Payment Systems Report

Payment and Settlement Systems

Payment and Settlement Systems

The Bank's oversight responsibilities for the payment and settlement systems in the country are drawn from the Payment Systems Act 2003 (PSA). As payment systems are fundamental to the functioning of the economy, the Bank's oversight activities are directed towards ensuring the reliability of the major payment and settlement systems and mitigating risks in these systems. While the Bank's main focus is on systemic risk reduction, promoting an efficient payment and settlement infrastructure and efficiency in the provision of payment services are important considerations. Efforts to minimise risk are also balanced against considerations of costs, needs and practicality. This balance is important in promoting cost-effective and efficient payment services that would encourage the wider use of safe payment alternatives. Although the Bank's mandate pursuant to the PSA is to promote the reliable, efficient and smooth operation of the national payment and settlement systems, its scope extends beyond its statutory mandate. The Bank also assumes a central role not only in fostering payment innovations but also in facilitating and driving developments in the payment landscape to enhance the safety, security and efficiency of the payment systems. This includes sustaining public confidence in the retail payment systems and the use of payment instruments, and steering the national agenda of promoting the migration to electronic payments (e-payments).

Oversight activities are directed towards ensuring the reliability of the major payment and settlement systems and mitigating risks in these systems.

In 2007, the Bank focused its oversight efforts on further addressing systemic risk in the major payment systems, sustaining public confidence in the retail payment systems, and improving the overall efficiency of the payment system. Continuing its efforts in promoting the migration to e-payments, the Bank together with the payment industry collaborated towards enhancing the payment infrastructure, fostering the adoption of new technologies, and providing support to stakeholders in targeted sectors including the Government that has been identified as a prime mover in the nation's migration to e-payments.

MANAGING PAYMENT SYSTEM SAFETY AND STABILITY

The oversight activities undertaken by the Bank in 2007 were centred on containing systemic risks and reducing overall risks in the payment system. Guided by this, the Bank focused its oversight resources on the Real-time Electronic Transfer of Funds and Securities (RENTAS) system where large values of payments are settled and where the occurrence of risks would have the greatest impact on financial stability. More than 90% of total non-cash payments in 2007 valued at RM29.9 trillion were routed through RENTAS. On average, RENTAS handled RM124.5 billion in payment transactions daily in 2007, an increase of 23.6% compared to 2006.

As the operator of RENTAS, the Bank places great importance in ensuring its adherence to international best practices. In 2006, the Scripless Securities Trading System (SSTS) module of RENTAS was assessed against the Recommendations of the Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organisation of Securities Commissions (IOSCO) for Securities Settlement Systems. The self-assessment concluded that the SSTS module of RENTAS achieved a high degree of observance of the Recommendations. Further details of this assessment are available in the Financial Stability and Payment Systems Report 2006. In 2007, a broader self-assessment was carried out on RENTAS and its operations [comprising the Interbank Funds Transfer System (IFTS), SSTS and RENTAS-USD CHATS] against the Bank for International Settlements (BIS) Core Principles for Systemically Important Payment Systems (CPSIPS), together with an assessment of the responsibilities of the Bank in applying the Core Principles.

Benchmarking Against BIS CPSIPS

The BIS core principles are used by many central banks as a benchmark in ensuring reliable and sound operations of systemically important payment systems (SIPS). The CPSIPS sets out ten core principles covering legal risks (Core Principle I), financial risks (Core Principle II to VI), operational risks (Core Principle VII), efficiency (Core Principle VIII), access criteria (Core Principle IX) and governance (Core Principle X). Overall, the self-assessment conducted in 2007 concluded that the RENTAS system continued to exhibit a high level of robustness and came close to fully observing the international standards. A summary of the CPSIPS requirements and RENTAS' observance of the principles is provided in the following box.

Core Principles and Central Bank Responsibilities for SIPS
(RENTAS' level of observance is indicated in parentheses)

CP I – *Legal basis (fully observed)*
The system should have a well-founded legal basis under all relevant jurisdictions.

CP II – *Understanding financial risks (broadly observed)*
The system's rules and procedures should enable participants to have a clear understanding of the system's impact on each of the financial risks they incur through participation in it.

CP III – *Management of financial risks (fully observed)*
The system should have clearly defined procedures for the management of credit risks and liquidity risks, which specify the respective responsibilities of the system operator and the participants and which provide appropriate incentives to manage and contain those risks.

CP IV – *Prompt final settlement (fully observed)*
The system should provide prompt final settlement on the day of value, preferably during the day and at a minimum, at the end of the day.

CP V – *Settlement in multilateral netting systems (not applicable as RENTAS is a real time gross settlement system)*
A system in which multilateral netting takes place should, at a minimum, be capable of ensuring the timely completion of daily settlements in the event of an inability to settle by the participant with the largest single settlement obligation.

CP VI – *Settlement assets (fully observed)*
Assets used for settlement should preferably be a claim on the central bank; where other assets are used, they should carry little or no credit risk and little or no liquidity risk.

CP VII – *Security and operational reliability (broadly observed)*
The system should ensure a high degree of security and operational reliability and should have contingency arrangements for timely completion of daily processing.

