number of bank branches" excludes the counters of the postal institution.

Singapore: ⁹ As at end-March. The institutions offering payment services include banks and finance companies. "Number of central bank branches": representative offices in London and New York, which do not offer cashless payment services, and the main office in Singapore.

United Kingdom: ¹⁰ Revised.

Table 5
Cards with a cash function and ATMs

	Number of ATMs per million inhabitants (end of year)					Number of transactions per inhabitant					Average value per transaction (USD) ¹				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	nav	nav	26	33	37	nav	nav	0.8	1.3	1.7	nav	nav	34.8	29.8	36.9
Belgium	606	657	669	684	681	17.4	19.8	21.5	23.6	25.4	111.3	97.5	92.8	98.5	120.5
Canada ³	877	1,037	1,145	1,272	1,394	47.3	48.4	47.9	45.6	43.0	52.4	54.4	56.6	56.8	65.9
France	538	580	606	637	683	17.0	17.9	19.1	19.8	20.3	64.8	56.0	54.7	59.1	73.4
Germany ⁴	563	580	603	612	620	18.9	21.0	20.0	20.2	39.6	157.1	135.6	141.4	149.7	200.2
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Italy	526	551	632	683	671	8.7	9.1	9.9	10.9	11.0	170.6	150.3	148.4	152.6	186.1
Japan ⁵	944	922	918	895	872	3.1	3.2	3.1	2.9	2.7	501.3	532.2	474.4	461.0	501.9
Netherlands	422	435	445	466	465	28.5	29.5	30.5	30.5	30.4	93.7	79.7	81.1	100.0	118.6
Singapore ⁶	470	446	435	371	371	2.6	2.1	2.1	2.2	1.6	140.0	138.2	124.7	99.1	97.1
Sweden	291	295	289	297	299	35.0	36.2	37.7	36.0	36.6	100.2	92.1	81.4	86.2	106.4
Switzerland	655	675	692	706	722	12.2	13.5	14.8	15.5	15.8	173.2	158.1	151.5	157.3	179.5
United Kingdom	468	563	621	690	783	33.7	34.6	36.8	38.3	40.0	88.8	84.3	84.1	90.0	99.1
United States	813	967	1,136	1,221	nya	39.0	45.3	47.7	36.8	nya	68.0	70.1	68.0	68.0	nya

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 5 (cont)

Cards with a cash function and ATMs

	Increase in the number of ATMs (%)					Increase in the number of transactions (%)					Increase in the value of transactions (%) ²				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	nav	nav	nav	28.5	13.4	nav	nav	nav	78.0	33.5	nav	nav	nav	52.7	65.3
Belgium	7.7	8.6	2.1	2.7	0.1	11.4	14.1	9.2	10.2	8.3	4.9	-0.1	4.0	16.9	32.5
Canada ³	13.7	19.4	11.6	12.2	10.5	0.5	3.3	0.1	-3.8	-4.9	4.6	5.7	2.0	-4.4	8.6
France	10.3	8.4	5.0	5.6	7.7	10.3	5.5	7.7	4.1	2.6	13.9	-8.9	5.2	12.4	27.6
Germany ⁴	1.3	3.1	4.1	1.7	1.3	10.7	10.8	-4.4	1.2	96.0	2.6	-4.3	-0.3	7.2	162.1
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Italy	8.0	5.1	15.0	8.3	-1.6	2.5	5.6	8.7	9.9	1.1	-2.1	-7.0	7.3	13.1	23.3
Japan ⁵	1.2	-2.2	-0.1	-2.5	-2.4	neg	3.6	-2.2	-8.5	-6.5	15.6	10.0	-12.9	-11.1	1.8
Netherlands	1.6	3.7	3.2	5.4	0.3	5.9	4.4	4.3	0.6	0.2	3.3	-11.1	6.0	24.1	18.9
Singapore ⁶	-2.0	-3.3	0.2	-13.9	0.4	-34.8	-15.4	2.7	4.1	-24.9	-32.4	-16.5	-7.3	-17.3	-26.4
Sweden	3.8	1.4	-1.9	3.1	1.1	-6.9	3.5	4.4	-4.2	2.2	-13.9	-4.9	-7.7	1.5	26.0
Switzerland	2.5	3.7	3.6	2.9	3.1	8.5	11.2	11.3	5.6	2.5	4.2	1.5	6.7	9.6	16.9
United Kingdom	11.4	20.5	11.1	11.3	13.8	6.4	3.0	7.3	4.3	4.6	7.6	-2.2	7.0	11.6	15.2
United States	21.4	20.3	18.7	8.6	nya	-2.7	17.4	6.3	-22.1	nya	-2.7	21.1	3.0	-22.1	nya

¹ Converted at yearly average exchange rates. ² In USD terms, converted using yearly average exchange rates.

Canada: ³ Data on the value of transactions refer to cash withdrawals only.

Germany: ⁴ Until 2002, data on the volume and value of transactions are estimated.

Japan: ⁵ Data on the volume and value of transactions refer to cash withdrawals through the interbank CD/ATM networks only.

Singapore: ⁶ The transactions refer to shared ATM transactions.

Table 6
Cards with a debit function and POS accepting terminals

	Number of POS terminals per million inhabitants (end of year)					Number of transactions per inhabitant					Average value per transaction (USD) ¹				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	nav	nav	142	179	203	nav	nav	neg	neg	neg	nav	nav	36.3	35.4	31.3
Belgium	9,746	11,364	14,047	13,141	10,900	34.6	39.8	45.0	52.1	53.2	53.8	47.0	45.1	47.0	57.1
Canada	13,317	14,231	14,881	15,737	16,416	54.5	63.7	71.9	76.4	81.7	29.2	29.2	27.4	27.8	32.0
France	13,261	13,848	14,845	15,620	16,267	48.3	54.3	60.3	66.9	70.6	49.2	42.8	41.5	43.7	53.1
Germany ³	5,761	7,194	5,291	5,584	6,008	11.6	13.8	16.2	18.6	20.2	79.4	67.3	62.2	63.3	73.9
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Italy	7,549	9,878	12,918	14,109	15,945	4.3	5.5	7.5	9.5	10.5	81.5	66.6	66.1	83.5	109.0
Japan	nav	nav	nav	nav	nav	neg	neg	neg	0.1	0.1	247.5	424.0	408.2	420.4	482.6
Netherlands	9,208	9,774	10,333	10,972	11,466	44.3	50.3	59.5	66.2	71.2	48.6	42.9	41.4	44.6	52.6
Singapore	4,506	4,851	5,067	5,625	6,679	16.6	19.1	21.2	23.3	25.3	36.7	35.7	34.9	35.5	38.2
Sweden	9,160	9,821	9,917	11,431	12,062	22.4	28.9	36.6	57.0	74.6	72.7	60.9	54.9	60.0	53.0
Switzerland	8,599	9,369	10,139	10,984	10,803	19.1	23.9	27.7	30.8	33.1	76.0	89.5	100.2	108.3	121.1
United Kingdom	11,970	12,533	13,078	13,691	14,508	35.3	39.9	45.7	50.6	56.7	51.0	49.2	50.7	54.1	63.3
United States	8,414	10,978	12,267	12,144	nya	26.9	33.8	43.6	54.1	nya	43.0	43.9	45.9	44.9	nya

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 6 (cont)

Cards with a debit function and POS accepting terminals

	Increase in the number of POS terminals (%)					Increase in the number of transactions (%)					Increase in the value of transactions (%) ²				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	nav	nav	nav	27.2	15.2	nav	nav	nav	80.2	40.3	nav	nav	nav	75.7	24.1
Belgium	7.1	16.9	24.0	-6.0	-16.7	19.0	15.5	13.3	16.3	2.5	11.4	0.8	8.7	21.2	24.7
Canada	3.1	7.9	5.7	6.8	5.2	22.6	18.0	14.1	7.5	7.7	21.9	18.1	7.2	9.0	23.8
France	10.5	4.9	7.8	5.8	4.6	12.8	13.1	11.5	11.6	6.0	6.4	-1.7	8.1	17.6	28.6
Germany ³	30.3	25.0	nap	5.7	7.6	41.1	18.9	17.7	15.1	8.8	32.1	0.9	8.8	17.1	26.8
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Italy	25.9	31.1	31.1	9.4	13.2	44.2	28.2	36.2	27.7	10.5	29.5	4.7	35.2	61.3	44.2
Japan	nav	nav	nav	nav	nav	nav ⁴	716	91.0	34.0	15.0	nav ⁴	1,298	83.9	38.0	32.0
Netherlands	8.6	6.9	6.5	6.9	5.1	17.7	14.5	19.1	12.0	8.3	18.8	0.9	15.1	20.6	27.6
Singapore	11.0	9.5	7.4	12.1	19.1	13.5	17.0	14.0	10.8	8.9	14.5	13.8	11.3	12.8	17.1
Sweden	9.1	7.4	1.3	15.6	5.9	23.8	29.3	27.3	56.1	31.2	18.0	8.4	14.7	70.8	15.8
Switzerland	20.7	9.6	9.4	9.2	-0.8	28.9	25.9	17.3	12.1	8.3	53.4	48.3	31.3	21.1	21.1
United Kingdom	14.8	5.0	5.0	5.0	6.3	18.8	13.3	15.4	11.1	12.4	17.5	9.9	18.9	18.4	31.6
United States	38.2	31.9	12.9	neg	nya	31.0	27.2	30.4	25.1	nya	35.3	29.9	36.4	22.4	nya

¹ Converted at yearly average exchange rates. ² In USD terms, converted using yearly average exchange rates.

Germany: ³ For the number of POS terminals, figures prior to 2001 include double-counting of replacement terminals; for this reason, the percentage change in 2001 cannot be calculated.
 Japan: ⁴ The nationwide debit card service launched in January 1999.

Table 7

Cards with a credit function and accepting terminals

	Number of accepting terminals per million inhabitants (end of year)					Number of transactions per inhabitant					Average value per transaction (USD) ¹				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	nav	nav	196	224	249	nav	nav	0.3	0.3	0.4	nav	nav	30.6	30.3	31.4
Belgium	nav	nav	nav	nav	nav	4.8	5.2	5.9	5.5	6.6	107.6	94.7	97.3	100.2	120.3
Canada ³	25,463	29,367	30,165	30,170	30,351	37.7	41.3	42.4	47.5	51.7	62.7	66.7	59.7	65.3	71.9
France	13,261	13,848	14,845	15,620	16,267	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Germany ^{4,5}	4,905	5,603	5,809	5,736	5,733	3.3	6.5	6.7	6.9	7.1	89.1	60.2	60.1	64.0	76.7
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Italy	nav	nav	nav	nav	nav	4.0	4.7	5.4	6.2	6.4	97.6	84.6	85.5	89.5	105.6
Japan ⁶	5,488	6,069	6,426	7,001	nya	12.0	15.8	17.6	18.4	nya	116.6	100.7	85.3	84.2	nya
Netherlands ⁷	nav	nav	nav	nav	nav	2.8	2.9	3.0	2.8	2.7	105.7	101.5	99.5	109.6	125.4
Singapore ⁸	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Sweden ⁹	9,160	9,821	9,917	11,431	12,062	6.4	7.6	8.6	9.0	9.9	116.7	110.7	94.5	87.7	107.4
Switzerland	nav	nav	nav	nav	nav	12.1	10.4	11.0	11.1	11.0	121.7	115.7	114.3	120.4	139.2
United Kingdom ¹⁰	11,970	12,533	13,078	13,691	14,508	26.2	28.2	30.5	32.5	34.8	98.9	97.0	95.0	99.8	109.2
United States	40,459	44,619	46,264	47,189	nya	52.3	57.3	59.9	62.0	nya	86.6	88.7	88.6	90.1	nya

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 7 (cont)

Cards with a credit function and accepting terminals

	Increase in the number of accepting terminals (%)					Increase in the number of transactions (%)					Increase in the value of transactions (%) ²				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka	nav	nav	nav	16.2	12.6	nav	nav	nav	14.9	22.7	nav	nav	nav	14.2	26.3
Belgium	nav	nav	nav	nav	nav	9.7	10.6	13.0	-6.1	20.4	6.3	-2.7	16.1	-3.3	44.4
Canada ³	-0.3	16.5	3.9	1.0	1.4	13.8	10.7	3.9	13.1	9.7	7.9	17.8	-7.1	23.7	20.8
France	10.5	4.9	7.8	5.8	4.6	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Germany ^{4,5}	11.1	14.4	3.9	-1.1	neg	-13.7	11.1	2.6	2.9	3.1	-23.9	1.8	2.4	9.6	23.5
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Italy	nav	nav	nav	nav	nav	30.9	18.8	15.4	14.0	4.5	25.2	3.0	16.6	19.4	23.3
Japan ⁶	6.5	10.8	6.2	9.1	nya	1.4	32.3	11.8	4.2	nya	21.9	14.3	-5.3	2.8	nya
Netherlands ⁷	nav	nav	nav	nav	nav	4.6	6.2	1.5	-4.0	-3.3	6.8	2.0	-0.5	5.7	10.7
Singapore ⁸	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	14.7	15.9	1.1	8.1	7.2
Sweden ⁹	9.1	7.4	1.3	15.6	5.9	9.6	17.5	13.9	5.1	10.5	3.7	11.5	-2.7	-2.4	35.3
Switzerland	nav	nav	nav	nav	nav	23.6	-13.5	7.6	1.6	neg	10.4	-17.8	6.3	7.0	15.6
United Kingdom ¹⁰	14.8	5.0	5.0	5.0	6.3	9.4	8.0	8.8	6.7	7.4	15.6	6.0	6.6	12.1	17.5
United States	neg	11.5	4.8	3.0	nya	8.8	10.9	5.6	4.5	nya	11.8	13.6	5.5	6.2	nya

¹ Converted at yearly average exchange rates ² In USD terms, converted using yearly average exchange rates.

