

2012

PAYMENT AND SETTLEMENT SYSTEMS

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PAYMENT AND SETTLEMENT SYSTEMS

In 2012, the payment and settlement systems operated reliably without any major disruptions, and continued to support the growth of the financial system and the broader economy. While preserving stability in the payment systems remained a central focus, the Bank also continued to devote resources towards strengthening the payment and settlement infrastructure and further enhancing efficiency in the provision of payment services. During the year, the Bank's priorities were directed at ensuring the Real-time Electronic Transfer of Funds and Securities System (RENTAS) continued to operate at a high level of compliance with international standards, further improving industry practices in the areas of risk and crisis management and standards of business conduct, and continually strengthening the security standards of payment instruments. To increase efficiency of payment services, measures were taken to promote competition as a means of

encouraging the wider adoption of electronic means of payment, expand access to a variety of payment products and services in the market, and increase the expediency in the clearing and settlement of payments, both in the retail and wholesale payment space.

PROMOTING STABILITY OF PAYMENT AND SETTLEMENT SYSTEMS

The Bank's responsibilities and powers for the oversight of payment systems are set out in the Central Bank of Malaysia Act 2009 and the Payment Systems Act 2003 (PSA). Under the Financial Services Act 2013 (FSA), the oversight powers of the Bank in respect of payment systems have been rationalised and consolidated under the FSA to provide a comprehensive legislative framework for the financial stability functions of the Bank.

Regulation of Payment Systems under the Financial Services Act 2013

The FSA incorporates strengthened provisions to regulate payment system operators that pose the most significant risks to the payment system and the public. Operators of systems that enable the transfer of funds from one banking account to another, such as Interbank GIRO (IBG), Shared ATM Network and Financial Process Exchange (FPX), and payment instrument networks, such as Visa and MasterCard, will require approval from the Bank to operate such systems or networks. Additionally, those wishing to offer merchant acquiring services will need to register with the Bank. These new requirements will replace the existing notification regime under the PSA and provide the Bank with enhanced powers to provide effective oversight over major payment systems in Malaysia.

For issuers of designated payment instruments such as credit cards, charge cards and electronic money, the regulatory approach remains largely unchanged under the FSA. In addition, debit cards will also be designated and brought under more robust regulatory oversight, reflecting their wider use among the public as a means of making payments.

The FSA empowers the Bank to specify standards to promote the safety, integrity, efficiency and reliability of the payment systems and designated payment instruments, as well as to issue directives for the purpose of promoting efficiency. It also provides a broader range of supervisory and enforcement tools to support the Bank in the performance of its oversight functions. This includes expanded intervention powers to address risks to the stability of important payment systems which enable the Bank to issue directions of compliance, remove a director, chief executive officer or senior officer who no longer fulfils the fit and proper requirements or who contributes to the contravention of any provision of the Act or the Bank's direction of compliance, and to appoint a receiver and manager.

Oversight of RENTAS

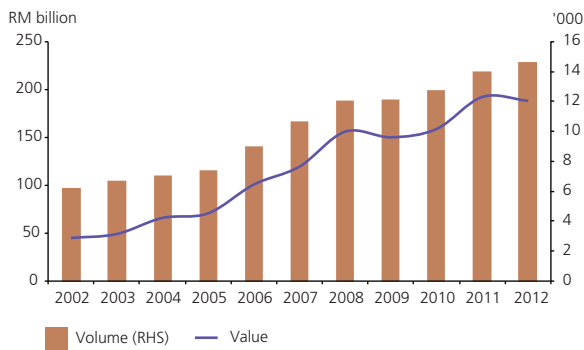
RENTAS facilitates the transfer and settlement of high-value interbank payments and securities transactions in Malaysia. In 2012, the value of transactions settled in RENTAS accounted for 49.2 times of Malaysia's gross domestic product (GDP), with an average of RM188 billion settled via the system daily (Chart 5.1). The total value of money market transactions, which form the bulk of transactions performed in RENTAS, moderated in 2012 as the Bank's approach to managing excess liquidity in the banking system shifted from direct borrowing to issuance of Bank Negara Monetary Notes. However, the number of transactions cleared in RENTAS continued to increase, driven

by higher third party payments by individuals and corporations as the adoption of electronic payments (e-payments) continued to gain pace (Chart 5.2). The ample liquidity in the financial system during the year enabled RENTAS participants to settle obligations well before the system's cut-off time. On average, 52% of total settlement value was settled by noon and 71% by 3 p.m. each day, in line with international best practices.