CP VIII – *Efficiency (broadly observed)*
The system should provide a means of making payments which is practical for its users and efficient for the economy.

CP IX – *Access criteria (fully observed)*
The system should have objective and publicly disclosed criteria for participation, which permit fair and open access.

CP X – *Governance (broadly observed)*
The system's governance arrangements should be effective, accountable and transparent.

Responsibilities of the Central Bank in Applying the Core Principles

Responsibility A – *Disclosure of objectives, role and major policies (broadly observed)*
The central bank should define clearly its payment system objectives and should disclose publicly its role and major policies with respect to systemically important payment systems.

Responsibility B – *Compliance of central bank systems (broadly observed)*
The central bank should ensure that the systems it operates comply with the Core Principles.

Responsibility C – *Oversight of non-central bank systems (not applicable)*
The central bank should oversee compliance with the Core Principles by systems it does not operate and it should have the ability to carry out this oversight.

Responsibility D – *Cooperation with other authorities (fully observed)*
The central bank, in promoting payment system safety and efficiency through the Core Principles, should cooperate with other central banks and with any other relevant domestic or foreign authorities.

Settlement Risk
Another focus of the Bank continues to be in the area of settlement risk. The introduction of the Payment versus Payment (PvP) infrastructure for the settlement of interbank ringgit/US dollar foreign exchange (FX) trades through RENTAS-USD CHATS in November 2006 has significantly reduced the settlement risk of FX transactions. The PvP link enables the simultaneous settlement of ringgit in Malaysia and US dollars in Hong Kong during Malaysian business hours, thereby eliminating FX settlement risk. In 2007, 59.8% of the total ringgit-US dollar FX trades and 61.6% of ringgit-US dollar transactions between participating members were settled through the link.

Leveraging on the PvP infrastructure, in October 2007, the Bank introduced the Delivery versus Payment (DvP) settlement service for US dollar securities that are issued, deposited and traded in Malaysia. With the implementation of DvP, the delivery of the Malaysian-issued US dollar securities that are deposited with RENTAS will be made simultaneously with its corresponding US dollar payment, thus eliminating the settlement risk associated with the trading of such securities in Malaysia.

Cooperative Oversight with the Hong Kong Monetary Authority
To mitigate systemic risk associated with the cross-border link between RENTAS and the USD CHATS in Hong Kong, a cooperative oversight arrangement between Bank Negara Malaysia, as the overseer of RENTAS, and the Hong Kong Monetary Authority (HKMA), as the overseer of USD CHATS, was established. Based on the principles of confidentiality and reciprocity for information exchanged between the Bank and the HKMA, both regulatory agencies have established points of contact and procedures for the oversight activities of the link. This cooperative arrangement also includes business continuity plans for the PvP and DvP links of RENTAS-USD CHATS.

Operational Risk and Business Continuity Management
The RENTAS system did not encounter any major disruptions during the year. Nonetheless, the Bank continued to ensure that operational risks in RENTAS are adequately addressed, thereby preventing systemic disruptions to the operations of financial markets. In this respect, the Bank strives to ensure that the design and operation of RENTAS meet an appropriately high standard of availability and resilience. As RENTAS is part of a complex IT infrastructure with numerous interfaces, components and sub-systems interlinked with each other, a glitch in any of the systems or sub-systems could potentially adversely affect RENTAS operations. The likelihood and severity of operational problems will depend on the resilience of the infrastructure for these systems and the adequacy of their back-up arrangements. The Bank, in its efforts to mitigate risk from key dependencies of RENTAS on other systems, has enhanced further its business continuity management to ensure that

there will be minimal disruption in the operations when faced with the wide range of contingencies.

RENTAS did not encounter any major disruptions during the year. The Bank's efforts are directed towards ensuring that the design and operation of RENTAS meet an appropriately high standard of availability and resilience.

As part of the Bank's continuous efforts to ensure the reliability and uninterrupted availability of the RENTAS system, particularly at the RENTAS Disaster Recovery Centre (DRC) sites, the Bank successfully conducted an industry-wide Disaster Recovery (DR) live run operation in June 2007. While RENTAS members are required to conduct live runs from their DR sites at least four times a year to test the state of readiness of their DR sites, it is important that such testing should not only be conducted by members in isolation. Testing of business continuity arrangements on a coordinated basis involving the user community serves to reinforce the robustness and resilience of the systemically important payment system. In addition, the Bank has introduced a second level back-up facility to RENTAS members which may be activated only in the event that both their production and DRC sites are down.

Enterprise Public Key Infrastructure

Public Key Infrastructure (PKI) technology has been employed by the Bank since 1999 to ensure the confidentiality and non-repudiation of RENTAS transactions, and to control access to the system. The Bank currently acts as the restricted certification authority for the issuance of digital certificates to RENTAS members. However, in keeping with the technological developments and to meet business needs, the Bank had, in 2007, initiated work to replace the existing PKI technology with a new system that will relieve the Bank of its role as the restricted certification authority. When fully implemented in 2008, RENTAS members will obtain digital certificates from the licensed public certification authorities in the country. The implementation of the new security system will contribute towards addressing new security threats and risks, thereby effectively maintaining the confidentiality, data integrity, authenticity and non-repudiation of daily RENTAS transactions. The new security system will also be adopted for the Cheque Truncation and Conversion System.