Canada: ³ Includes both credit and charge cards.

Germany: ⁴ For 2000, the percentage change in the number and value of transactions excludes retailer card transactions. ⁵ The figures for card terminals have been revised and are for the largest market participant, since terminals usually accept different credit card brands.

Japan: ⁶ Includes cards with a delayed debit function.

Netherlands: ⁷ Includes cards with a delayed debit function.

Singapore: ⁸ For both credit and charge cards.

Sweden: ⁹ Includes delayed debit transactions.

United Kingdom: ¹⁰ Includes cards with a delayed debit function; figures for the number of terminals accepting such cards are not available.

Table 8

Cards with an e-money function and accepting terminals

	Number of electronic money cards (end of year, in thousands)					Average value per reloading (USD) ¹				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^a	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Belgium	7,898	8,396	8,543	8,271	nya	27.9	24.3	27.3	34.6	37.8
Canada	58	87	74	77	neg	nav	nav	nav	nav	nav
France	neg	neg	319	838	1,272	neg	neg	28.3	29.0	32.3
Germany	60,700	60,700	67,333	67,597	62,817	42.7	29.1	25.3	25.8	28.6
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Italy	32	45	30	310	668	neg	neg	neg	neg	neg
Japan	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Netherlands	20,100	20,900	21,000	17,300	17,600	nav	nav	nav	nav	nav
Singapore	3,464	4,697	5,639	9,776	11,513	nav	nav	nav	nav	nav
Sweden	540	593	557	490	nya	33.7	27.6	24.4	nav	nav
Switzerland	3,137	3,355	3,524	3,692	3,889	nav	nav	nav	nav	nav
United Kingdom	160	nav	nav	nav	nav	neg	neg	neg	nav	nav
United States	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 8 (cont)

Cards with an e-money function and accepting terminals

	Number of purchase terminals					Average value per transaction (USD) ¹				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^a	nap	nap	nap	nap	nap	nap	nap	nap	nap	nap
Belgium	63,993	67,837	88,847	113,298	108,215	4.0	3.5	4.0	5.2	5.8
Canada	970	1,245	490	333	neg	nav	nav	nav	nav	nav
France	nap	nap	13,644	69,172	105,801	neg	neg	3.2	3.6	4.4
Germany	59,732	66,946	80,191	98,492	120,905	3.8	2.5	2.1	2.0	2.3
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Italy	3,605	6,485	6,644	5,481	7,754	neg	neg	neg	neg	neg
Japan	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Netherlands	125,807	133,548	148,207	164,863	180,108	3.3	2.7	2.4	2.6	3.1
Singapore	14,196	16,270	17,944	42,486	45,870	0.7	1.0	1.2	0.5	0.5
Sweden	43,921	43,000	47,000	37,909	nya	5.8	7.4	4.9	6.2	nya
Switzerland	22,948	27,215	31,290	33,508	34,467	neg	2.2	2.2	2.3	2.8
United Kingdom	1,921	nav	nav	nav	nav	neg	neg	neg	neg	neg
United States	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav

¹ Converted at yearly average exchange rates.

Sri Lanka: ^a There are no e-money schemes.

Table 9
Number of cards¹
 Per thousand inhabitants

	Cards with a cash function		Cards with a debit function		Cards with a credit function		Cards with a debit function issued by retailers		Cards with an e-money function		Cards with a cheque guarantee function	
	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003	2002	2003
Sri Lanka	nav	nav	55.7	71.8	17.2	21.1	nap	nap	nap	nap	nap	nap
Belgium	1,442.6	1,505.6	1,306.5	1,322.9	294.2	298.5	158.1	115.9	800.7	nya	nap	nap
Canada ²	nav	nav	nav	nav	1,653.4	1,671.4	nap	nap	2.4	neg	nap	nap
France ³	741.5	775.0	683.5	722.0	nav	nav	nav	nav	13.7	20.7	nap	nap
Germany	1,447.5	1,420.3	1,135.5	1,096.9	384.4	393.5	nav	nav	758.9	761.2	nap	nap
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Italy	476.6	503.3	458.6	484.4	374.9	441.1	nap	nap	5.3	11.5	neg	neg
Japan ⁴	2,603.4	2,631.2	nav	nav	1,919.3	1,990.3	nap	nap	nav	nav	nap	nap
Netherlands ⁵	1,634.9	1,649.7	1,337.6	1,335.8	315.8	350.9	nav	nav	1,071.3	1,083.4	nav	nav
Singapore ⁶	1,417.6	1,386.1	1,417.6	1,386.1	773.2	835.1	nap	nap	2,343.8	2,751.0	nap	nap
Sweden ⁷	535.6	578.4	548.3	622.2	376.0	409.2	nav	nav	54.9	nya	nav	nav
Switzerland	1,233.3	1,255.2	789.6	802.2	453.9	453.6	nav	nav	502.8	525.2	789.6	802.2
United Kingdom	2,399.9	2,663.3	1,003.6	1,058.7	1,065.8	1,200.2	nap	nap	nav	nav	1,031.9	947.5
United States	2,999.6	nya	903.5	nya	4,361.1	nya	39.6	nya	nav	nav	nav	nav

Note: Please refer to the individual country tables for a detailed explanation.

¹ A card which has several functions is counted in each relevant column (for example, a eurocheque card which can be used to withdraw cash, to make payments and to guarantee cheques is counted under each of these three items). For this reason, the figures should not be added together.

Canada: ² Data on cards with a credit function as at 31 October.

France: ³ Figures for cards with a credit function are not provided.

Japan: ⁴ Data on cards with a cash function are as at end-March of the following year. Data on cards with a credit function include cards with a delayed debit function, and are as at end-March of the current year.

Netherlands: ⁵ Data on cards with a credit function include cards with a delayed debit function.

Singapore: ⁶ Data on cards with a cash and/or debit function are based on a survey of selected local and foreign banks.

Sweden: ⁷ Data on cards with a credit function include cards with a delayed debit function.

Table 10
Use of cards

	Average number of:							
	Cash withdrawals per card with a cash function		Payments per card with a debit function		Payments per card with a credit function		Payments per card with an e-money function	
	2002	2003	2002	2003	2002	2003	2002	2003
Sri Lanka	nav	nav	0.2	0.2	19.1	18.9	nav	nav
Belgium	16.4	16.9	39.9	40.2	18.8	22.2	14.6	nya
Canada	nav	nav	nav	nav	28.7	30.9	nav	nav
France ¹	26.7	26.1	97.9	97.8	nav	nav	22.0	14.2
Germany	14.0 ²	27.9	16.4	18.5	17.8	17.9	0.6	0.6
Hong Kong SAR	nav	nav	nav	nav	nav	nav	nav	nav
Italy	22.8	21.8	20.8	21.7	16.5	14.6	neg	4.5
Japan ³	1.1	1.0	nav	nav	9.6	nya	nav	nav
Netherlands ⁴	18.7	18.4	49.5	53.3	8.9	7.7	5.0	6.2
Singapore ⁵	nav	nav	16.4	18.2	nav	nav	71.8	133.4
Sweden ⁶	67.2	63.3	104.0	119.8	23.9	24.2	1.5	nya
Switzerland	12.6	12.6	39.0	41.2	24.5	24.3	5.4	5.0
United Kingdom	16.0	15.0	50.4	53.5	30.5	29.0	nav	nav
United States	12.3	nya	59.8	nya	14.2	nya	nav	nav

Note: Please refer to the individual country tables for a detailed explanation.

France: ¹ Data on payments per card with a credit function are included in those per card with a debit function.

Germany: ² Estimated.

Japan: ³ Data on cards with a credit function include cards with a delayed debit function.

Netherlands: ⁴ Data on cards with a credit function include cards with a delayed debit function.

Singapore: ⁵ Payments per card with a debit function refer to shared ATM transactions.

Sweden: ⁶ Data on cards with a credit function include cards with a delayed debit function.

Table 11

Use of cashless payment instruments

Total number of transactions, in millions

	Cheques					Payments by credit/debit cards				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^{a, b, c}	32.7	34.6	35.3	35.5	36.5	nav	nav	5.5	6.5	7.9
Belgium	80.2	70.7	60.1	28.9	nya	402.1	462.0	523.4	595.1	620.3
Canada	1,716.4	1,658.2	1,589.0	1,515.0	1,449.8	2,809.0	3,230.9	3,556.6	3,897.0	4,228.0
France	4,479.6	4,493.7	4,338.6	4,179.6	3,927	2,911.6	3,292.4	3,670.7	4,095.6	4,341.5
Germany ^{2, 3}	424.0	393.3	319.8	149.7	133.3	1,226.9	1,669.2	1,883.3	2,101.1	2,253.2
Hong Kong SAR	134.1	138.6	133.5	129.6	124.6	nav	nav	nav	nav	nav
Italy	665.2	602.0	584.2	538.1	506.2	476.7	589.8	747.8	911.7	984.7
Japan	239.3	225.9	208.9	187.1	172.0	1,517.8	2,010.6	2,250.3	2,347.3	nya
Netherlands ⁴	26.7	14.2	5.3	0.1	neg	744.4	848.3	1,001.9	1,115.2	1,201.2
Singapore ⁵	92.6	91.7	92.0	90.7	87.6	75.8	85.5	96.5	106.3	112.7
Sweden	3.5	2.0	1.7	1.5	0.2	255.0	323.0	402.0	589.0	757.0
Switzerland ⁶	6.7	11.2	7.2	4.5	3.5	223.0	246.7	282.1	307.9	326.6
United Kingdom	2,859.0	2,699.0	2,565.0	2,393.0	2,251.0	3,406.0	3,788.0	4,257.0	4,681.0	5,186.0
United States ⁷	43,812.1	42,500.0	41,222.6	39,985.9	nya	22,106.4	25,734.9	29,542.8	33,441.3	nya

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 11 (cont)