To ensure that RENTAS continues to meet high international standards, several enhancements to the operations and systems, and risk mitigation measures were implemented during the year. In March 2012, the Liquidity Optimiser Settlement Facility (LOSF) was introduced in RENTAS as an additional tool to manage liquidity. With LOSF, participants are able to settle transactions on a net basis at 15-minute intervals to reduce liquidity costs. However, given the ample liquidity in the system, the LOSF was not widely used by participants. The guidelines on the Bank's intraday credit facility, which is a collateralised interest-free credit line provided to eligible participants to prevent gridlock and ensure smooth operations of the system, was also revised in June 2012 to facilitate better management of the Bank's credit risk by providing that only high-quality papers, which includes Malaysian Government securities, securities issued by the Bank and AAA-rated private debt securities, would be accepted as collateral. The rules and procedures

Chart 5.1

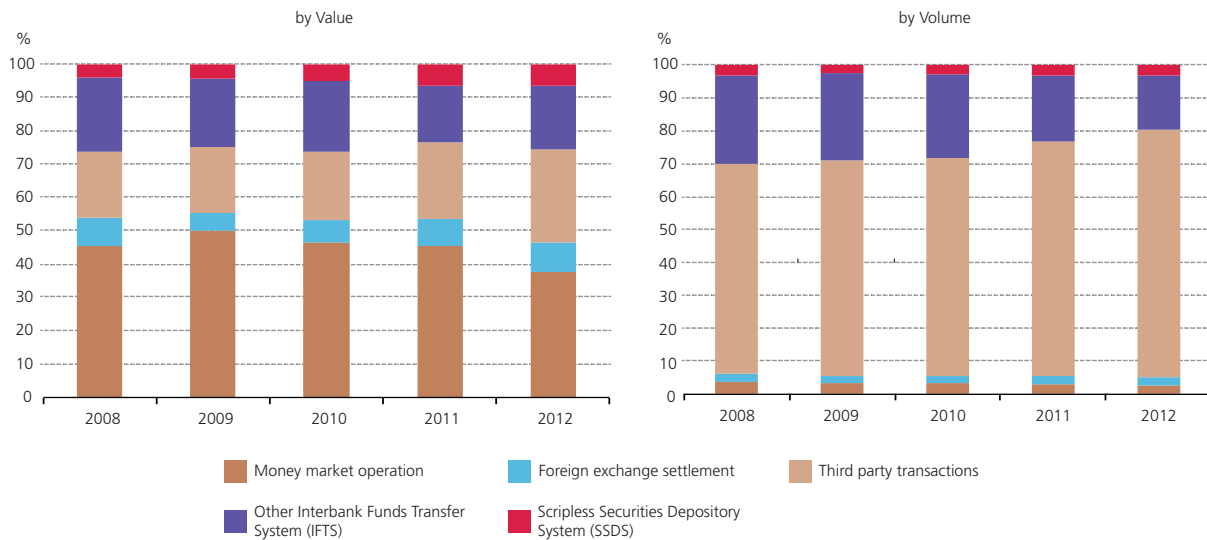
RENTAS: Daily Average by Value and Volume



Source: Bank Negara Malaysia

Chart 5.2

RENTAS: Share of Transactions



Source: Bank Negara Malaysia

Assessment of Malaysia's Observance with the Principles for Financial Market Infrastructures

Financial market infrastructures refer to the payment and settlement systems through which all financial market transactions are settled. In April 2012, the Bank for International Settlements (BIS) Committee on Payment and Settlement Systems and the Technical Committee of the International Organization of Securities Commissions (IOSCO) issued the Principles for Financial Market Infrastructures (PFMI). The PFMI replaced the previous standards issued by the BIS and IOSCO, namely the Core Principles for Systemically Important Payment Systems, the Recommendations for Securities Settlement Systems and the Recommendations for Central Counterparties. This single standard harmonises and enhances the existing international standards for payment systems that are systemically important, central securities depositories, securities settlement systems and central counterparties to ensure effective risk management, leveraging on the lessons learnt during the recent global financial crisis. As part of the Financial Sector Assessment Program conducted by the International Monetary Fund (IMF) and the World Bank in 2012, Malaysia was among the first countries to be assessed for compliance with the new PFMI.

This box article presents a summary of the IMF's assessment and key observations of Malaysia's compliance with the PFMIs. The IMF's detailed assessment will be published separately on its website.

Malaysia was assessed to have 'observed' all 19 Principles that are applicable to Real-time Electronic Transfer of Funds and Securities System (RENTAS) and its operator, Malaysian Electronic Clearing Corporation Sdn. Bhd. (MyClear) (Table 1). In addition, there are five recommendations outlined for authorities responsible for the oversight of financial market infrastructures. Of these, the Bank and Securities Commission Malaysia (as the responsible authority for the financial market infrastructures operated by Bursa Malaysia Berhad) were collectively assessed to have 'observed' or 'broadly observed' all five responsibilities.