Optimising Liquidity Management for the RENTAS System

While the RENTAS system has achieved its objective of mitigating settlement risk by providing participants with a means of settling payment obligations in real time with finality, the settlement of payment transactions on a gross basis imposes liquidity costs on participants.

The addition of new financial products settled through RENTAS, accompanied by a more active interbank bond market as well as growth in economic activities, have resulted in an increase in the value of RENTAS transactions and thus, higher liquidity requirements. In 2007, the volume and value of RENTAS transactions rose by 19.5% and 19.6% respectively. In addressing the associated increase in liquidity costs faced by RENTAS participants, enhancements to improve the efficiency in liquidity management of the RENTAS system will be undertaken. This will be achieved through the implementation of a combination of gross, bilateral and multilateral netting settlements that leverages on the real time gross settlement system for making immediate payments, and the deferred net settlement system for continuous bilateral and/or multilateral netting of payments. The availability of intraday credit facilities throughout the operating hours of the system will also be introduced. These enhancements will facilitate the continuous settlement of interbank transactions with lower liquidity requirements, hence enabling more efficient liquidity management by RENTAS participants without increasing settlement risk.

Preserving Public Confidence in Retail Payment Systems and Payment Instruments

While the Bank's oversight of payment systems focuses mainly on the operational performance of RENTAS, ensuring the robustness of the retail payment system is also important to promote public confidence. In this regard, initiatives and measures to ensure system availability, reliability and efficiency were instituted by Malaysian Electronic Payment System (1997) Sdn. Bhd. (MEPS), the major retail payment system operator and Rangkaian Segar Sdn. Bhd., the system operator and issuer of the Touch 'n Go card. No major disruptions were experienced during the year.

In addition, as part of its business continuity management, MEPS successfully conducted two DR exercises on "live" run mode for three of its core services, namely the Shared ATM Network, Electronic Debit at Point-of-Sale (e-Debit) and Interbank GIRO (IBG). The exercises also served to familiarise the MEPS Disaster Recovery team, financial institutions and related service providers with the disaster recovery process. Such DR exercises will continue to take place on a routine basis, thus minimising operational risk in these retail payment systems.

Managing Fraud Risks in Retail Payments

Promoting a safe and reliable payment environment in the country has become more challenging with the increasing sophistication of fraud techniques, brought about by rapid technological advancements. Nevertheless, proactive measures undertaken in collaboration with the industry and relevant authorities have successfully mitigated these risks, hence sustaining public confidence in the use of payment instruments.

Payment Cards

The successful migration to the Europay-MasterCard-Visa (EMV) standard for credit cards in 2005, led to a significant reduction in the number of cases and amount of losses associated with credit card fraud from counterfeiting activities (Chart 6.1). The EMV has also effectively disabled the use of cloned domestic credit cards for purchases in the country. However, other types of credit card fraud increased slightly in 2007, mainly associated with lost and stolen cards as well as card-not-present (CNP) transactions that do not require the presence of physical cards, e.g. for purchases made over the Internet or mail/telephone orders. Cases of the fraudulent use of counterfeited Malaysian cards in countries that have yet to adopt the EMV standard also contributed to the increase. Nevertheless, credit card fraud remained insignificant, accounting for less than 0.04% of total credit card transactions during the year.

To combat credit card fraud, the Bank conducts regular dialogues with the National Cards Group, whose members consist of all

Chart 6.1
Credit Card Fraud

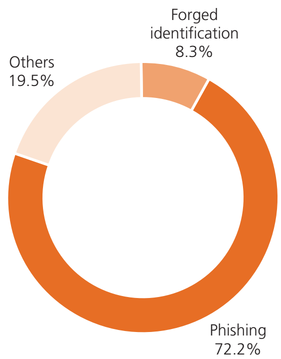
credit card issuers, and works closely with the industry to consider new mitigation measures. During the year, more credit card issuers adopted the 3D secure scheme that requires cardholders to complete an additional verification process when purchasing over the Internet to further minimise the risk of fraud. The Bank also continued to conduct awareness programmes to educate cardholders on the importance of safeguarding their credit cards and credit card information.

The Malaysian Risk Management Task Force (MRMTF), whose members include credit and charge card companies, issuers and acquirers, the Royal Malaysia Police and Bank Negara Malaysia, continued to provide an important platform for cooperation among its members to prevent fraud. The MRMTF also participates in the South East Asia (SEA) Cross-Border meetings, held annually to discuss cross-border issues relating to credit card fraud, and share information on fraud experiences in individual countries as well as emerging fraud trends and threats.