Use of cashless payment instruments

Total number of transactions, in millions

	Credit transfers					Direct debits				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^{a, b, c}	nav	nav	1.3	1.6	2.0	nav	nav	neg	neg	neg
Belgium	723.0	656.8	752.4	808.1	nya	142.3	166.2	176.8	168.8	nya
Canada	508.5	569.5	639.2	657.6	728.0	405.4	444.4	488.5	520.4	560.6
France	2,050.7	2,093.6	2,175.5	2,564.2	2,587.5	1,730.6	1,968.6	2,063.5	2,183.8	2,353.2
Germany ^{2, 3}	5,274.6	5,442.1	5,544.7	5,413.2	5,692.7	4,220.5	4,511.2	4,561.2	4,287.9	5,252.3
Hong Kong SAR	15.5	16.6	18.1	19.5	20.6	33.5	35.2	37.1	37.2	35.9
Italy	1,003.4	1,018.6	1,053.3	996.6	1,023.8	496.7	569.8	639.4	690.7	722.3
Japan	1,166.9	1,215.3	1,268.1	1,292.5	1,308.4	nav	nav	nav	nav	nav
Netherlands ⁴	1,105.5	1,170.4	1,226.9	1,260.5	1,261.4	785.0	836.2	876.1	947.0	990.1
Singapore ⁵	13.9	14.6	16.8	17.7	19.9	17.4	17.3	19.0	30.3	44.7
Sweden	796.8	792.9	764.3	435.5	425.6	85.0	91.0	98.0	119.0	130.6
Switzerland ⁶	586.0	545.2	503.2	537.7	564.2	30.4	46.1	47.6	50.0	51.2
United Kingdom	1,797.0	1,845.0	1,931.0	2,008.0	2,213.0	1,863.0	2,010.0	2,152.0	2,289.0	2,430.0
United States ⁷	3,167.8	3,486.1	3,890.3	3,976.9	4,181.9	1,676.9	1,947.3	2,385.4	2,760.7	3,345.9

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 11 (cont)

Use of cashless payment instruments

Total number of transactions, in millions

	Card-based e-money					Total ¹				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^{a, b, c}	nap	nap	nap	nap	nap	32.7	34.6	42.1	43.6	46.4
Belgium	45.5	51.3	60.5	120.8	107.1	1,393.0	1,407.0	1,573.1	1,721.7	nya
Canada	nav	nav	nav	nav	nav	5,439.3	5,903.0	6,273.3	6,590.0	6,966.4
France	nav	nav	2.8	18.4	18.1	11,172.5	11,848.3	12,251.1	13,041.6	13,228.2
Germany ^{2, 3}	20.7	26.6	29.4	35.9	37.4	11,166.7	12,042.4	12,338.4	11,987.4	13,368.9
Hong Kong SAR	nav	nav	nav	nav	nav	183.2	190.3	188.8	186.4	181.1
Italy	neg	neg	neg	neg	neg	2,642.0	2,780.2	3,024.7	3,137.1	3,237.0
Japan	nav	nav	nav	nav	nav	2,924.0	3,451.8	3,727.3	3,826.9	nya
Netherlands ⁴	21.8	25.3	30.9	87.0	109.2	2,683.4	2,894.3	3,141.1	3,409.8	3,561.9
Singapore ⁵	77.0	100.1	102.2	702.1	1,535.9	276.6	309.1	326.4	947.2	1,800.7
Sweden	4.2	2.9	1.5	0.9	nav	1,144.5	1,211.8	1,267.5	1,145.9	1,313.4
Switzerland ⁶	10.7	18.0	19.8	20.0	19.3	856.8	867.2	859.9	920.1	964.8
United Kingdom	nav	nav	nav	nav	nav	9,925.0	10,342.0	10,905.0	11,371.0	12,080.0
United States ⁷	nav	nav	nav	nav	nav	70,763.2	73,668.3	77,041.1	80,164.8	nya

¹ Sum of the available data.Sri Lanka: ^a Cheques: includes only those presented to LankaClear Pvt Ltd for interbank clearing. ^b There are no e-money schemes. ^c Total: for 1999 and 2000, cheques only.Germany: ² Payments by credit cards: from 2000, the figure includes retailer card transactions. ³ Direct debits: debit card transactions are not included under this item but are shown under "Payments by credit/debit cards".Netherlands: ⁴ Payments by credit/debit cards include cards with a delayed debit function.Singapore: ⁵ Interbank transactions only. Payments by credit/debit cards exclude credit card transactions. Credit transfers include large-value transactions (MEPS).Switzerland: ⁶ Includes eurocheques, bank cheques, Swiss banker traveller's cheques and, as from 2000, Postcheques.United States: ⁷ A Federal Reserve study of the cheque clearing system, published in August 2002, estimated that the number of cheques paid in the United States was 49,500 million in 1995 and 42,500 million in 2000. Values for other years are derived from these estimates.

Table 12
Use of cashless payment instruments
 Total number of transactions per inhabitant

	Cheques					Payments by credit/debit cards					Credit transfers				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^{a, b, c}	1.8	1.9	1.9	1.9	1.9	nav	nav	0.3	0.3	0.4	nav	nav	0.1	0.1	0.1
Belgium	7.8	6.9	5.8	2.8	nya	39.3	45.1	50.9	57.6	59.8	70.7	64.1	73.2	78.2	nya
Canada	56.3	53.9	51.0	48.2	45.7	92.1	104.9	114.2	123.9	133.3	16.7	18.5	20.5	20.9	23.0
France	74.3	74.2	71.2	68.3	63.9	48.3	54.3	60.3	66.9	70.6	34.0	34.6	35.7	41.9	42.1
Germany ^{2, 3}	5.2	4.8	3.9	1.8	1.6	14.9	20.3	22.9	25.5	27.3	64.3	66.2	67.3	65.6	69.0
Hong Kong SAR	20.3	20.8	19.9	19.1	18.3	nav	nav	nav	nav	nav	2.4	2.5	2.7	2.9	3.0
Italy	11.5	10.4	10.1	9.3	8.7	8.3	10.2	12.9	15.7	16.9	17.4	17.6	18.2	17.2	17.6
Japan	1.9	1.8	1.6	1.5	1.3	12.0	15.8	17.7	18.4	nya	9.2	9.6	10.0	10.1	10.3
Netherlands ⁴	1.7	0.9	0.3	neg	neg	47.1	53.3	62.5	69.1	73.9	69.9	73.5	76.5	78.1	77.6
Singapore ⁵	23.4	22.8	22.3	21.8	20.9	19.2	21.3	23.4	25.5	26.9	3.5	3.6	4.1	4.2	4.7
Sweden	0.4	0.2	0.2	0.2	neg	28.8	36.4	45.2	66.0	84.5	90.0	89.4	85.9	48.8	47.5
Switzerland	0.9	1.6	1.0	0.6	0.5	31.1	34.2	38.7	41.9	44.1	81.8	75.6	69.1	73.2	76.2
United Kingdom	48.9	46.0	43.5	40.4	37.9	58.2	64.6	72.1	79.1	87.3	30.7	31.5	32.7	33.9	37.3
United States ⁶	156.9	150.5	144.5	138.7	nya	79.2	91.1	103.5	116.0	nya	11.3	12.3	13.6	13.8	14.4

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 12 (cont)

Use of cashless payment instruments

Total number of transactions per inhabitant

	Direct debits					Card-based e-money					Total ¹				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^{a, b, c}	nav	nav	neg	neg	neg	nap	nap	nap	nap	nap	1.8	1.9	2.3	2.3	2.4
Belgium	13.9	16.2	17.2	16.3	nya	4.4	5.0	5.9	11.7	10.3	136.3	137.3	153.0	166.7	nya
Canada	13.3	14.4	15.7	16.5	17.7	nav	nav	nav	nav	nav	178.4	191.7	201.5	209.5	219.7
France	28.7	32.5	33.9	35.7	38.3	nap	nav	neg	0.3	0.3	185.3	195.6	201.1	213.0	215.2
Germany ^{2, 3}	51.4	54.9	55.4	52.0	63.6	0.3	0.3	0.4	0.4	0.5	136.0	146.5	149.8	145.3	162.0
Hong Kong SAR	5.1	5.3	5.5	5.5	5.3	nav	nav	nav	nav	nav	27.7	28.6	28.1	27.5	26.6
Italy	8.6	9.9	11.0	11.9	12.4	neg	neg	neg	neg	neg	45.8	48.1	52.2	54.1	55.7
Japan	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav	23.1	27.2	29.3	30.0	nya
Netherlands ⁴	49.7	52.5	54.6	58.6	60.9	1.4	1.6	1.9	5.4	6.7	169.7	181.8	195.8	211.2	219.3
Singapore ⁵	4.4	4.3	4.6	7.3	10.7	19.5	24.9	24.7	168.3	367.0	70.0	76.9	79.0	227.1	430.3
Sweden	9.6	10.3	11.0	13.3	14.6	0.5	0.3	0.2	0.1	nya	129.2	136.6	142.5	128.4	nya
Switzerland	4.2	6.4	6.5	6.8	6.9	1.5	2.5	2.7	2.7	2.6	119.5	120.3	118.0	125.3	130.3
United Kingdom	31.9	34.3	36.5	38.7	40.9	nav	nav	nav	nav	nav	169.7	176.4	184.7	192.1	203.5
United States ⁶	6.0	6.9	8.4	9.6	11.5	nav	nav	nav	nav	nav	253.4	260.9	270.0	278.2	nya

¹ Sum of the available data.Sri Lanka: ^a Cheques: includes only those presented to LankaClear Pvt Ltd for interbank clearing. ^b There are no e-money schemes. ^c Total: for 1999 and 2000, cheques only.Germany: ² Payments by credit cards: from 2000, the figure includes retailer card transactions. ³ Direct debits: debit card transactions are not included under this item but are shown under "Payments by credit/debit cards".Netherlands: ⁴ Payments by credit/debit cards include cards with a delayed debit function.Singapore: ⁵ Interbank transactions only. Payments by credit/debit cards exclude credit card transactions. Credit transfers include large-value transactions (MEPS).United States: ⁶ A Federal Reserve study of the cheque clearing system, published in August 2002, estimated that the number of cheques paid in the United States was 49,500 million in 1995 and 42,500 million in 2000. Values for other years are derived from these estimates.

Table 13

Relative importance of cashless payment instrumentsPercentage of total volume of cashless transactions¹

	Cheques					Payments by credit/debit cards					Credit transfers				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^{a, b, c}	nav	nav	83.8	81.4	78.7	nav	nav	13.1	14.9	17.0	nav	nav	3.1	3.7	4.3
Belgium	5.8	5.0	3.8	1.7	nya	28.9	32.8	33.3	34.6	nya	51.9	46.7	47.8	46.9	nya
Canada	31.6	28.1	25.3	23.0	20.8	51.6	54.7	56.7	59.1	60.7	9.3	9.6	10.2	10.0	10.5
France	40.1	37.9	35.4	32.0	29.7	26.1	27.8	30.0	31.4	32.8	18.4	17.7	17.8	19.7	19.6
Germany ^{2, 3}	3.8	3.3	2.6	1.2	1.0	11.0	13.9	15.3	17.5	16.9	47.2	45.2	44.9	45.2	42.6
Hong Kong SAR	73.2	72.8	70.7	69.5	68.8	nav	nav	nav	nav	nav	8.5	8.7	9.6	10.5	11.4
Italy	25.2	21.7	19.3	17.2	15.6	18.0	21.2	24.7	29.1	30.4	38.0	36.6	34.8	31.8	31.6
Japan	8.2	6.5	5.6	4.9	nya	51.9	58.2	60.4	61.3	nya	39.9	35.2	34.0	33.8	nya
Netherlands ⁴	1.0	0.5	0.2	neg	neg	27.7	29.3	31.9	32.7	33.7	41.2	40.4	39.1	37.0	35.4
Singapore ⁵	33.5	29.6	28.2	9.6	4.9	27.4	27.7	29.6	11.2	6.3	5.0	4.7	5.1	1.9	1.1
Sweden	0.3	0.2	0.1	0.1	neg	22.3	26.7	31.7	51.4	57.6	69.6	65.4	60.3	38.0	32.4
Switzerland	0.8	1.3	0.8	0.5	0.4	26.0	28.4	32.8	33.5	33.9	68.4	62.9	58.5	58.4	58.5
United Kingdom	28.8	26.1	23.5	21.0	18.6	34.3	36.6	39.0	41.2	42.9	18.1	17.8	17.7	17.7	18.3
United States ⁶	61.9	57.7	53.5	49.9	nya	31.2	34.9	38.3	41.7	nya	4.5	4.7	5.0	5.0	nya

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 13 (cont)

Relative importance of cashless payment instrumentsPercentage of total volume of cashless transactions¹