The key findings from the IMF's assessment are:

- **Activities of RENTAS are supported by a robust legal basis that provides certainty to the enforceability of the rights and obligations of the RENTAS operator with clear and predictable consequences.** The Central Bank of Malaysia Act 2009 provides the mandate for the Bank to own and operate payment and settlement systems while the Payment Systems Act 2003 (PSA) accords the Bank with oversight powers and recognises the Bank as the authority responsible for promoting the reliable, efficient and smooth operation of the national payment and settlement systems. Meanwhile, the Contracts Act 1950 governs the participation agreement that binds the participants to the operating rules and procedures of RENTAS. As RENTAS is a designated payment system under the PSA, MyClear is required to comply with the conditions stipulated in the Supervisory Expectations and Requirements on Designated Payment Systems issued by the Bank, which includes the requirement for MyClear to ensure the reliability, efficiency, and smooth operation of the system.
- **Existing credit and liquidity risk management practices, including policies and procedures to handle participant defaults, provide a high degree of confidence that RENTAS is able to continue operating and meet settlement obligations.** Rules and procedures in managing the failure or insolvency of participants are clearly defined in the Participation and Operation Rules for Payments and Securities Services. This facilitates timely action by both MyClear and the participants to minimise potential losses and mitigate contagion risks. The design of RENTAS only permits settlement of transactions if the necessary funds or securities are available in the respective accounts. The Liquidity Optimiser Settlement Facility and the intraday credit facility provided by the Bank promote efficient liquidity management by the participants.

Table 1

Level of Observance of the Principles for Financial Market Infrastructures and Responsibilities of the Central Bank, Market Regulators, and Other Relevant Authorities for Financial Market Infrastructures

Principles for Financial Market Infrastructures	Level of Observance
1. Legal basis	O
2. Governance	O
3. Framework for the comprehensive management of risks	O
4. Credit risk	O
5. Collateral	O
6. Margin	NA
7. Liquidity risk	O
8. Settlement finality	O
9. Money settlements	O
10. Physical deliveries	NA
11. Central securities depositories	O
12. Exchange-of-value settlement systems	O
13. Participant-default rules and procedures	O
14. Segregation and portability	NA
15. General business risk	O
16. Custody and investment risks	O
17. Operational risk	O
18. Access and participation requirements	O
19. Tiered participation arrangements	NA
20. FMI links	O
21. Efficiency and effectiveness	O
22. Communication procedures and standards	O
23. Disclosure rules, key procedures, and market data	O
24. Disclosure of market data by trade repositories	NA
Responsibilities of the Central Bank, Market Regulators, and Other Relevant Authorities for Financial Market Infrastructures (FMIs)	Level of Observance
A. Regulation, supervision, and oversight of FMIs	O
B. Regulatory, supervisory, and oversight powers and resources	O
C. Disclosure of policies with respect to FMIs	BO
D. Application of the principles for FMIs	O
E. Cooperation with other authorities	BO

- **Observed (O)** – Any identified gaps and shortcomings are not issues of concern and are minor, manageable, and of a nature that can be taken up in the normal course of activities.
- **Broadly observed (BO)** – The assessment has identified one or more issues of concern that are to be addressed and followed up in a defined timeline.
- **Partly observed (PO)** – The assessment has identified one or more issues of concern that could become serious if not addressed promptly. High priority should be accorded to addressing these issues.
- **Not observed (NO)** – The assessment has identified one or more serious issues of concern that warrant immediate action. Highest priority should be accorded to addressing these issues.
- **Not applicable (NA)** – Does not apply because of the particular legal, institutional, structural or other characteristics of the financial market infrastructure.

- Clear and comprehensive rules and procedures are in place to provide settlement finality and mitigate settlement risk.** The PSA provides for all funds and securities settled in a designated payment system to be final and irrevocable, while operational procedures issued by MyClear clearly define the actual point at which settlement is considered final. All ringgit transactions in RENTAS are settled in the books of the Bank, while foreign currency transactions are settled in the books of commercial banks. These foreign currency settlements are conducted via a Payment versus Payment (PvP) arrangement that is jointly supervised with a foreign regulatory authority or through an appointed banking institution that is regulated and supervised by the Bank.
- Appropriate rules, procedures and controls are in place to ensure the integrity of securities transactions and minimise principal risk of exchange-of-value settlement systems.** As the central securities depository for public and private debt securities, MyClear ensures that the rights of securities issuers and holders are adequately protected. These include prevention of unauthorised creation or deletion of securities and daily reconciliation of securities issued. RENTAS adopts PvP and Delivery versus Payment (DvP) processes for exchange-of-value settlements where both securities and foreign currency settlements are conducted by simultaneously debiting and crediting the respective accounts, provided sufficient balances are available to effect the transaction. The occurrence of finality is synchronised for both legs of the transaction thus eliminating principal risk.
- Effective controls are in place for general business and operational risk management.** As the operator of RENTAS, MyClear is required to put in place controls to effectively monitor and manage its financial performance and liquidity position to address any business risk. The system infrastructure was upgraded in 2011 to support the future expansion of RENTAS services. Since its implementation in 1999, RENTAS has consistently achieved at least 99.9% of system availability. Stress testing on the processing capacity of RENTAS is undertaken periodically to ensure that there would not be any degradation in performance as a result of increased transaction volumes. Business continuity planning for RENTAS is comprehensive with three levels of backup facilities, as well as rigorous and regular contingency plan testing.
- The operation of RENTAS is guided by policies which ensure fair and open access, efficiency and effectiveness in meeting the requirements of the participants and markets it serves, as well as transparency to inform sound decision making and foster confidence.** In practising fair and open access, criteria for access to RENTAS and orderly exit procedures are clearly stipulated in the Rules and Operational Procedures, which are published on MyClear's website. RENTAS is designed and operated based on best practices and international standards. The services provided by RENTAS are continuously improved to reflect international developments and to meet the evolving needs of the participants, the financial market and the economy. This includes the recent introduction of renminbi settlement services and the link up with the International Central Securities Depository (ICSD), Euroclear. Moving forward, RENTAS will be enhanced to adopt the Society for Worldwide Interbank Financial Telecommunication (SWIFT) messaging standard to enhance operational efficiency for its participants and the system as a whole. This initiative is expected to be completed in 2014. Formal meetings with relevant stakeholders are held prior to effecting changes to system rules. Current information on the design and operations of RENTAS is accessible on MyClear's website.