Internet Banking

Losses emanating from Internet banking fraud have been negligible, accounting for only 0.0002% of the total value of Internet banking transactions in 2007. Social engineering techniques such as phishing remained the most common method employed to conduct Internet banking fraud. Phishing involves the sending of fake e-mail messages purportedly from the financial institutions to lure recipients into

Chart 6.2
Internet Banking Fraud Cases in 2007



divulging personal information such as personal identification numbers (PINs) and passwords, resulting in identity theft. About 70% of the Internet banking fraud cases reported during the year involved phishing. Banking institutions have therefore taken various measures to strengthen the safety of Internet banking services, including extensive consumer awareness programmes. All banking institutions have also implemented the two-factor authentication for Internet banking transactions as well as fraud warning systems to detect and report suspicious transactions.

Notwithstanding the low incidence of Internet banking fraud, the Bank continues to constantly monitor trends and developments and undertake the necessary measures to mitigate any potential new risks, vulnerabilities and threats that may emerge. In this regard, the Bank will be issuing a guideline on electronic banking which will outline the minimum requirements on risk management for all forms of electronic banking, whether conducted through the Internet, telephone, mobile phone or other electronic means.

PROMOTING GREATER EFFICIENCY IN THE PAYMENT SYSTEM

The Bank has a responsibility to promote improvements in the payment system to increase the overall efficiency of the payment system as well as to make payments more convenient and cost-effective for end-users. During the year, efforts by the Bank together with the payment industry were geared towards enhancing the payment infrastructure to provide a wider array of payment channels and services, fostering the adoption of new technologies in promoting payment innovations and providing support for the migration to e-payments.

> Efforts were geared towards enhancing the payment infrastructure, fostering the adoption of new technologies and providing support for the migration to e-payments.

Enhancing the Efficiency of Cheque Clearing and Settlements

Although the payment mode has shifted from cheques to more e-payments over the recent five years, in terms of transaction value, cheques still account for a significant portion of non-cash retail transactions, at 93% in 2007 compared to 97% in 2003. Hence, enhancing the efficiency of cheque clearing is still an important area of focus for the Bank in efforts to lower the cost of doing business.

In modernising the way cheques are processed and to pave the way towards the electronification of cheques, the Bank and the banking industry embarked on a major initiative to introduce a fully image-based cheque clearing process. The Cheque Truncation and Conversion System (CTCS), better known as eSPICK, is scheduled for implementation in May 2008, initially in Kuala Lumpur and neighbouring towns. It will thereafter be extended, in phases, to the rest of the country by early-2009. eSPICK allows the clearing of cheques to be done through truncation or conversion modes, hence eliminating the physical movement of cheques once deposited at the collecting banks. In cheque truncation, both the image of the cheque and the magnetic ink character recognition (MICR) code line data are captured and transmitted electronically throughout the cheque clearing process; while in cheque conversion, only the MICR code line data is captured and converted into a payment instruction to effect the transfer of funds from the drawer's account into the drawee's account. Both modes would reduce the risks and costs associated with the physical handling of cheques and improve the efficiency of the entire cheque clearing process. The payment and receipt of funds by customers would be expedited with customers receiving funds on the next business day, regardless of where the cheque is deposited, compared to between two to eight business days currently.

While eSPICK may be perceived to be inconsistent with the agenda to actively promote the migration to e-payments, the experience in the United States has shown that cheque conversion is a necessary prelude to transforming such paper-based payment modes into e-payments. In 2006, almost 3 billion cheques issued by individuals, or 9.1% of total cheques issued in the United States were converted and cleared as e-payments, an eightfold increase from 2003. More than 10% of the increase recorded in e-payments during the three-year period was attributed to cheque conversions. The conversion of these cheque payments into e-payments has translated into considerable cost savings for businesses from the elimination of costs associated with the physical handling and transportation of cheques. Similarly in Malaysia, businesses that receive high volumes of cheque payments from their customers such as utility and telecommunication companies as well as insurers, can utilise the cheque conversion feature under eSPICK to collect payments.

Enhancing Product Delivery and Services over the ATM Network

Leveraging on the wide outreach of the ATM network in providing convenient and efficient payment services to its member institutions' growing customer base, MEPS enhanced its ATM network in July 2007 to allow members to provide 24-hour banking services to improve customer convenience. Five members have since offered the 24-hour ATM facility.

MEPS further enhanced the functionality of the domestic shared ATM network to introduce facilities for mobile phone users to top-up their prepaid accounts with effect from January 2007. This complements existing Internet banking and mobile banking channels offered by the banks that also provide such facilities, thus increasing channel options for banking customers to perform mobile prepaid top-ups. The facility, which is now available at over 1,000 ATMs of four participating banking institutions, has recorded 62,687 transactions valued at RM1.1 million up to the end of 2007.

Following the encouraging response to the provision of interbank funds transfer services via the ATM network, three more banking institutions have since offered the service. This brings the total number of banking institutions providing this service to five, with about 4,000 ATMs combined nationwide. There were 151,242 interbank funds transfer transactions amounting to RM125.2 million made via the ATM channel in 2007.