	Direct debits					Card-based e-money				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^{a, b, c}	nav	nav	neg	neg	neg	nap	nap	nap	nap	nap
Belgium	10.2	11.8	11.2	9.8	nya	3.3	3.6	3.8	7.0	nya
Canada	7.5	7.5	7.8	7.9	8.0	nav	nav	nav	nav	nav
France	15.5	16.6	16.8	16.7	17.8	nap	nav	neg	0.1	0.1
Germany ^{2, 3}	37.8	37.5	37.0	35.8	39.3	0.2	0.2	0.2	0.3	0.3
Hong Kong SAR	18.3	18.5	19.7	20.0	19.8	nav	nav	nav	nav	nav
Italy	18.8	20.5	21.1	22.0	22.3	neg	neg	neg	neg	neg
Japan	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Netherlands ⁴	29.3	28.9	27.9	27.8	27.8	0.8	0.9	1.0	2.6	3.1
Singapore ⁵	6.3	5.6	5.8	3.2	2.5	27.8	32.4	31.3	74.1	85.3
Sweden	7.4	7.5	7.7	10.4	9.9	0.4	0.2	0.1	0.1	nya
Switzerland	3.5	5.3	5.5	5.4	5.3	1.2	2.1	2.3	2.2	2.0
United Kingdom	18.8	19.4	19.7	20.1	20.1	nav	nav	nav	nav	nav
United States ⁶	2.4	2.6	3.1	3.4	nya	nav	nav	nav	nav	nav

¹ Where the total is the sum of the available data.Sri Lanka: ^a Cheques: includes only those presented to LankaClear Pvt Ltd for interbank clearing. ^b There are no e-money schemes. ^c Total volume of cashless transactions for 1999 and 2000 relates to cheques only.Germany: ² Payments by credit cards: from 2000, the figure includes retailer card transactions. ³ Direct debits: debit card transactions are not included under this item but are shown under "Payments by credit/debit cards".Netherlands: ⁴ Payments by credit/debit cards include cards with a delayed debit function.Singapore: ⁵ Interbank transactions only. Payments by credit/debit cards exclude credit card transactions. Credit transfers include large-value transactions (MEPS).United States: ⁶ A Federal Reserve study of the cheque clearing system, published in August 2002, estimated that the number of cheques paid in the United States was 49,500 million in 1995 and 42,500 million in 2000. Values for other years are derived from these estimates.

Table 14

Relative importance of cashless payment instrumentsPercentage of total value of cashless transactions¹

	Cheques					Payments by credit/debit cards					Credit transfers				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^{a, b, c}	nav	nav	58.5	64.3	72.7	nav	nav	0.4	0.5	0.6	nav	nav	41.1	35.2	26.6
Belgium	0.6	0.5	0.6	0.7	nya	0.1	0.2	0.2	0.2	nya	98.9	99.0	99.0	98.7	nya
Canada	21.5	14.5	12.7	11.8	8.6	0.5	0.6	0.5	0.6	0.7	77.5	84.4	86.1	86.8	89.9
France	2.9	2.9	2.3	2.4	2.4	0.2	0.2	0.2	0.2	0.2	96.2	96.2	96.8	96.7	96.7
Germany ^{2, 3}	3.8	3.2	2.7	2.3	2.0	0.3	0.4	0.4	0.4	0.5	83.1	85.6	84.7	85.4	86.8
Hong Kong SAR	93.2	93.1	90.6	89.5	90.3	nav	nav	nav	nav	nav	6.0	6.1	8.4	9.4	8.7
Italy	3.7	3.2	2.9	3.1	3.1	0.1	0.1	0.2	0.2	0.2	94.6	95.1	95.1	94.6	94.2
Japan	2.7	2.5	3.4	2.9	nya	neg	0.1	0.1	0.1	nya	97.2	97.4	96.5	97.0	nya
Netherlands ⁴	0.1	0.1	neg	neg	neg	1.4	1.4	1.4	1.5	1.5	93.0	93.3	93.6	93.2	93.2
Singapore ⁵	5.1	4.7	3.6	3.8	3.8	0.2	0.2	0.2	0.2	0.2	94.6	95.0	96.1	95.8	95.7
Sweden	0.3	0.2	0.2	0.2	0.2	1.9	2.2	2.9	5.4	5.1	95.2	94.8	94.1	90.8	90.7
Switzerland	neg	0.1	neg	neg	neg	0.1	0.1	0.1	0.1	0.1	99.8	99.7	99.7	99.7	99.7
United Kingdom	3.2	2.9	2.6	2.6	2.4	0.2	0.2	0.2	0.3	0.3	96.7	96.1	96.4	96.3	96.5
United States ⁶	5.6	5.4	4.9	4.9	nya	0.2	0.3	0.3	0.3	nya	93.0	93.2	93.8	93.7	nya

Note: For the footnotes, see the end of the table. Please refer to the individual country tables for a detailed explanation.

Table 14 (cont)

Relative importance of cashless payment instrumentsPercentage of total value of cashless transactions¹

	Direct debits					Card-based e-money				
	1999	2000	2001	2002	2003	1999	2000	2001	2002	2003
Sri Lanka ^{a, b, c}	nav	nav	neg	neg	neg	nap	nap	nap	nap	nap
Belgium	0.3	0.3	0.3	0.3	nya	neg	neg	neg	neg	nya
Canada	0.5	0.5	0.6	0.8	0.8	nav	nav	nav	nav	nav
France	0.7	0.8	0.7	0.8	0.7	nap	nav	neg	neg	neg
Germany ^{2, 3}	12.8	10.8	12.1	11.8	10.7	neg	neg	neg	neg	neg
Hong Kong SAR	0.8	0.8	1.0	1.1	1.0	nav	nav	nav	nav	nav
Italy	1.6	1.6	1.9	2.1	2.4	neg	neg	neg	neg	neg
Japan	nav	nav	nav	nav	nav	nav	nav	nav	nav	nav
Netherlands ⁴	5.5	5.3	5.0	5.2	5.3	neg	neg	neg	neg	neg
Singapore ⁵	0.2	0.2	0.2	0.3	0.3	neg	neg	neg	neg	neg
Sweden	2.5	2.7	2.9	3.7	3.9	neg	neg	neg	neg	nya
Switzerland	0.1	0.2	0.2	0.2	0.2	neg	neg	neg	neg	neg
United Kingdom	0.8	0.8	0.7	0.8	0.9	nav	nav	nav	nav	nav
United States ⁶	1.2	1.1	1.1	1.1	nya	nav	nav	nav	nav	nav

¹ Where the total is the sum of the available data.Sri Lanka: ^a Cheques: includes only those presented to LankaClear Pvt Ltd for interbank clearing. ^b There are no e-money schemes. ^c Total value of cashless transactions for 1999 and 2000 relates to cheques only.Germany: ² Payments by credit cards: from 2000, the figure includes retailer card transactions. ³ Direct debits: debit card transactions are not included under this item but are shown under "Payments by credit/debit cards".Netherlands: ⁴ Payments by credit/debit cards include cards with a delayed debit function.Singapore: ⁵ Interbank transactions only. Payments by credit/debit cards exclude credit card transactions. Credit transfers include large-value transactions (MEPS).United States: ⁶ A Federal Reserve study of the cheque clearing system, published in August 2002, estimated that the number of cheques paid in the United States was 49,500 million in 1995 and 42,500 million in 2000. Values for other years are derived from these estimates.

Table 15

Features of selected interbank funds transfer systems

End of 2003, unless otherwise noted

	Type ¹	Owner/manager ²	Number of participants		Processing ³	Settlement ⁴	Membership ⁵
			Total	Of which: direct			
Sri Lanka							
The RTGS system ^a	L	CB	32	32	RTT	RTGS	O
LankaClear cheque clearing system	R	PA	23	23	M	N	O
Sri Lanka Interbank Payment System (SLIPS)	R	PA	23	23	ACH	N	O
Local cheque clearing	R	CB	12	12	M	N	O
US dollar cheque clearing system ^b	R	PA	16	16	M	N	O
Belgium							
ELLIPS	L	B+CB	89	16	RTT	RTGS	RM
Clearing House	R	B+CB	88	32	RTT	N	O
CEC	R	B+CB	89	28	RTT	N	O
Canada							
LVTS	L	PA	14	14	RTT	N	O
France							
CH Paris ⁹	nap	nap	nap	nap	nap	nap	nap
CH Province ⁹	nap	nap	nap	nap	nap	nap	nap
CREIC ⁹	nap	nap	nap	nap	nap	nap	nap
SIT	R	CB+B/PA	640	15	ACH	N	O
TBF	L	CB	523	156	RTT	RTGS	O
PNS	L	CB+B/PA	512	21	RTT	BN/RTGS	RM
Germany							
RPS (former DTA)	R	CB	2,075	2,075	ACH	GS	O
RTGS ^{plus}	L	CB	8,505	93	RTT	RTGS	RM

Note: For the footnotes, see the end of the table.

Table 15 (cont)

Features of selected interbank funds transfer systems

End of 2003, unless otherwise noted

	Type ¹	Owner/manager ²	Number of participants		Processing ³	Settlement ⁴	Membership ⁵
			Total	Of which: direct			
Hong Kong SAR							
HKD CHATS	L+R	CMA ¹⁰	130	130	RTT	RTGS	RM
USD CHATS	L+R	B	227	67	RTT	RTGS	O
EUR CHATS ¹¹	L+R	B	45	23	RTT	RTGS	O
Italy							
BI-REL	L	CB	787	204	RTT	RTGS	RM
Local clearing	R	CB	nav	105	RTT ¹⁴	N	O
Retail	R	CB ¹⁵	nav	157	ACH	N	O
Japan							
Zengin System	R	B	1,678	149	RTT	N	RM
FXYCS	L	B	196	34 ¹⁶	RTT	N/RTGS	RM
BOJ-NET Funds Transfer System	L	CB	371	371	RTT	RTGS	RM
Netherlands							
Interpay	R	B	73	73	ACH	N	RM
TOP	L	CB	155	106	RTT	RTGS	RM
Singapore							
SGDCCS	R	PA	61	34	ACH	N	O
USDCCS	R	PA	43	31	ACH	GS	O
Interbank GIRO	R	PA	38	35	ACH	N	O
EFTPOS	R	B	4	4	RTT	N	RM
MEPS	L	CB	117	70	RTT	RTGS	O
Sweden							
K-RIX	L	CB	19	19	RTT	RTGS	RM
E-RIX	L	CB	13	13	RTT	RTGS	RM
Bankgirot	R	B	18	18	ACH	N	O
Dataclearing	R	B	18	18	ACH	N	O
Postgirot ²²	R	B	1,200,000	1,200,000	ACH	GS	O

Note: For the footnotes, see the end of the table.

Table 15 (cont)

Features of selected interbank funds transfer systems

End of 2003, unless otherwise noted

	Type ¹	Owner/manager ²	Number of participants		Processing ³	Settlement ⁴	Membership ⁵
			Total	Of which: direct			
Switzerland							
SIC	L+R	B+CB	307	307	RTT	RTGS	O ²⁴
DTA/LSV	R	B	82	82	ACH	GS	O ²⁴
United Kingdom							
CHAPS Sterling	L	B+CB	nav	13	RTT	RTGS	RM
CHAPS Euro ²⁶	L	B+CB	nav	19	RTT	RTGS	RM
BACS	R	B	62,000 ²⁷	14	ACH	N	RM
Cheque/credit	R	B	404	12	M	N	RM
United States							
Fedwire	L	CB	7,736 ³⁰	7,736 ³⁰	RTT	RTGS	O ³¹
CHIPS ²⁹	L	B	51	51	RTT	N/BN/GS	RM
European Union							
EURO1	L	B	73	73	RTT	SOS ³²	RM
TARGET ³³	L	CB	10,499	1,059	RTT	RTGS	RM

Note: For the footnotes, see the end of the table.