Key Recommendations

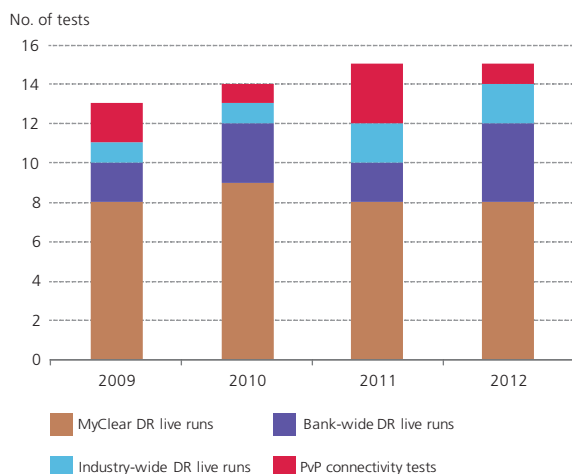
The compliance assessment made several recommendations to further enhance the risk management practices of MyClear. This would ensure that RENTAS continues to achieve a high level of observance of the PFMI as the financial market develops. The recommendations also included

suggestions for further improving disclosures of policies and cooperation with authorities in promoting the safety and efficiency of financial market infrastructures.

Going forward, the regulatory framework governing RENTAS operations is to be strengthened under the FSA, to provide explicit protection for the collateral placed by participants for intraday credit facilities and repurchase arrangements. MyClear has indicated its commitment to further enhance the robustness of its risk management systems, including ensuring the portability of customers' securities following a merger or acquisition, and addressing risks associated with Euroclear as more transactions build up in the future. To further strengthen its default management procedures, periodic tests with the involvement of its participants are being planned by MyClear. The disclosure framework will also be enhanced to promote better understanding and management of risks by participants. In addition, efforts will continue to be taken to further strengthen existing cooperation and exchange of information arrangements between the Bank and other supervisors and authorities, including the Securities Commission.

Chart 5.3

Frequency and Types of DR Tests for RENTAS



Source: Bank Negara Malaysia

of RENTAS were also enhanced to more clearly define the point of settlement finality for securities settlements to provide greater certainty to RENTAS participants. The enhanced rules further provide detailed procedures for handling participant defaults and other abnormal situations to support timely actions to contain losses and liquidity pressures and ensure that obligations of RENTAS participants continue to be met.

As an added measure to improve operational risk management, the Mini RENTAS, a third-level backup facility, has been made available since July 2012 to facilitate settlement of critical payments in the event that both the main production site and disaster recovery centre are down simultaneously. The disaster recovery centre is regularly tested, involving monthly live-run exercises, an annual contingency drill on the RENTAS-USD Clearing House Automated Transfer System (CHATS) Payment vs Payment (PvP) link and a disaster recovery test for Euroclear transactions (Chart 5.3). The recovery time objective for RENTAS is one hour, which is in compliance with international standards.

Oversight of retail payments

Driven by technological advancements and innovation, the range and reach of payment services continued to expand with the entry of new players to the retail payments market such as Internet portals, telecommunication companies, online enterprises and social networks. The rapid development in mobile technologies has also positioned mobile billing as an increasingly popular payment method within the Internet space.

Mobile billing, which involves the use of prepaid mobile airtime to make payments, is currently used not only to purchase mobile services offered by the telecommunication companies, but also to pay for digital or virtual products such as ringtones and online games offered by social networking sites or online merchants worldwide. The Bank has provisionally allowed telecommunication companies to offer mobile airtime to be used as a mode of payment for limited products and services while the Bank assesses its usage pattern and associated risks to form the basis for the development of a suitable regulatory framework for such payment services. The Bank will continue to support the development of new and innovative payment services that provide consumers with greater choice and convenience, while ensuring adequate security of these services for the protection of consumers.

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With the rapidly changing payment landscape, the Bank has further intensified its surveillance and supervisory efforts to promote the safety and security of the payment systems and instruments and raise the level of compliance with prudential and business conduct standards by the operators and issuers. The approval process for new entrants and new products was tightened to reflect the Bank's higher expectations of continuous compliance with the relevant regulatory requirements and to encourage greater diversity in the range of quality products that are available to consumers and businesses. In 2012, the Bank approved three new entrants to the retail payment market and 16 submissions by existing issuers to launch new products or variations. These have brought about the introduction of new and innovative payment methods, enhanced cost-efficient infrastructure for merchants to accept e-payments, and

provided greater benefits to consumers via rewards and discounts. During the year, the Bank also withdrew the approvals granted to two electronic money (e-money) issuers, for failure to comply with regulatory requirements.