With Malaysia receiving an increasing number of tourists from China, MEPS entered into a strategic partnership with China UnionPay (CUP) in September 2007 to enable CUP cardholders from China to benefit from the convenience of performing cash withdrawals at the ATMs in Malaysia. By end-2007, over 5,000 cash withdrawal transactions valued at RM4 million were performed at the ATMs of the three participating banks in Malaysia. MEPS would be including more banking institutions in 2008, while expanding the service to allow Malaysian ATM cardholders to perform cash withdrawals in China. Similar strategic partnerships have already been established by MEPS with ATM service providers in Indonesia, Thailand and Singapore. Cash withdrawals made at Malaysian ATMs in 2007 by cardholders from these three countries increased eightfold from the previous year to RM24.4 million.

Fostering Payment Innovation and Adoption of New Technologies

The liberalised e-money and remittance access policies coupled with the innovations in mobile telephony, have also presented opportunities to enable e-money transfers over mobile networks as a new method for remittance. Given the potential of mobile-based remittances due to the sizeable population of foreign workers and the high level of mobile phone penetration in Malaysia, several mobile remittance services were introduced during the year. This included the world's first international mobile-to-mobile money transfer service between a Malaysian mobile operator and a Philippines telecommunications operator that allows subscribers in Malaysia to instantly remit up to the value of RM500 per transaction at a competitive rate of RM5.15 per transaction [including the short messaging service (SMS) cost of 15 sen] to their beneficiaries in the Philippines using mobile phones. The Malaysian mobile operator has since extended its reach to Indonesia, allowing its subscribers to send money via SMS to Indonesian bank accounts. The volume and value of transactions made using this service for the seven months since it was launched in May 2007 was 355 transactions valued at RM69,075, comprising mainly remittances to Indonesia.

Liberalised policies facilitated the introduction of innovative remittance products including the world's first international mobile-to-mobile money transfer service.

Another product launched during the year was a global mobile remittance service using the mobile phone following a tie-up between another Malaysian mobile operator and a banking institution which currently offers remittance services to Bangladesh, Indonesia and the Philippines. Customers of the mobile operator can remit up to RM5,000 per transaction to the three countries via SMS or over-the-counter at the participating mobile operator outlets. The services offer multiple payment delivery options including the depositing of funds into accounts of banking institutions in the receiving country or the collection of cash at designated agents in the three countries.

The year also saw a non-bank launch an international prepaid card that offers remittances, person-to-person funds transfers, bill payments and mobile reloads. Customers would also be able to use the card to withdraw cash from selected ATMs and make payments at more than 140,000 merchant outlets nationwide.

These mobile international remittance services, leveraging on the familiarity with the use of SMS, provide a convenient platform for foreign workers in Malaysia to send money back home. Remittances can be made at more affordable rates and at the speed of a text message from any location at any time. In addition, the emergence of these mobile remittance services has created a unique opportunity for the banking institutions to strengthen their customer relationships, while expanding the reach of banking services to the unbanked segment over the mobile network.

Collaboration with the Government Sector

During the year, the Bank continued with the active partnership entered into with the Government in facilitating the further deployment of e-payments in the economy. This included obtaining the support of the Government to expedite the widespread deployment of high-speed and reliable broadband Internet services which would spur further growth in Internet banking services and innovations that leverage on Internet technology. The announcement of tax incentives relating to broadband services and the formation of the Cabinet Committee on Broadband in 2007 will provide the impetus to achieve the two inter-related objectives of increasing broadband penetration and the use of the Internet for banking and payment related activities.

As part of the Government's ongoing efforts to improve its delivery of public services, the *myGovernment* portal was launched in December 2005. The portal which enables the public to have direct access to a comprehensive range of online services, was enhanced to offer online payment services in April 2007. This includes the acceptance of credit cards as well as payments made from banking accounts via the Financial Process Exchange (FPX) system. The online payment facility is currently offered by the Companies Commission of Malaysia for payments associated with electronic lodgements of company and business statutory documents, and by the National Higher Education Fund Corporation for the repayment of education loans. The Inland Revenue Board Malaysia has also offered FPX as an online payment mode to the public to complement its e-filing services.

Apart from promoting more payment transactions via the Internet channel, the Bank is also engaging the various Government agencies that receive substantial amounts of cash and cheque payments over-the-counter to accept payment cards. In this regard, several Government agencies namely the Immigration Department of Malaysia, National Registration Department, Road Transport Department (RTD) and the Royal Malaysia Police, Government hospitals and some local councils have begun accepting credit card and Bankcard. Another initiative underway is to enhance the JPJ eINSURANS system implemented jointly by the insurance industry and the RTD in January 2005 to incorporate e-payments. This would build upon the successful adoption of the JPJ eINSURANS system, which facilitates the online transmission of motor insurance details to the RTD for the purpose of road tax renewal, thus eliminating the usage of physical cover notes.

In 2007, the Bank collaborated with the Accountant General's Department and banking institutions to put in place the necessary processes for the reconciliation for payments and collections made by the Government through the RENTAS and IBG systems. Significant efficiency gains for the Government and payment recipients are expected to be derived from the adoption of these e-payment systems, including enhanced operational efficiency and productivity through the reduction or redeployment of resources, and cost savings from less cash handling and speedier payments and receipts.