Table 15 (cont)

Features of selected interbank funds transfer systems

End of 2003, unless otherwise noted

	Centralised/ decentralised ⁶	Prices charged to participants ⁷	Closing time for same day transactions (local time)	Annual number of transactions (thousands)		Annual value of transactions (USD billions) ⁸		Ratio of transactions value to GDP	
				2002	2003	2002	2003	2002	2003
Sri Lanka									
The RTGS system ^a	C	F	16:00	nap	38	nap	44	nap	2.4
LankaClear cheque clearing system	C	F	nap	35,487	36,483	26	28	1.5	1.5
Sri Lanka Interbank Payment System (SLIPS)	C	F	nap	1,609	2,017	14	10	0.8	0.6
Local cheque clearing	D	N	nap	1,356	1,342	0.5	0.5	0.03	0.03
US dollar cheque clearing system ^b	C	F	nap	17	86	0.02	0.1	neg	neg
Belgium									
ELLIPS	C	F	18:00	1,730	1,760	12,573	15,306	51.3	50.7
Clearing House	D	V	15:00	1,730	1,570	71	74	0.3	0.2
CEC	C	F	15:00	985,400	1,019,030	500	623	2.0	2.1
Canada									
LVTS	C	F	18:30	3,903	4,139	18,444	22,517	25.1	25.9
France									
CH Paris ⁹	nap	nap	nap	93,303	nap	173	nap	0.1	nap
CH Province ⁹	nap	nap	nap	53,640	nap	22	nap	neg	nap
CRE ⁸	nap	nap	nap	4,316	nap	neg	nap	neg	nap
SIT	C	F	13:30	11,043,476	11,298,210	4,187	5,273	2.9	3.0
TBF	C	F	18:00	3,814	3,864	85,660	108,746	59.8	61.6
PNS	C	F	16:00	7,571	7,332	18,820	20,294	13.1	11.5

Note: For the footnotes, see the end of the table.

Table 15 (cont)

Features of selected interbank funds transfer systems

End of 2003, unless otherwise noted

	Centralised/ decentralised ⁶	Prices charged to participants ⁷	Closing time for same day transactions (local time)	Annual number of transactions (thousands)		Annual value of transactions (USD billions) ⁸		Ratio of transactions value to GDP	
				2002	2003	2002	2003	2002	2003
Germany									
RPS (former DTA)	C	F	07:00	2,156,752	2,188,339	1,991	2,372	1.0	1.0
RTGS ^{plus}	C	F	18:00	31,893	32,792	117,621	145,115	59.1	60.4
Hong Kong SAR									
HKD CHATS	C	F	17:30 ¹²	3,418	3,508	10,536	11,207	65.9	71.3
USD CHATS	C	F	17:30	814	999	1,274	1,236	8.0	7.9
EUR CHATS ¹¹	C	F	17:30	nap	5	nap	135 ¹³	nap	0.9 ¹³
Italy									
BI-REL	C	F	18:00	9,612	9,423	23,706	27,953	20.0	19.0
Local clearing	C	V	12:00	102,698	97,907	685	790	0.6	0.5
Retail	C	F	nap	1,630,549	1,710,888	1,763	2,416	1.5	1.6
Japan									
Zengin System	C	F	15:30	1,244,520	1,260,780	17,810	18,909	4.5	4.4
FXYS	C	F	13:45(N)/19:00(G) ¹⁷	9,238	8,016	48,887	41,567	12.3	9.7
BOJ-NET Funds Transfer System	C	V ¹⁸	19:00 ¹⁷	4,788	4,925	143,988	161,914	36.2	37.7
Netherlands									
Interpay	C	F	17:00	2,812,350	2,964,946	1,577	2,007	3.8	3.9
TOP	C	F	18:00	4,548	4,717	19,609	24,119	46.8	46.4
Singapore									
SGDCCS	C	V	17:00 ¹⁹	90,283	87,014	212	211	2.4	2.3
USDCCS	C	V	15:30	443	553	11	14	0.1	0.1
Interbank GIRO	C	V	12:00 ²⁰	45,980	62,400	51	62	0.6	0.7
EFTPOS	C	V	23:59	97,202	105,844	3	4	neg	neg
MEPS	C	V	18:30 ²¹	2,037	2,132	5,604	5,658	64.4	61.9

Note: For the footnotes, see the end of the table.

Table 15 (cont)

Features of selected interbank funds transfer systems

End of 2003, unless otherwise noted

	Centralised/ decentralised ⁶	Prices charged to participants ⁷	Closing time for same day transactions (local time)	Annual number of transactions (thousands)		Annual value of transactions (USD billions) ⁸		Ratio of transactions value to GDP	
				2002	2003	2002	2003	2002	2003
Sweden									
<i>K-RIX</i>	C	F	17:00	1,100	1,302	11,731	13,900	48.6	46.1
<i>E-RIX</i>	C	F	18:00	100	93	1,383	2,141	5.7	7.1
<i>Bankgirot</i>	C	F	<i>nap</i> ²³	363,000	382,000	416	523	1.7	1.7
<i>Dataclearing</i>	C	F	<i>nap</i> ²³	73,000	109,000	124	229	0.5	0.8
<i>Postgirot</i> ²²	C	F	<i>nap</i> ²³	127,000	65,000	123	89	0.5	0.3
Switzerland									
<i>SIC</i>	C	F	16:15	177,000	192,700	28,767	33,202	103.8	103.1 ²⁵
<i>DTA/LSV</i>	C	F	09:00	103,300	100,100	229	253	0.8	0.8 ²⁵
United Kingdom									
<i>CHAPS Sterling</i>	C	F	17:00	25,563	27,215	77,863	84,267	49.7	46.9
<i>CHAPS Euro</i> ²⁶	C	F	17:00	3,664	4,292	28,200	35,227	18.0	19.6
<i>BACS</i>	C	F	<i>nap</i> ²⁸	3,734,774	4,060,356	3,574	4,200	2.3	2.3
<i>Cheque/credit</i>	D	F	<i>nap</i> ²⁸	1,817,000	1,704,476	2,170	2,209	1.4	1.2
United States									
<i>Fedwire</i>	C	F	18:30	115,000	123,300	405,762	436,706	38.7	39.7
<i>CHIPS</i> ²⁹	C	F	17:00	63,300	64,500	315,709	326,561	30.1	29.7
European Union									
<i>EURO1</i>	C	F	16:00	34,401	38,852	45,241	50,501	<i>nap</i>	<i>nap</i>
<i>TARGET</i> ³³	D	F	18:00	64,519	66,608	372,924	474,993	<i>nap</i>	<i>nap</i>

Note: For the footnotes, see the end of the table.

Table 15 (cont)

Features of selected interbank funds transfer systems

End of 2003, unless otherwise noted

¹ L = large-value system; R = retail system. ² B = bank(s); CB = central bank(s); PA = payment association. ³ M = manual; ACH = automated clearing house (offline); RTT = real-time transmission. ⁴ N = multilateral netting; BN = bilateral netting; RTGS = real-time gross settlement; GS = other gross settlement. ⁵ O = open membership (any bank can apply); RM = restricted membership (subject to criteria). ⁶ C = centralised (one processing centre where all settlement instructions are processed and accounts settled); D = decentralised (presence of more than one such processing centre). ⁷ F = full cost (including investments); V = variable costs; S = symbolic cost (below variable cost); N = no cost. ⁸ Converted at yearly average exchange rates.

Sri Lanka: ^a RTGS operations commenced in September 2003. ^b US Dollar Cheque Clearing System commenced in October 2002.

France: ⁹ Closed during 2002.

Hong Kong SAR: ¹⁰ Central Monetary Authority. ¹¹ Introduced on 28 April 2003. ¹² 12:00 on Saturdays. ¹³ From 28 August to 31 December 2003.

Italy: ¹⁴ Transactions can also be submitted on floppy disk. ¹⁵ System managed by SIA (Interbank Company for Automation) in the name and on behalf of the Bank of Italy.

Japan: ¹⁶ CLS is counted as a direct participant in this table. ¹⁷ Only for participants who made an application for extension of the closing time; for other participants, closing time is 17:00.

¹⁸ Prices are set on the principle that the institutions that are to benefit from online processing should pay the relevant fees.

Singapore: ¹⁹ 13:30 on Saturdays. ²⁰ 09:00 on Saturdays. ²¹ 14:45 on Saturdays.

Sweden: ²² The Postgirot system was purchased by a Swedish bank in the course of 2002. ²³ No same day transactions.

Switzerland: ²⁴ With restriction criteria for remote members. ²⁵ Provisional.

United Kingdom: ²⁶ Volume and value figures include both domestic and outward cross-border (TARGET) payments. ²⁷ Estimated. ²⁸ No same day transactions.

United States: ²⁹ CHIPS, the Clearing House Interbank Payments System, is operated by CHIPCo, which is owned by the Clearing House (formerly known as the New York Clearing House Association). ³⁰ Number of depository institutions that used the Fedwire Funds Transfer Service in 2003. Other Fedwire Funds Transfer participants not included here are: the US Treasury and any entity specifically authorised by federal statute to use the Reserve Banks as fiscal agents or depositories; entities designated by the Secretary of the Treasury; foreign central banks, foreign monetary authorities, foreign governments and certain international organisations. ³¹ Any depository institution, including a US branch or agency of a foreign bank, may maintain an account with a Federal Reserve Bank. To obtain an account, an institution must execute an account agreement pursuant to Operating Circular 1 (Account Relationships), which outlines the terms and conditions for a master account. An institution with an account at a Federal Reserve Bank may access Fedwire subject to the conditions detailed in Federal Reserve Operating Circular 6 and the Federal Reserve Board's Policy Statement on Payment System Risk.

European Union: ³² The legal structure of EURO1 is based on the Single Obligation Structure (SOS), whereby on each settlement day, at any given time, each participant will have only one single payment obligation or claim with respect to the community of the other participants as joint creditors/debtors, which will be settled at the end of the day. In accordance with the SOS, no bilateral payments, claims or obligations between participants will be created by the processing of payments in the system. Nor will there be any form of setoff, novation or netting resulting from the continuous adjustment of the participants' single claim or obligation. ³³ TARGET consists of the national RTGS systems of the 12 euro area countries and of the ECB payment mechanism. In addition, the national euro RTGS systems of Denmark, Sweden and the United Kingdom are also connected to TARGET. The figure for TARGET participants is based on a survey of direct and indirect participants. The indirect TARGET participants (9,440 in 2003) are mainly concentrated in Germany (89.1%) and comprise to a large extent branches of large direct participants in RTGS^{plus}.

Table 16
Operating hours of selected large-value interbank funds transfer systems
 End of 2003

System	Gross or net	Opening/closing time for same day value (local time)	Settlement finality (local time)	Cutoff for all third- party payment orders (local time)	Cutoff for international correspondents' payment orders (local time)	<i>Memo:</i> <i>Standard money market hours (local time)</i>
Sri Lanka <i>The RTGS system</i>	<i>Gross</i>	<i>08:00-16:00</i>	<i>real-time</i>	<i>15:00</i>	<i>nap</i>	<i>08:00-16:00</i>
Belgium <i>ELLIPS</i>	<i>Gross</i>	<i>07:00-18:00</i>	<i>real-time</i>	<i>17:00</i>	<i>18:00</i>	<i>07:00-18:00</i>
Canada ¹ <i>LVTS</i>	<i>Net</i>	<i>01:00-18:30²</i>	<i>intraday³</i>	<i>18:00</i>	<i>18:00</i>	<i>nap⁴</i>
France <i>TBF</i>	<i>Gross</i>	<i>07:00-18:00</i>	<i>real-time</i>	<i>17:00</i>	<i>nap</i>	<i>09:00-17:00</i>
<i>PNS</i>	<i>Gross/Net</i>	<i>08:00-16:00</i>	<i>real-time</i>	<i>16:00</i>	<i>nap</i>	<i>09:00-17:00</i>
Germany <i>RTGS^{plus}</i>	<i>Gross</i>	<i>07:00-18:00</i>	<i>real-time</i>	<i>17:00</i>	<i>nap</i>	<i>07:30-18:00</i>
Hong Kong SAR <i>HKD CHATS</i>	<i>Gross</i>	<i>09:00-17:30⁵</i>	<i>real-time⁵</i>	<i>17:00</i>	<i>17:30</i>	<i>09:00-17:30</i>
<i>USD CHATS</i>	<i>Gross</i>	<i>09:00-17:30</i>	<i>real-time</i>	<i>17:00</i>	<i>17:30</i>	<i>09:00-17:30</i>
<i>EUR CHATS⁶</i>	<i>Gross</i>	<i>09:00-17:30</i>	<i>real-time</i>	<i>17:00</i>	<i>17:30</i>	<i>09:00-17:30</i>
Italy <i>BI-REL</i>	<i>Gross</i>	<i>07:00-18:00</i>	<i>real-time</i>	<i>17:00</i>	<i>nap</i>	<i>07:00-18:00</i>
Japan <i>FXYS⁷</i>	<i>Net</i>	<i>09:00-13:45</i>	<i>14:30</i>	<i>13:45</i>	<i>13:45</i>	<i>08:30-19:00</i>
	<i>Gross</i>	<i>09:00-19:00</i>	<i>real-time</i>	<i>19:00</i>	<i>19:00</i>	<i>08:30-19:00</i>
<i>BOJ-NET Funds Transfer System⁸</i>	<i>Gross</i>	<i>09:00-19:00</i>	<i>real-time</i>	<i>14:00⁹</i>	<i>14:00⁹</i>	<i>08:30-19:00</i>
Netherlands <i>TOP</i>	<i>Gross</i>	<i>07:00-18:00</i>	<i>real-time</i>	<i>17:00</i>	<i>17:00</i>	<i>07:00-18:00</i>

Note: For the footnotes, see the end of the table.