A key focus of the Bank's oversight activities is the level of operational resilience and the adequacy of contingency planning to ensure uninterrupted availability of major retail payment systems. In 2012, the operations of the National Electronic Cheque Information Clearing System (eSPICK) were affected by several intermittent technical glitches. This did not have a significant impact on the industry and the public as the system continued to maintain a high level of operational availability which allowed cheque clearing to proceed smoothly. The Bank and Malaysian Electronic Clearing Corporation Sdn. Bhd. (MyClear) are conducting a comprehensive review of the eSPICK infrastructure, capacity, redundancies and incident management processes with a view to resolve any identified system constraints and develop solutions to further improve the overall system resilience. The other major retail payment systems, i.e. IBG, FPX, Direct Debit and e-Debit systems, operated by MyClear, and the Malaysian Electronic Payment System Sdn. Bhd.'s (MEPS) Shared ATM Network, continued to function smoothly without any major disruptions.

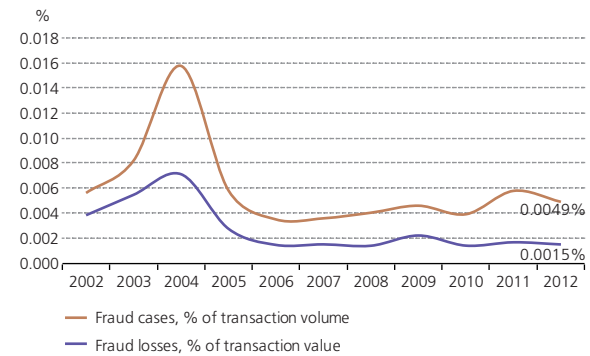
While payment cards continue to be predominantly used for retail purchases and transportation (petrol and highway tolls), the growing number of e-commerce merchants and increasing popularity of mobile Internet devices have led to rapid growth in Internet payment transactions. To strengthen safeguards against fraud (as the physical presence of the purchaser and the card is not required to conclude a purchase), requirements for transaction alerts and a strong authentication method for online transactions were implemented effective 1 January and 1 April 2012, respectively. Transaction alerts are sent to the cardholder via short message service (SMS) as soon as a transaction that exceeds a value threshold set by the issuer is performed, thus providing an early opportunity for the cardholder to notify the issuer of a possible fraudulent transaction. The adoption of a strong authentication method also enhances the security of online transactions by requiring cardholders to enter a one-time password in order to authorise each payment. Transactions conducted without the password can be reversed,

thus providing further protection to cardholders against fraudulent online transactions. These requirements, which are currently applicable to credit cards, will be extended to provide the same level of security for transactions using debit and charge cards as well as large e-money schemes.

Payments fraud remained negligible and continued its declining trend, with fraud incidents accounting for less than 0.005% of total volume and value of retail payment transactions in 2012 (Chart 5.4). In general, the level of card fraud in Malaysia remains significantly lower than the fraud experience reported by other countries, including developed countries. Credit card fraud remained the most common forms of payment fraud, with an average loss of 0.03%, that is, a loss of 30 sen for every RM1,000 transacted (Chart 5.5). The level of fraud