Significant efficiency gains for the Government and payment recipients are expected to be derived from the adoption of e-payment systems.

These efforts have resulted in the increased use of e-payments in place of cash and cheques. The volume of Government payments via electronic channels has increased ninefold from 699,463 transactions in 2004 to 7,033,891 transactions in 2007, while the value of transactions increased almost threefold from RM16.7 billion in 2004 to RM64.9 billion in 2007.

Positioning Bankcard to Accelerate Migration to Electronic Payments

MEPS and banking institutions are taking advantage of the opportunities presented by the large number of 21.9 million Bankcards in circulation and payment terminals at merchants in promoting cashless payments. Bankcard is the ATM card issued by domestic banking institutions which also serves as a debit card. During the year, MEPS and banking institutions initiated steps to actively position the Bankcard as a convenient substitute for cash and as a more cost efficient payment instrument. Building on the e-Debit application that MEPS had launched in 2003,

Chart 6.3
Trend of Government Payments by Volume

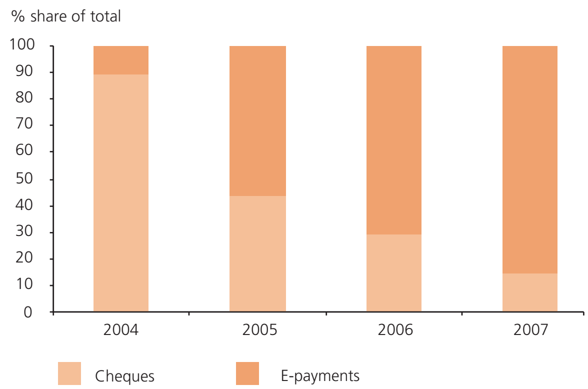
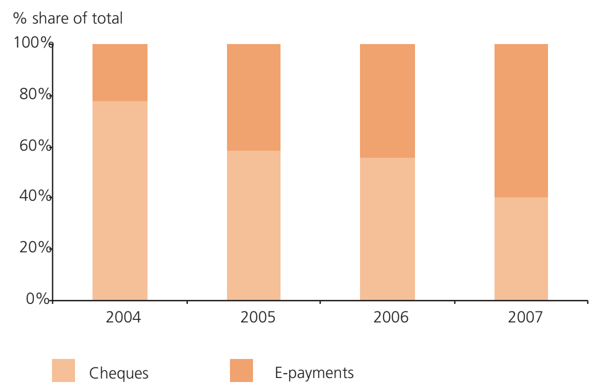


Chart 6.4
Trend of Government Payments by Value



efforts undertaken during the year included incorporating Bankcard as a payment option in the credit card terminals. The number of payment terminals accepting Bankcard increased from around 21,600 as at end-2006 to over 34,000 terminals as at end-2007. By the end of 2008, the number of terminals is expected to increase further to 50,000. With the infrastructure in place for the wider acceptance of the Bankcard, focus was shifted towards raising awareness of the Bankcard. Advertisements were placed in the media and more coverage on the Bankcard was provided on the websites of issuing banking institutions.

Bankcard offers an attractive value proposition to the merchants. Businesses and shops that receive cash payments have to incur high costs such as security and insurance to address the risk of theft, robbery and human error as well as time involved in balancing cash registers and in collecting and delivering cash to the banking institutions. With Bankcard, payments are credited directly into the merchant's account and the payment for purchases is guaranteed as the cardholder's account is verified for sufficient funds before payment is authorised. In addition, merchants enjoy lower merchant fees for Bankcard compared with credit cards. For consumers, Bankcard is as good as cash in the wallet, with added security features such as PINs that provide protection against theft and fraud.

Steps were taken to actively position the Bankcard as a convenient substitute for cash and as a more cost efficient payment instrument.

In 2008, greater attention would be directed at promoting the adoption of the Bankcard at Government counters as well as petrol stations. In developed economies such as Europe and the United States, debit cards are preferred over credit cards and the reasons cited for the preference include speed, convenience and security. With the necessary infrastructure in place and support from industry players, the potential for Malaysia to move in the same direction is enormous. The increasing preference for debit cards over credit cards would inculcate greater financial discipline as the expenditure of debit cardholders is limited to the amount available in their savings or current accounts.

Trends in Migration to Electronic Payments

Table 6.1
Cash Holdings and Non-Cash Transactions

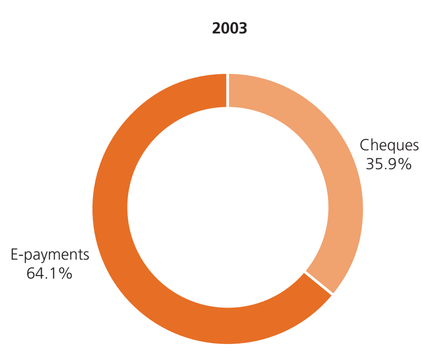
	2003	2004	2005	2006	2007
CIC per capita (RM)	1,030.9	1,106.6	1,144.0	1,245.6	1,322.1
CIC-to-GDP (%)	6.2	6.0	5.8	5.9	5.7
Number of cheques issued per capita	7.7	7.7	7.6	7.5	7.7
Number of e-payment transactions per capita	13.8	17.6	21.6	28.0	32.5
Average value of ATM withdrawals (RM)	400.1	407.2	428.1	460.9	463.3