Table 16 (cont)
Operating hours of selected large-value interbank funds transfer systems
 End of 2003

System	Gross or net	Opening/closing time for same day value (local time)	Settlement finality (local time)	Cutoff for all third-party payment orders (local time)	Cutoff for international correspondents' payment orders (local time)	<i>Memo: Standard money market hours (local time)</i>
Singapore <i>MEPS</i>	<i>Gross</i>	<i>09:00-18:30</i> ^{10, 11}	<i>09:00-18:30</i> ¹¹	<i>18:30</i> ^{12, 13}	<i>18:30</i> ^{12, 13}	<i>09:00-18:30</i> ¹¹
Sweden <i>K-RIX</i>	<i>Gross</i>	<i>07:00-17:00</i>	<i>real-time</i>	<i>17:00</i>	<i>17:00</i>	<i>09:00-16:15</i>
<i>E-RIX</i>	<i>Gross</i>	<i>07:00-18:00</i>	<i>real-time</i>	<i>17:00</i>	<i>18:00</i>	<i>09:00-16:15</i>
Switzerland <i>SIC</i>	<i>Gross</i>	<i>17:00-16:15</i> ¹⁴	<i>real-time</i>	<i>15:00</i>	<i>08:00</i>	<i>09:00-16:00</i>
United Kingdom <i>CHAPS Sterling</i>	<i>Gross</i>	<i>06:00-17:00</i>	<i>real-time</i>	<i>16:00</i>	<i>16:00</i>	<i>07:00-16:00</i>
<i>CHAPS Euro</i>	<i>Gross</i>	<i>06:00-17:00</i>	<i>real-time</i>	<i>16:00</i>	<i>16:00</i>	-
United States ¹⁵ <i>Fedwire</i>	<i>Gross</i>	<i>00:30-18:30</i>	<i>real-time</i>	<i>18:00</i>	<i>17:00</i>	<i>08:30-18:30</i> ¹⁶
<i>CHIPS</i>	<i>Gross/Net</i>	<i>00:30-17:00</i>	<i>intraday</i> ¹⁷	<i>16:30</i>	<i>16:30</i>	<i>08:30-18:30</i> ¹⁶
European Union <i>EURO1</i>	<i>Net</i>	<i>07:30-16:00</i>	<i>after 16:00</i>	<i>16:00</i>	<i>16:00</i>	<i>07:00-18:00</i>
<i>TARGET</i>	<i>Gross</i>	<i>07:00-18:00</i>	<i>real-time</i>	<i>17:00</i>	<i>nap</i>	<i>07:00-18:00</i>

Canada: ¹ Local times are Eastern time. ² The initialisation period for collateral pledging/valuation, setting of bilateral limits, etc begins at 00:30. The payment message exchange period begins at 08:00. ³ Final settlement occurs at 19:30. However, due to the risk controls in place, the LVTS provides intraday settlement finality. ⁴ No standard hours.

Hong Kong SAR: ⁵ To 12:00 on Saturdays. ⁶ Introduced on 28 April 2003.

Japan: ⁷ Closing time for gross settlement is 19:00 for participants who have applied for an extension, and 17:00 for others. ⁸ Closing time is 19:00 for participants who have applied for an extension, and 17:00 for others. ⁹ With the consent of the receiver, payment orders may be entered for same day settlement until the closing time of the system.

Singapore: ¹⁰ MEPS accepts forward-dated transactions from 06:00 to 20:00 on Mondays-Fridays and from 06:00 to 15:00 on Saturdays. ¹¹ To 14:45 on Saturdays. ¹² 14:45 on Saturdays. ¹³ MEPS does not impose a cutoff time for third-party/international correspondents' payments, but the Association of Banks in Singapore (ABS) bye-laws on MEPS require all such payments to be made by 17:30 on Mondays-Fridays and 12:30 on Saturdays.

Switzerland: ¹⁴ The system is open for input 24 hours a day. Settlement services are limited by the indicated opening and closing times. A value day starts at 17:00 local time on the previous business day and ends at 16:15 on the value day. Third-party payments may be entered for same day settlement until 15:00. Between 15:00 (cutoff 1) and 16:00 (cutoff 2) only cover (bank-to-bank) payments are accepted for same day settlement. From 16:00 to 16:15 transactions are restricted to the processing of lombard credits (collateralised loans from the Swiss National Bank at a penalty rate).

United States: ¹⁵ Local times are Eastern time. ¹⁶ Trading occurs among dealers for funds on deposit at Federal Reserve Banks (ie federal funds) as early as 06:30. ¹⁷ Payments over CHIPS become final on completion of settlement, which occurs throughout the day.

Table 17

Features of selected securities settlement systems

End of 2003

Name of system	Sri Lanka		Belgium			Canada
	Lanka Secure System ^a	CDS	NBB SSS	Euronext-CIK	Euroclear ⁷	CDSX ⁸
Type of securities ¹	G	B, E	G, O	E, O	B, C, G, E, O	B, G, E, O
Owner/manager ²	CB	SE	CB	B	B	B, SE, O
Number of participants	32	32	109	93	1,538	98
<i>Of which: direct participants</i>	32	32	109	93	1,538	6
Settlement of cash leg ³	RTGS	N	G	G	G	N
Securities settlement (delivery) ³	RTGS	G	G	N	G	G
Delivery lag (T+n)	T+0	T+1, T+6	T+2, T+3 ⁶	T+3	T+3, T+n (OTC)	T+0, T+1, T+3 ⁹
DVP mechanism	DVP1	DVP2/DVP3 ^b	DVP1	DVP1	DVP1	DVP2
Intraday finality	Yes	No	Yes	Yes	Yes	Yes
Central securities depository	SSDS	CDS	NBB	CIK	Euroclear (eurobonds)	CDS
Cash settlement agent ²	CB	B	NBB	NBB	Euroclear/NBB	CB
Annual number of transactions (thousands)	nap	2	175	353	22,000	39,200
Annual value of transactions (USD billions) ⁴	nap	0.8	4,099	85	133,300	29,011
Ratio of transactions value to GDP	nap	0.04	13.6	0.3	441.5	33.4

Notes: For the footnotes, see the end of the table.

Table 17 (cont)
Features of selected securities settlement systems
 End of 2003

Name of system	France		Germany	Hong Kong SAR		Italy		
	RGV	RELIT	Clearstream Banking Frankfurt (CBF)	CCASS	CMU	LDT	EXPRESS ¹⁵	Monte Titoli
Type of securities ¹	B, C, G, O, E		B, G, E, O	E, O	G, O	B, G, E, O	B, G, E, O	B, G, E, O
Owner/manager ²	Euroclear France		SE	SE	CMA ¹²	CB	Monte Titoli	Monte Titoli
Number of participants	630 ¹⁰		411	529	157 ¹³	212	153	1,869
<i>Of which: direct participants</i>	330 ¹⁰		411	529	157 ¹³	212	153	473 ¹⁶
Settlement of cash leg ³	RTGS	N	RTGS, N	G/N	G/N	N	RTGS	nap
Securities settlement (delivery) ³	RTGS	G	RTGS, G	G/N	G/N	N	RTGS	RTGS
Delivery lag (T+n)	from T to T+100	from T to T+30	T+0 to T+40	T+2	T+0	G, B: T+3 ¹⁴ E, O: T+5	From T to T+n	T
DVP mechanism	DVP1	DVP2	DVP1 DVP2/DVP3 ¹¹	DVP1/DVP3	DVP1/DVP3	DVP3	DVP1	nap
Intraday finality	Yes	Yes	Yes	No	Yes	No	Yes	Yes
Central securities depository	Euroclear France		CBF	CCASS	CMU	Monte Titoli	Monte Titoli	Monte Titoli
Cash settlement agent ²	CB		CB	B	CMA ¹²	CB	CB	nap
Annual number of transactions (thousands)	27,812 ¹⁰		45,592	33,772	34	34,209	119	1,630 ¹⁷
Annual value of transactions (USD billions) ⁴	59,361 ¹⁰		16,147	1,139	672	39,128	1,431	nav
Ratio of transactions value to GDP	33.7 ¹⁰		6.7	7.2	4.3	26.6	1.0	nav

Note: For the footnotes, see the end of the table.

Table 17 (cont)

Features of selected securities settlement systems

End of 2003

	Japan		Netherlands	Singapore		
Name of system	BOJ-NET JGB Services	JASDEC ¹⁹	Euroclear Netherlands ²³	CDP	DCSS	MEPS-SGS
Type of securities ¹	G	E, O ²⁰	B, G, E	E, O	B	G
Owner/manager ²	CB	B, SE, O	Euroclear	SE	SE	CB
Number of participants	341 (Book-entry System) / 370 (Registration System)	275	80			
<i>Of which: direct participants</i>	341/370	275	80			
Settlement of cash leg ³	RTGS	N/G	RTGS	N	G	RTGS
Securities settlement (delivery) ³	RTGS	N/G	RTGS	G	G	G
Delivery lag (T+n)	T+0 to T+3 ¹⁸	T+3/T+1, T+2 ²¹	T+3	T+3	T+n ²⁵	T+1
DVP mechanism	DVP1	DVP3/ DVP1 ²²	DVP1	DVP2	DVP1	DVP1
Intraday finality	Yes	Yes	Yes	Yes	Yes	Yes
Central securities depository	CB	JASDEC	Euroclear Netherlands ²³	CDP	CDP	CB
Cash settlement agent ²	CB	CB, B	CB, B	B	CB	CB
Annual number of transactions (thousands)	2,939/2	37,587	3,072	217,657,000 ²⁴	5	68
Annual value of transactions (USD billions) ⁴	101,038/4	nav	779	93	4	450
Ratio of transactions value to GDP	23.5/neg	nav	1.5	1.0	neg	4.9

Note: For the footnotes, see the end of the table.

Table 17 (cont)
Features of selected securities settlement systems
 End of 2003

Name of system	Sweden		Switzerland	United Kingdom	United States	
	Stockholmsbörsen	VPC	SECOM	CREST	NBES ²⁷	DTC
Type of securities ¹	O	G, E, O	B, G, E, O	B, C, G, E, O	G, O	B, C, E, O
Owner/manager ²	O	B, O	B, O	B, CB, SE, O	CB	B, SE, O
Number of participants	79	44		38,054	1,667 ²⁸	436
<i>Of which: direct participants</i>	79	44		<i>nap</i>	1,667 ²⁸	436
Settlement of cash leg ³	N	G/N	G	RTGS	RTGS	N
Securities settlement (delivery) ³	N	G	G	RTGS	RTGS	G
Delivery lag (T+n)	T+3	T+2, T+3	T+3	from T+0 to T+3	T, T+1 ²⁹	T, T+3 ³⁰
DVP mechanism	No	Yes	DVP1	DVP1	DVP1	DVP2
Intraday finality	Yes	Yes	Yes	Yes	Yes	No
Central securities depository	OM	VPC	SIS SegalInterSettle	<i>nap</i>	CB	DTC
Cash settlement agent ²	CB	CB	CB	B, CB	CB	CB
Annual number of transactions (thousands)	91,952	10,277	18,800	63,800	20,400	225,200
Annual value of transactions (USD billions) ⁴	303	10,802	6,425	95,159	267,644	105,700
Ratio of transactions value to GDP	1.0	35.8	19.9 ²⁶	53.0	24.3	9.6

Note: For the footnotes, see the end of the table.