Chart 5.4

Fraud, % of Total Transactions

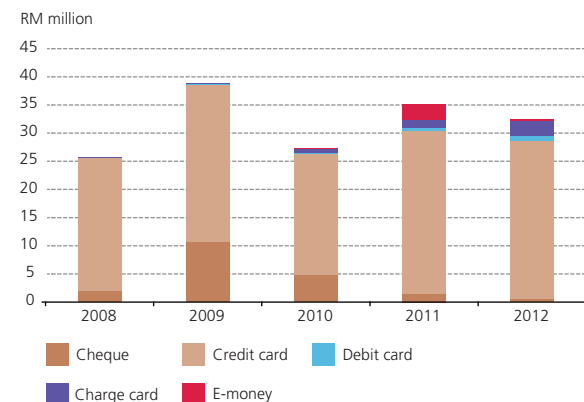


Note: Consists of cheque, credit card, debit card, charge card and e-money

Source: Bank Negara Malaysia

Chart 5.5

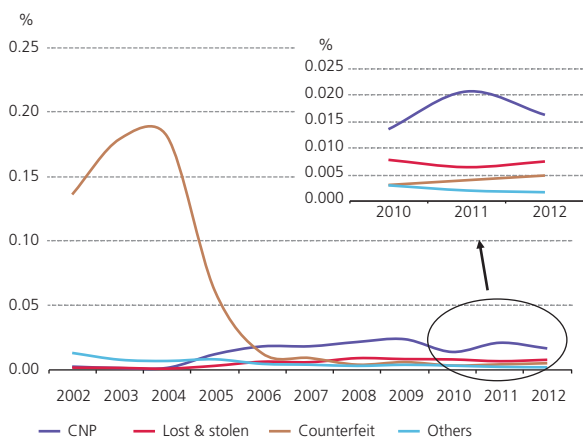
Fraud Losses by Type of Instruments



Source: Bank Negara Malaysia

Chart 5.6

Credit Card: Fraud Losses, % of Total Transactions



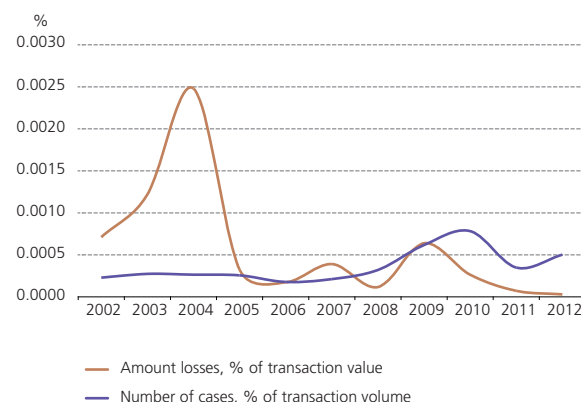
Source: Bank Negara Malaysia

had declined significantly since the introduction of the more secure chip-based cards in 2004 and 2005 to counter fraudulent skimming or counterfeiting of automated teller machines (ATM) and credit cards respectively. However, incidents of fraud have now shifted to card-not-present (CNP) fraud, which involves the theft of credit card information which is then used to make fraudulent payments via the Internet, mail and telephone (Chart 5.6). CNP fraud accounted for about half of total credit card fraud losses in 2012.

With the recent implementation of the strong authentication method for online transactions by all Malaysian issuers and acquirers, incidents of CNP fraud mostly involved transactions with foreign e-commerce merchants in countries that have yet to adopt the additional security feature. In such cases, Malaysian cardholders and financial institutions are protected from losses as the amount associated with the fraudulent transaction can be recovered from the foreign acquirer. This practice, known as 'chargeback', requires those who have yet to implement the recommended security features to absorb any losses arising from fraudulent transactions, as a means of encouraging wider adoption of security measures to combat fraud. Other types of credit card fraud which have shown an increasing trend involve lost and stolen cards, and the fraudulent use of counterfeited Malaysian cards in countries that have not adopted the EMV (Europay, MasterCard and Visa) chip standard. However, as Malaysia has migrated to a fully EMV-compliant credit card infrastructure, Malaysian cardholders and issuers are

Chart 5.7

Cheque Fraud, % of Total Transactions



Source: Bank Negara Malaysia

similarly protected by the chargeback mechanism against losses from these types of fraud.

Similar trends are observed for fraud involving debit and charge cards, which also remained relatively low. Fraud losses were largely associated with CNP fraud, which accounted for about 80% of total fraud losses involving these payment instruments. The Bank will be requiring issuers and acquirers of debit and charge cards to enhance security measures for these instruments to the same standard as that implemented for credit cards, particularly as the use of these instruments as a mode of payment increases further.

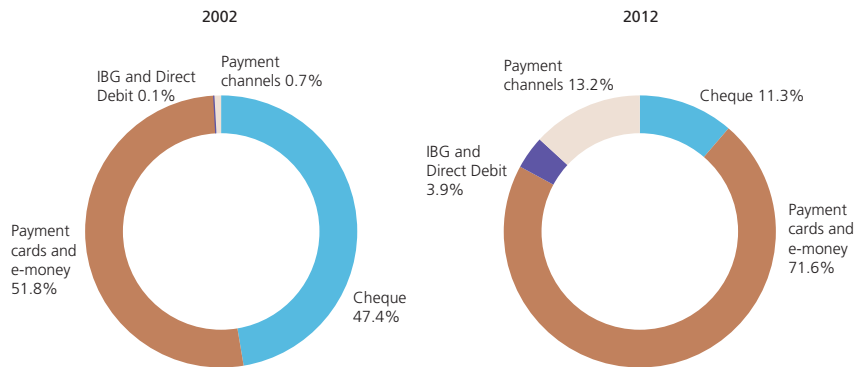
Compared to the other payment instruments, the average losses from cheque fraud are relatively higher, with an average loss per incident of RM3,430 in the recent five years compared to RM498 for credit card fraud and RM191 for e-money fraud. The most common forms of cheque fraud are forgery and stolen cheques, which accounted for more than 80% of fraud incidents. While the number of cheque fraud attempts has been on the rise in recent years, the actual losses incurred have declined due to the continued vigilance of the industry and the enforcement by the law enforcement agencies in combating cheque fraud (Chart 5.7).

PAYMENT TRENDS

The use of e-payments has continued to expand while the use of cash and cheques declined relative to other payment methods. Nearly 90%

Chart 5.8

Share of Non-Cash Payments by Volume



Source: Bank Negara Malaysia

of the 1.8 billion non-cash payments (including cheques), amounting to RM17.1 trillion, are now made via electronic means compared to 52.6% a decade ago (Chart 5.8). On average, the number of e-payment transactions per capita increased further from 49 in 2011 to 56 in 2012. This was mainly attributable to the higher use of e-money, debit card, Internet banking, IBG and ATM, continuing the trend which has been observed since 2002 (Chart 5.9).