Note: E-payment refers to credit card, charge card, debit card, e-money, IBG and FPX

The role of cash in the economy exhibited a similar trend in 2007 with the cash in circulation (CIC)-to-GDP ratio declining while CIC per capita increased slightly. ATM withdrawals were sustained at about the same level. While cash is still viewed by many consumers as the cheapest and most convenient form of payment, the increasing availability and use of payment alternatives have affected how payments are being made. Many payments traditionally made by cash and cheques, are now being made electronically with plastic cards or through electronic channels. This is demonstrated by the increase in the number of e-payment transactions made per capita to 32.5 transactions in 2007 as compared to 13.8 in 2003.

Overall, the number of transactions for all e-payment channels and modes registered increases in 2007. The increase was most evident in the usage of payment cards, mainly in the form of e-money. E-money accounted for nearly half of the e-payment transaction volume, which was mainly attributable to the ease and convenience of using the Touch 'n Go card for payments in the

Chart 6.5
Share of Non-Cash Retail Payments by Volume



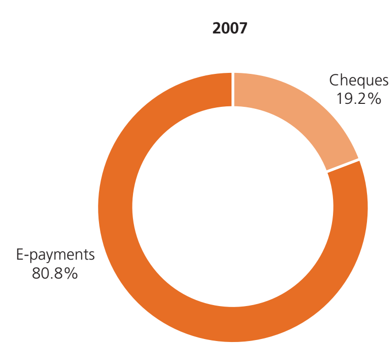


Chart 6.6
Share of Non-Cash Retail Payments by Value

transportation sector. Following rapid growth in the use of the Touch 'n Go card and its popularity as a means to pay toll charges on the nation's highways, the usage of the card is expected to be extended to the retail sector in the near future. In 2007, there were 237.6 million credit card transactions valued at RM56.2 billion, an increase of 13.8% and 18.2% respectively from the previous year.

The contactless credit cards, Visa Wave and MasterCard PayPass, have also gained popularity in 2007. There are currently eight issuers offering these contactless cards, which can be used at more than 7,000 merchant outlets in the country. Debit cards registered an exponential growth of 114% and 81% in terms of volume and value respectively in 2007. The notable progress made in debit card transactions was spurred by the growing acceptance of the public and the increasing use of the debit card instead of cash for payment of petrol purchases. The trend is expected to continue with the intensified efforts by the banking industry to deploy Bankcard terminals at merchants as well as conduct awareness and promotion programmes. Meanwhile, charge card transactions remained negligible accounting for only 0.5% of non-cash transactions in 2007.

Notable growth was also recorded in other e-payment channels such as the IBG, FPX, Internet banking and mobile banking during the year.

- The IBG continued to grow at a rapid double-digit rate, increasing by 42.6% in terms of volume and 46.3% in terms of value respectively. The increase was mainly attributed to the participation of three additional banking institutions in 2007, its encouraging usage in the Government sector and the aggressive recruitment of corporate clients to adopt IBG.

Chart 6.7
Trend of Non-Cash Retail Payments by Volume

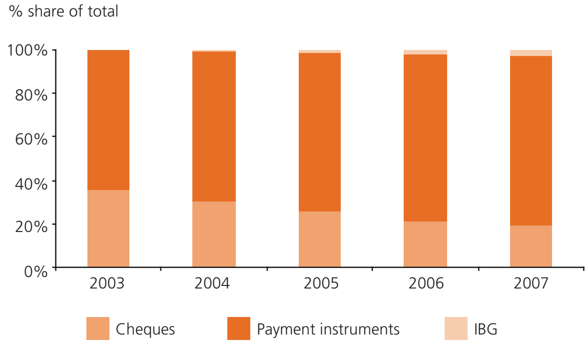
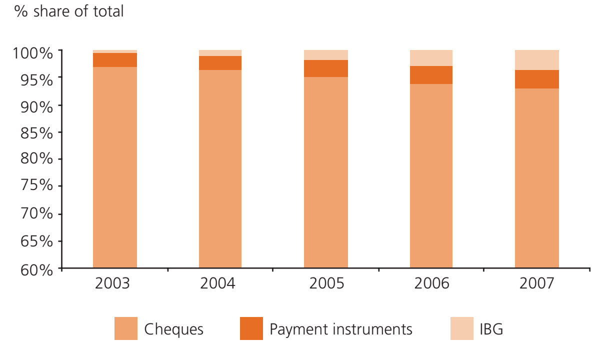
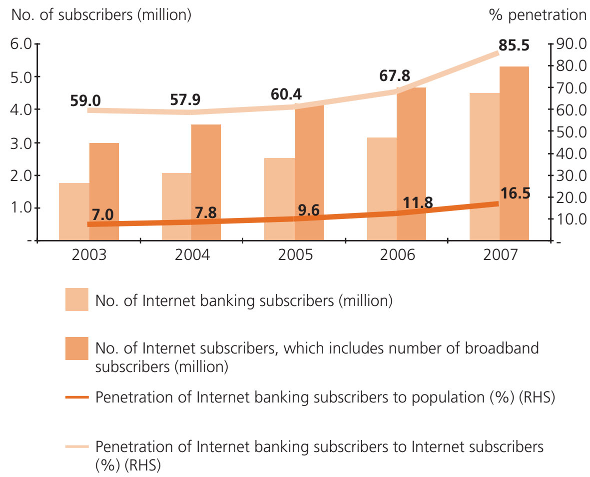