Table 17 (cont)

Features of selected securities settlement systems

End of 2003

¹ B = bonds; C = CDs; G = government securities; E = equity; O = other. ² B = bank(s); CB = central bank(s); SE = stock exchange; O = other. ³ G = gross; N = net; RTGS = real-time gross settlement. ⁴ Delivery Versus Payment mechanism. In DVP Model 1, transfer instructions for both securities and funds are settled on a trade by trade basis, with final transfer of securities from the seller to the buyer (delivery) occurring at the same time as final transfer of the funds from the buyer to the seller (payment). In DVP Model 2, securities transfer instructions are settled on a gross basis, with final transfer of securities from the seller to the buyer (delivery) occurring throughout the processing cycle, but funds transfer instructions are settled on a net basis, with final transfer of the funds from the buyer to the seller (payment) occurring at the end of the processing cycle. In DVP Model 3, transfer instructions for both securities and funds are settled on a net basis, with final transfer of both securities and funds occurring at the end of the processing cycle. ⁵ Converted at yearly average exchange rates.

Sri Lanka: ^a LankaSecure operations commenced in February 2004. ^b Mixture of DVP 2 and DVP 3 (equity transactions in ATS are settled on DVP 2 basis and transactions in DEX are settled on DVP 3 basis).

Belgium: ⁶ For Treasury bills, T+2; for bonds, T+3. ⁷ Figures for Euroclear refer to Euroclear Bank and not the EOC Group.

Canada: ⁸ During the course of 2003, the Securities Settlement Service (SSS) and Debt Clearing Service (DCS) were replaced by CDSX. ⁹ Although all securities have the potential for T+0 delivery, money market mutual funds tend to be T+1.

France: ¹⁰ RGV and RELIT combined.

Germany: ¹¹ Mixture of DVP 2 + DVP 3 (securities disposition on a gross basis without finality until final settlement of net cash position).

Hong Kong SAR: ¹² Central Monetary Authority. ¹³ Recognised dealer for Exchange Fund Bills and Notes.

Italy: ¹⁴ For government bills, T+2. ¹⁵ On 8 December 2003, Express II, offering gross and net functionalities, replaced RTGS Express. The data entered in the table refer only to the gross components. ¹⁶ Number of intermediaries. ¹⁷ Free of payment (FOP) transfers not including multilateral net balances from LdT.

Japan: ¹⁸ T+3 is the norm for outright transactions. Most repo transactions are settled on a T+2 or T+3 basis. Settlement for the BOJ's open market operations takes place on a T+0 to T+3 basis. ¹⁹ Figures as of end-March 2004. ²⁰ JASDEC started to handle commercial paper (CP) in March 2003. ²¹ Most CP transactions are settled on a T+1 or T+2 basis. ²² DVP 3 for stocks and DVP 1 for CP.

Netherlands: ²³ Formerly known as Necigef.

Singapore: ²⁴ Number of securities cleared. ²⁵ By mutual agreement between counterparties.

Switzerland: ²⁶ Provisional.

United States: ²⁷ NBES is the Federal Reserve's National Book-Entry System. ²⁸ Number of depository institutions that used the Federal Reserve's Securities Service in 2003. Other participants not included here are: the US Treasury and any entity specifically authorised by federal statute to use the Reserve Banks as fiscal agents or depositories; entities designated by the Secretary of the Treasury; foreign central banks, foreign monetary authorities, foreign governments and certain international organisations. ²⁹ Securities are settled on a same day basis within the Federal Reserve's National Book-Entry System. The market convention for the settlement of repurchase agreements is T+0. The convention for US Treasury securities is T+1. Other non-US Treasury securities have different conventions. ³⁰ The market convention for the settlement of corporate equities and bonds is T+3; for money market instruments, the convention is T.

Table 18
Direct participants in CPSS real-time gross settlement systems
 End of 2003

Name of system	Sri Lanka	Belgium	Canada	France	Germany ¹	Hong Kong SAR			Italy	Japan
	The RTGS system	ELLIPS	nap	TBF	RTGS ^{plus}	CHATS HKD	CHATS USD	CHATS EUR	BI-REL	BOJ-NET Funds Transfer System
Direct participants	32	16		156	93	130	67	23	204	371
Credit institutions	22	14		130	92	130	66	22	195 ²	315
Central bank	1	1		1	1	1 ¹	1	1	1	0
Non-banks	9	1		25	nap	0	0	0	8 ³	56 ⁴
<i>of which:</i>										
<i>public authorities</i>	1	0		nap					0	0
<i>postal administration</i>	0	1		1					1	1
<i>supervised financial institutions</i>	8	0		24					5	49

Note: For the footnotes, see the end of the table.

Table 18 (cont)

Direct participants in CPSS real-time gross settlement systems

End of 2003

	Netherlands	Singapore	Sweden		Switzerland	United Kingdom		United States	European Union
Name of system	TOP	MEPS	K-RIX	E-RIX	SIC	CHAPS Sterling	CHAPS Euro	Fedwire	TARGET ⁸
Direct participants	106	70	19	13	307	13	19	7,736 ⁷	1,059
Credit institutions	98	69 ⁶	14	8	297	12	18	7,736 ⁷	nav
Central bank	1	1	1	1	1	1	1	1	16
Non-banks	7 ⁵	0	4	4	9	0	0	nav	nav
<i>of which:</i>									
<i>public authorities</i>	2		<i>nap</i>	<i>nap</i>	1				
<i>postal administration</i>	0		<i>nap</i>	<i>nap</i>	1				
<i>supervised financial institutions</i>	1		4	4	7				

Hong Kong SAR: ¹ The central bank is not a direct participant.

Italy: ² Of which: 16 branches of other EU banks; seven branches of non-EU banks; two remote participants. ³ Includes Cassa Compensazione e Garanzia (clearing house) and Monte Titoli (Central Securities Depository).

Japan: ⁴ Includes clearing organisations.

Netherlands: ⁵ Includes four clearing and settlement organisations.

Singapore: ⁶ Includes CLS Bank.

United States: ⁷ Number of depository institutions that used the Fedwire Funds Transfer Service in 2003. Other Fedwire Funds Transfer participants not included here are: the US Treasury and any entity specifically authorised by federal statute to use the Reserve Banks as fiscal agents or depositories; entities designated by the Secretary of the Treasury; foreign central banks, foreign monetary authorities, foreign governments and certain international organisations.

Table 19
Direct participants in other CPSS large-value payment systems
 End of 2003

	Sri Lanka	Belgium	Canada	France	Germany	Hong Kong SAR	Italy	Japan
Name of system	nap ^a	nap	LVTS	PNS	nap	nap	nap ¹	FXYCS
Direct participants			14	21				34 ²
Credit institutions			13	16				34
Central bank			1	1				0
Non-banks			0	4				0
<i>of which:</i>								
<i>public authorities</i>				nap				
<i>postal administration</i>				1				
<i>supervised financial institutions</i>				nap				

	Netherlands	Singapore	Sweden	Switzerland	United Kingdom	United States	European Union
Name of system	nap	nap	nap	nap	nap	CHIPS	EURO1
Direct participants						51	73
Credit institutions						nav	71
Central bank						nav	2
Non-banks						nav	0 ³
<i>Of which:</i>							
<i>Public authorities</i>							
<i>Postal administration</i>							
<i>Supervised financial institutions</i>							

Sri Lanka: ^a The only large-value payment system in Sri Lanka is the RTGS system.

Italy: ¹ The only large-value payment system in Italy is BI-REL. For details, see Table 18.

Japan: ² CLS is counted as a direct participant in this table.

European Union: ³ With system operator EBA Clearing as a technical participant.

Table 20

Direct participants in CPSS retail interbank funds transfer systems

End of 2003

	Sri Lanka				Belgium		Canada	France	Germany
Name of system	LankaClear cheque clearing system	SLIPS	Local cheque clearing	US dollar cheque clearing system	Clearing House	CEC	ACSS	SIT	RPS
Direct participants	23	23	12	16	32	28	12	15	2,075
Credit institutions	22	22	12	16	29	24	11	13	2,074
Central bank	1	1	1	0	1	1	1	1	1
Non-banks	0	0	0	0	2	3	0	1	nap
<i>of which:</i>									
<i>public authorities</i>					1	2		nap	
<i>postal administration</i>					1	1		1	
<i>supervised financial institutions</i>					0	0		nap	

	Hong Kong SAR	Italy		Japan		Netherlands	Singapore		
Name of system	nap	BI-COMP		Zengin system	Tokyo Clearing House	Interpay	SGDCCS	IBG	EFTPOS
		Local clearing	Retail						
Direct participants		105	157	149	111	73	34	35	4
Credit institutions		102	154 ¹	149	109	73	33	35	4
Central bank		1	1	0	1	0	1	0	0
Non-banks		2	2	0	1	0	0	0	0
<i>of which:</i>									
<i>public authorities</i>		1	0	0	0				
<i>postal administration</i>		1	1	1	1				
<i>supervised financial institutions</i>		0	1	0	0				

Note: For the footnotes, see the end of the table.

Table 20 (cont)

Direct participants in CPSS retail interbank funds transfer systems

End of 2003

Name of system	Sweden			Switzerland	United Kingdom		United States
	Bankgirot	Dataclearing	Postgirot	DTA/LSV	BACS	Cheque and credit clearing	ACH
Direct participants	19	19	1,200,000	82	14	12	nav
Credit institutions	19	19	nap	82	13	11	
Central bank	nap	nap	nap	0	1	1	
Non-banks	nap	nap	1,200,000	0	0	0	
<i>of which:</i>							
<i>public authorities</i>	<i>nap</i>	<i>nap</i>	<i>1,200,000</i>				
<i>postal administration</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>				
<i>supervised financial institutions</i>	<i>nap</i>	<i>nap</i>	<i>nap</i>				

Italy: ¹ Of which: 14 branches of other EU banks and 5 branches of non-EU banks.

Table 21

Access criteria for CPSS real-time gross settlement systems

End of 2003

	Sri Lanka	Belgium	Canada	France	Germany	Hong Kong SAR	Italy	Japan
Name of system	The RTGS system	ELLIPS	nap	TBF	RTGS^{plus}	HKD CHATS	BI-REL	BOJ-NET Funds Transfer System
Access criteria	+	+		+	+	+	+	+
Written rules	+	+		+	+	+	+	+
Minimum level of data or ratios representative of financial strength	-	+		-	-	+	-	+
Minimum number of transactions	-	-		-	-	-	-	- ³
Payment of an entry fee	-	+		+	-	+	-	-
Approval from the owner/manager or the direct participants	+	+		+	+ ¹	+	+ ²	+ ⁴
Approval from the local central bank	+	+		+	+ ¹	+	+	+
Technical requirements	+	+		+	+	+	+	+
Removal rules	+	+		+	+	+	+	+

Note: For the footnotes, see the end of the table.

Table 21 (cont)

Access criteria for CPSS real-time gross settlement systems

End of 2003

Name of system	Netherlands	Singapore	Sweden		Switzerland	United Kingdom	United States
	TOP	MEPS	K-RIX	E-RIX	SIC	CHAPS Sterling/Euro	Fedwire
Access criteria	+	+	+	+	+	+	+
Written rules	+	+	+	+	+	+	+
Minimum level of data or ratios representative of financial strength	-	+	+	+	-	-	-
Minimum number of transactions	-	-	-	-	-	-	-
Payment of an entry fee	-	-	+	+	+	+	-
Approval from the owner/manager or the direct participants	+ ⁵	+ ⁶	+	+	+	+	+
Approval from the local central bank	+	+ ⁶	+	+	+	+	+
Technical requirements	+	+	+	+	+	+	+
Removal rules	+	+	+	+	+	+	+

Key: + = yes; - = no.

Germany: ¹ The owner/manager is the central bank.Italy: ² The owner/manager is the central bank.Japan: ³ To open a current account at the Bank of Japan, securities companies are required to meet certain standards on market presence set by the Bank of Japan. ⁴ The owner/manager is the central bank.Netherlands: ⁵ The owner/manager is the central bank.Singapore: ⁶ The owner/manager is the central bank. All banks are eligible to participate directly in MEPS; regulated non-banks of systemic importance may also seek approval from MAS to participate.