E-money, which is mainly used in the transportation sector, remained the most frequently used e-payment instrument, accounting for three out of every five e-payment transactions conducted in 2012. A total of 925 million transactions worth RM4.7 billion were recorded in 2012, representing a growth of 14.7% and 22.6% by volume and value, respectively. With the Government's efforts to improve the public transport ticketing system, and as more Malaysians experience the speed and

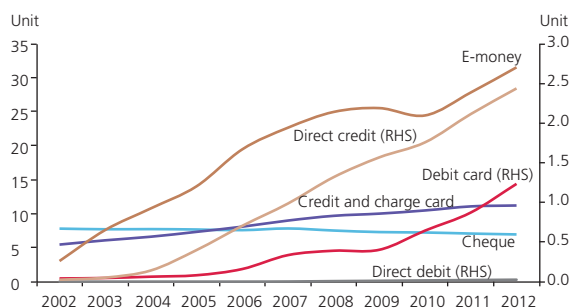
convenience of contactless payment for tolled highways and public transport, the growth in e-money transactions is expected to sustain its double-digit growth rate in the coming years.

The number of purchases using payment cards grew by 5.5% to 365 million in 2012, reflecting the higher number of cards issued and continued migration from cash. While credit cards still account for the bulk of the transaction volume, its share has declined from 94% in 2007 to 89% in 2012, with a corresponding increase in the use of debit cards. Three million debit card purchases were made every month in 2012 compared to less than 0.8 million in 2007. The average transaction value for debit cards has also increased over the years reflecting greater consumer confidence in using debit cards for higher-value transactions. In 2012, the average amount spent per debit card transaction was RM240 compared to RM290 for credit cards. The growth of payment cards is also attributed to an increase in the number of Electronic Funds Transfer at Point of Sale (EFTPOS) terminals with more than 17,500 terminals deployed during the year, bringing the total number to 276,304 as at end-2012. Of these, 80% accept international scheme payment cards, whilst 57% accept domestic debit cards and 11% accept e-money.

The use of the three major retail electronic funds transfer systems namely IBG, Direct Debit and FPX continued to register encouraging growth. Over 70 million transactions amounting to RM22.1 billion flowed through these three systems, representing an annual increase of 16.8% and 28.6% in volume and value terms, respectively. The total value of transactions processed through

Chart 5.9

Non-Cash Payments per Capita



Source: Bank Negara Malaysia

the IBG system, which has the widest network of 39 member banks, has more than doubled over the last five years to account for 22.6% of GDP in 2012 as compared to 10.1% in 2007. This significant growth was largely due to the wider use of IBG for salary payment by companies, electronic tax refunds by the Inland Revenue Board of Malaysia (Lembaga Hasil Dalam Negeri, LHDN) and the provision of additional online services by the Government such as the acceptance of payments to the Federal Court of Malaysia for submission of court cases via its online filing system.

Malaysian households and businesses performed 280 million financial transactions via e-payment channels in 2012, comprising mainly fund transfers, bill payments, top-ups for prepaid cards, purchases of phone cards and investments in the equity market. Internet banking remained the preferred online payment channel, contributing 81% of the total transaction volume through e-payment channels, followed by ATMs (17%) and mobile banking (3%).

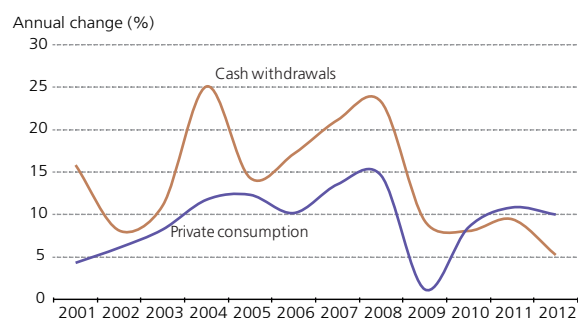
The number of financial transactions conducted via Internet banking grew by 16.3% in 2012 to 226 million payments, supported by the wider participation of banks in facilitating payments to statutory bodies and the increase in the number of households having access to the Internet. The number of active individual Internet banking subscribers increased by 24% to 5.7 million in 2012. The value of these Internet banking transactions recorded remarkable growth, reaching RM2.8 trillion in 2012, from RM418 billion in 2007. Two major factors behind the growth have been the larger number of businesses that credit salary payments directly to bank accounts and an increase in online transfers of contributions to social security organisations.

Banking institutions continued to increase the deployment of ATMs to replace counter services. In 2012, a total of 46 million financial transactions valued at RM41 billion were conducted through ATMs, representing an annual increase of 10.3% in volume and 9.8% in value, respectively. The use of mobile banking also increased in 2012, accounting for 7.1 million transactions valued at RM4.2 billion, as more banks enhanced their mobile banking services to leverage on the continued growth in smartphone usage and to cater for consumers who prefer banking on the go.