Chart 6.8
Trend of Non-Cash Retail Payments by Value



- Usage of the FPX in 2007 was also very encouraging, attributed to active merchant recruitment and recurring payments such as insurance premiums and instalments. The number of transactions made using the FPX during the year was 71,220 compared to 15,829 in 2006, while in terms of value, RM454.5 million was transacted against only RM25 million in the previous year.
- Internet banking continued to register strong growth in 2007. Internet banking subscribers-to-Internet subscriber penetration surged from 67.8% as at end-2006 to 85.5% as at end-2007 reflecting the increasing popularity of Internet banking services among Internet users. This also contributed to the increase in volume and value of transactions by 45.3% and 70% respectively in 2007. The Internet banking facilities have been used extensively for salary and bill payments, third party funds transfers and payment of credit card balances by subscribers.
- Mobile banking subscribers increased by 40.1% from the previous year, accounting for 1.5% of mobile phone subscribers and 1.3% of the population as at the end of 2007. More than half (51.7%) of the total value of transactions were to prepaid top-ups, followed by bill payments via funds transfers (24.2%) and own account fund transfers (24.2%).

Chart 6.9
Internet Banking Growth and Penetration



Roadmap for Migration to Electronic Payments

Following a consultative process with stakeholders in the payment sector, comprising the banking institutions and insurers, payment system operators and issuers, telecommunication companies and relevant Government agencies as well as views received from the National Payments Advisory Council members, the Bank finalised the Roadmap for migration to e-payments in 2007. The Roadmap seeks to align the strategies of key stakeholders, while investing the resources necessary to pursue the national agenda of accelerating migration to e-payments in a comprehensive and coordinated manner. Towards this end, the Roadmap seeks to bring together relevant stakeholders to remove the barriers currently impeding the greater adoption of e-payments.

Focusing on the main thrusts of safety, efficiency and public interest, the Roadmap seeks to capitalise on the high number of banking accounts of over 40 million in the country and the significant investments made by the Government and the industry in expanding their services via the Internet and mobile channels. In encouraging the payment industry to take advantage of these opportunities to offer new payment instruments and improve existing products by offering more convenient and cheaper alternatives, efforts are also being directed towards creating a conducive environment that will foster innovation and experimentation in payment systems. Towards this end, the Bank will continue to enhance the policy framework in line with new developments and remove barriers impeding the entry of qualified players or introduction of products that would bring greater efficiency and innovation in the market. This is to be achieved without compromising the Bank's primary objective of maintaining the overall safety and reliability of the payment system. It is also in line with the Bank's move towards placing greater reliance on market discipline to complement supervisory oversight.

The Roadmap calls for further improvements to be made in the retail payment systems that are crucial to reduce the use of cash and cheques. There is considerable scope for these systems to widen their access to the general public, thereby accelerating the migration to e-payments and achieving greater financial inclusion. The Roadmap contains action plans that would encourage or facilitate the transition to e-payments, such as developing enabling solutions for users, and defining necessary common standards as well as those that have a direct bearing on the growth in e-payments. This includes encouraging more businesses to engage in electronic commerce or electronic banking.

Achievement of greater efficiency gains in the payment system will reduce the cost of doing business, thereby improving the competitiveness of the economy.

The Roadmap also addresses important issues such as the need to build consumer confidence, increase consumer awareness of e-payments and have in place adequate redress mechanisms. Users need to be able to make better-informed choices in adopting the most efficient or cost-effective means for payments. In this regard, banking institutions and payment providers need to collaborate and design pricing structures that would motivate payment behaviours in the desired direction. The achievement of greater efficiency gains in the payment system serves not only the interest of the participants in the payment industry, but also the general public as a whole by reducing the cost of doing business, thereby improving the competitiveness of the economy.

Periodic dialogues between the Bank and the relevant stakeholders will continue to be held to identify and address issues of efficiency and cost effectiveness in a balanced and strategic manner. The potential economic and efficiency gains from reducing the use of paper-based payments are large and could lead to significant and meaningful gains in enhancing Malaysia's competitiveness.

While the transition to e-payments will be gradual and may span several years, the shift is important given the significant pay-offs derived for both the providers as well as users of e-payments, and for the overall economy. Efforts would be intensified to encourage the public to use e-payment methods, with more initiatives to be undertaken in the years to come in tandem with advancements in technology. Further efforts will also be made to leverage on the Internet and mobile phone as powerful and low-cost delivery channels for banking and payment services.