Table 22

Access criteria for other CPSS large-value payment systems

End of 2003

	Sri Lanka	Belgium	Canada	France	Germany	Hong Kong SAR	Italy	Japan
Name of system	nap^a	nap	LVTS	PNS	nap	CHAPS: USD and EUR	nap²	FXYCS
Access criteria			+	+		+		+
Written rules			+	+		+		+
Minimum level of data or ratios representative of financial strength			-	+		+		+
Minimum number of transactions			-	-		-		+
Payment of an entry fee			+	+		+ ¹		+
Approval from the owner/manager or the direct participants			+	+		+		+
Approval from the local central bank			-	+		+		+
Technical requirements			+	+		+ ¹		+
Removal rules			+	+		-		+

Note: For the footnotes, see the end of the table.

Table 22 (cont)

Access criteria for other CPSS large-value payment systems

End of 2003

	Netherlands	Singapore	Sweden	Switzerland	United Kingdom	United States	European Union
Name of system	nap	nap	nap	nap	nap	CHIPS	EURO1
Access criteria						+	+
Written rules						+	+
Minimum level of data or ratios representative of financial strength						+	+
Minimum number of transactions						-	-
Payment of an entry fee						+	+
Approval from the owner/ manager or the direct participants						+	+
Approval from the local central bank						-	-
Technical requirements						+	+
Removal rules						+	+

Key: + = yes; - = no.

Sri Lanka: ^a The only large-value payment system in Sri Lanka is the RTGS system.Hong Kong: ¹ Not applicable to indirect participants.Italy: ² The only large-value payment system in Italy is BI-REL. For details, see Table 21.

Table 23

Risk control measures in other CPSS large-value payment systems

End of 2003

	Sri Lanka	Belgium	Canada	France	Germany	Hong Kong SAR	Italy	Japan
Name of system	nap ^a	nap	LVTS	PNS	nap	nap	nap ⁸	FXYCS
1. Settlement in central banks' accounts			+	+				+
2. Same day settlement			+	+				+
3. Compliance with Lamfalussy standards			+	+				nap
a. Legal framework								
<i>Contractual (+) or advisory (-) netting</i>			+ ¹	+				
<i>If contractual: legally enforceable (+) or not (-)</i>			+	nap ⁵				
b. Participants' awareness			+	+				
c. Risk management								
<i>Monitoring of intraday balance</i>			+	nap ⁶				
<i>Multilateral limits</i>			+ ²	nap ⁶				
<i>Collateral requirements</i>			+	nap ⁶				
<i>Intraday closures</i>			+ ³	+				
d. Timely settlement completion			+	nap ⁵				
<i>Risk-sharing agreements</i>			+					
<i>Full collateralisation of largest net debit position</i>			+ ⁴	nap ⁶				
e. Fair open access			+	+				
f. Technical reliability			+	+				

Note: For the footnotes, see the end of the table.

Table 23 (cont)

Risk control measures in other CPSS large-value payment systems

End of 2003

	Netherlands	Singapore	Sweden	Switzerland	United Kingdom	United States	European Union
Name of system	nap	nap	nap	nap	nap	CHIPS	EURO1
1. Settlement in central banks' accounts						+ ⁹	+
2. Same day settlement						+	+
3. Compliance with Lamfalussy standards						+	+
a. Legal framework <i>Contractual (+) or advisory (-) netting</i>						+	nap ¹⁰
<i>If contractual: legally enforceable (+) or not (-)</i>						+	nap ¹⁰
b. Participants' awareness						+	+
c. Risk management <i>Monitoring of intraday balance</i>						+	+
<i>Multilateral limits</i>						-	+
<i>Collateral requirements</i>						-	+
<i>Intraday closures</i>						-	-
d. Timely settlement completion <i>Risk-sharing agreements</i>						-	+
<i>Full collateralisation of largest net debit position</i>						-	+
e. Fair open access						+	+
f. Technical reliability						+	+

Note: For the footnotes, see the end of the table.

Table 23 (cont)

Risk control measures in other CPSS large-value payment systems

End of 2003

Key: + = yes; – = no.

Sri Lanka: ^a The only large-value payment system in Sri Lanka is the RTGS system.

Canada: ¹ The LVTS employs multilateral netting by novation. Once the payment instruction passes the risk controls and is accepted by the system, the bilateral obligations are extinguished and replaced by a multilateral obligation vis-à-vis the system as a whole. ² The LVTS employs bilateral and multilateral limits. ³ Final settlement occurs at the end of the LVTS processing period. However, the risk control mechanisms of the LVTS ensure that, once a payment has passed the risk control mechanisms and been accepted by the system, it is certain to settle and irrevocable. Therefore, the LVTS provides intraday receiver finality. ⁴ The LVTS is certain to settle even if the defaulter with the largest net debit position defaults.

France: ⁵ PNS is a hybrid system; the legal and risk framework is comparable to that of the RTGS system. ⁶ PNS functions on the basis of positive balances, ie multilateral debit cap set to 0. ⁷ Continuous settlement mechanism.

Italy: ⁸ There are no large-value net settlement systems in Italy.

United States: ⁹ Since January 2001, CHIPS has been a real-time final settlement system that continuously matches, nets and settles payment orders. To facilitate this process, each CHIPS participant is required to transfer, via Fedwire, a pre-established opening position requirement to a CHIPS account at the Federal Reserve Bank of New York. Throughout the day, payment orders are settled with real-time finality on the books of CHIPS against positive positions, simultaneously offset by incoming payment orders, or both. At the end of the day, each participant with a final position requirement must transfer, via Fedwire, its requirement to the CHIPS account at the Federal Reserve Bank of New York.

European Union: ¹⁰ The system is based on a special legal arrangement, the Single Obligation Structure (SOS).

Table 24a
SWIFT traffic: intra-CPSS message flows in 2003
 Number of messages

From/to	Sri Lanka	Belgium	Canada	France	Germany	Hong Kong SAR	Italy	Japan
Sri Lanka	180,921	30,211	6,363	8,108	36,986	50,371	7,244	42,758
Belgium	12,811	16,878,934	476,263	10,458,808	7,369,169	1,168,184	5,968,498	1,888,972
Canada	14,050	561,533	6,206,671	508,465	585,067	409,447	176,347	397,653
France	14,809	4,592,124	418,369	27,608,030	6,516,117	663,097	3,230,707	833,503
Germany	82,041	4,554,919	490,982	6,834,498	49,015,448	756,718	6,020,407	1,073,467
Hong Kong SAR	42,928	719,252	497,739	440,671	678,674	4,447,420	252,738	2,609,889
Italy	12,408	2,537,035	151,125	3,191,791	5,465,338	302,384	15,533,170	370,057
Japan	31,004	1,746,326	330,910	1,127,918	1,389,807	2,175,178	483,657	9,119,303
Netherlands	20,692	5,630,294	191,021	4,557,364	5,915,532	295,952	1,213,069	324,883
Singapore	42,725	309,889	152,414	322,692	568,349	1,464,440	90,903	1,834,900
Sweden	11,153	1,128,859	78,438	618,445	1,617,245	124,385	355,526	118,512
Switzerland	31,168	2,285,304	524,755	3,387,693	7,490,234	581,754	1,473,931	1,013,139
United Kingdom	103,626	9,072,823	2,623,706	12,549,980	15,196,939	5,045,602	8,379,496	11,536,444
United States	344,696	6,574,386	5,007,059	8,481,525	9,924,359	10,040,851	4,670,321	12,159,588
Total all countries	1,408,320	112,652,453	23,738,135	107,578,688	182,602,168	35,194,825	63,858,558	50,039,014

Source: SWIFT.

Table 24a (cont)

SWIFT traffic: intra-CPSS message flows in 2003

Number of messages

From/to	Netherlands	Singapore	Sweden	Switzerland	United Kingdom	United States	All countries
Sri Lanka	9,680	70,487	3,713	10,051	103,211	434,530	1,417,455
Belgium	9,491,512	942,270	901,076	5,286,223	26,585,845	18,240,712	106,696,539
Canada	169,816	130,553	62,215	678,306	4,215,181	6,811,500	24,140,726
France	3,431,006	300,374	483,435	2,463,941	24,586,682	13,095,654	100,192,507
Germany	5,830,343	343,115	1,331,778	7,320,836	20,431,614	15,862,748	145,641,261
Hong Kong SAR	220,539	1,433,234	74,271	688,685	6,119,383	9,459,118	38,332,783
Italy	1,397,404	61,185	231,791	1,555,031	13,473,354	6,243,634	56,962,858
Japan	332,037	2,026,376	123,245	1,228,428	13,957,348	13,955,199	57,115,759
Netherlands	36,929,130	229,216	549,174	1,709,467	11,312,538	7,155,334	84,321,805
Singapore	233,712	2,840,103	78,139	511,192	3,369,979	5,040,470	21,305,579
Sweden	711,219	69,431	4,549,563	436,614	8,158,549	3,162,706	28,742,986
Switzerland	1,301,408	487,886	357,407	20,310,410	24,865,834	10,602,964	86,933,925
United Kingdom	7,843,598	2,192,339	4,173,511	15,583,653	111,238,776	45,972,674	290,919,193
United States	5,346,342	4,230,315	1,648,412	11,432,805	34,919,949	115,980,263	329,285,909
Total all countries	82,512,214	19,879,494	22,676,057	82,897,953	405,992,186	358,641,338	2,047,564,360

Source: SWIFT.

Table 24b
Geographical breakdown of SWIFT message flows
 In 2003

	Messages sent		Messages received	
	Total	To domestic users (% of total)	Total	From domestic users (% of total)
Sri Lanka	1,417,455	12.76	1,408,320	12.85
Belgium	106,696,539	15.82	112,652,453	14.98
Canada	24,140,726	25.71	23,738,135	26.15
France	100,192,507	27.55	107,578,688	25.66
Germany	145,641,261	33.65	182,602,168	26.84
Hong Kong SAR	38,332,783	11.60	35,194,825	12.64
Italy	56,962,858	27.27	63,858,558	24.32
Japan	57,115,759	15.97	50,039,014	18.22
Netherlands	84,321,805	43.80	82,512,214	44.76
Singapore	21,305,579	13.33	19,879,494	14.29
Sweden	28,742,986	15.83	22,676,057	20.06
Switzerland	86,933,925	23.36	82,897,953	24.50
United Kingdom	290,919,193	38.24	405,992,186	27.40
United States	329,285,909	35.22	358,641,338	32.34
Total all countries	2,047,564,360	26.53	2,047,564,360	26.53

Source: SWIFT.

Table 24c

Total SWIFT members, submembers and participants in CPSS countries

In 2003

	Number of users of the SWIFT network			
	Members	Submembers	Participants	Total number of users
Sri Lanka	9	13	11	33
Belgium	22	47	17	86
Canada	13	38	12	63
France	59	122	65	246
Germany	108	115	56	279
Hong Kong SAR	24	152	18	194
Italy	131	95	36	262
Japan	128	99	32	259
Netherlands	25	46	29	100
Singapore	8	135	12	155
Sweden	7	11	12	30
Switzerland	101	80	69	250
United Kingdom	87	272	79	438
United States	114	290	193	597
Total all countries	2,327	3,083	2,244	7,654

Source: SWIFT.

Table 24d

Relative share of CPSS countries in SWIFT traffic, membership and shareholding

In 2003

	Share of messages (%)		Share of total (%)		Share of equity holding	
	Sent	Received	Members	Users	Quantity	Percentage
Sri Lanka	0.07	0.07	0.39	0.43	132	0.15
Belgium	5.21	5.50	0.95	1.12	3,086	3.57
Canada	1.18	1.16	0.56	0.82	1,510	1.75
France	4.89	5.25	2.54	3.21	6,529	7.56
Germany	7.11	8.92	4.64	3.65	7,954	9.21
Hong Kong SAR	1.87	1.72	1.03	2.53	1,359	1.57
Italy	2.78	3.12	5.63	3.42	3,014	3.49
Japan	2.79	2.44	5.50	3.38	3,220	3.73
Netherlands	4.12	4.03	1.07	1.31	3,943	4.57
Singapore	1.04	0.97	0.34	2.03	473	0.55
Sweden	1.40	1.11	0.30	0.39	1,399	1.62
Switzerland	4.25	4.05	4.34	3.27	4,231	4.90
United Kingdom	14.21	19.83	3.74	5.72	7,633	8.84
United States	16.08	17.52	4.90	7.80	17,481	20.25
Total all countries	100.00	100.00	100.00	100.00	86,341	100.00

Source: SWIFT.