More efficient electronic means of payment continued to displace the use of cheques. Cheque

Chart 5.10

Value of Cash Withdrawals and Private Consumption



Source: Bank Negara Malaysia

volume fell below seven pieces per capita in 2012, with the total number of cheques cleared decreasing to 204 million (2011: 205 million) and declines observed in usage by all customer segments. Notably, LHDN disbursed 2.6 million tax refund transaction via e-payments, which represented almost 60% of the total number of tax refund transactions.

Cash-in-circulation, a proxy for cash usage, increased by 7.3% from RM53.5 billion in 2011 to RM57.4 billion in 2012. Its growth, however, trailed the rise in total consumption expenditure, reflecting the continued migration to non-cash payment methods which are increasingly being used to displace cash. The total amount of ATM cash withdrawals correspondingly grew at a slower pace than private consumption at 5.2%, broadly consistent with trends observed over the past two years (Chart 5.10).

PROMOTING EFFICIENT AND EFFECTIVE PAYMENT SERVICES

Considerable efforts and resources have been devoted by the Bank and the industry over the recent decade to develop a highly efficient payment system that delivers speed, security, convenience and cost savings. Whilst the migration from paper-based payments to electronic means of payment has been gradual, a marked increase in the adoption of electronic means of payment has been observed in the recent two years. This reflected the sustained efforts to expand access, improve delivery, and enhance functionalities of payment services, including measures to address impediments to the desired transformation of the national payment landscape in Malaysia.

Wider access to payment services

The Bank continued to foster greater industry collaboration to further enhance access to payment services. This included initiatives to increase access to RENTAS via electronic channels, widen the payment card infrastructure to include smaller merchants and capitalise on the mobile channel to broaden outreach and promote a more inclusive financial sector.

The Bank continued to devote its efforts to expand access, improve delivery and enhance functionalities of payment services

Access to RENTAS

Nearly all banking institutions offer businesses the convenience of initiating RENTAS payments via Internet banking to achieve greater efficiency for corporate disbursements. This facility enables a higher degree of automation for corporate treasury operations as payments can be initiated electronically compared to facsimile or over-the-counter services.

Wider payment card infrastructure

Efforts to deploy more EFTPOS terminals to increase payment convenience and encourage the switch from cash to cards continued to be pursued in 2012. During the year, the Bank collaborated with Multimedia Development Corporation and SME Corporation Malaysia to enable 1.1 million small and medium enterprises (SMEs) and micro-enterprises to accept payment card facilities by 2020 under the 'Enabling e-Payment Services for SMEs and Micro-enterprises' initiative of the Digital Malaysia Masterplan.

Outreach via mobile channels

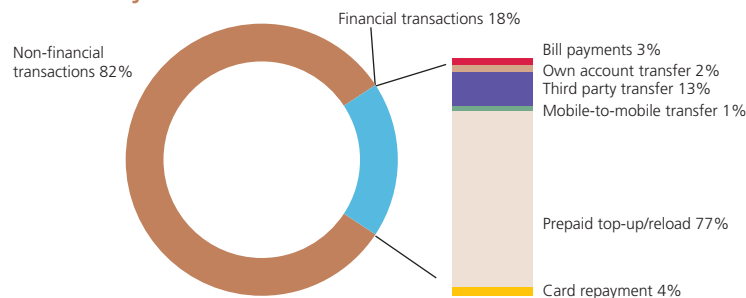
The MyMobile service, a national mobile ecosystem platform operated by MyClear, went live in February 2012, in partnership with three banks and two mobile network operators. The third major mobile network operator joined the platform in June 2012, thus covering more than 90% of mobile phone subscribers in Malaysia. These subscribers can register for the MyMobile service with the participating banks to enjoy easy and convenient access to banking and payment services. Registered users can view their transaction history, perform balance enquiries, and conduct mobile prepaid reload, funds transfer, bills payment and credit card repayment transactions through their mobile phones. New payment services are progressively being added to the suite of MyMobile services, including the payment of tax assessments to the local councils and placements of savings deposits with the National Education Savings Scheme managed by the National Higher Education Fund Corporation (Chart 5.11).

Speed of payment services

The banking industry continued to undertake measures to improve the speed of interbank fund transfers to allow individuals and businesses to manage and optimise their cash flow more effectively. Having achieved same-day funds availability for IBG payments to bank accounts in 2011, efforts were directed at increasing the efficiency of third party payments via RENTAS. In August 2012, the Bank instituted rules that enabled these funds to be made available to the beneficiary within one hour from the time the payment is initiated. Efforts are also underway to offer same-day fund posting for credit card and loan repayments by customers via IBG and to review the interbank direct debit service to offer

Chart 5.11

Share of MyMobile Activities by Volume



Source: Bank Negara Malaysia

same-day settlement for recurring payments such as insurance premium contributions.

Assurance of payments to correct beneficiary

The Bank, in collaboration with the National Registration Department of Malaysia and the Association of Banks in Malaysia (ABM), facilitated efforts by the financial institutions to update the identification details of bank account holders, which were captured prior to the implementation of the MyKad system. The updating of bank account holders' identity details is necessary for banks to validate the identity details in addition to the bank account number of fund recipients prior to the crediting of funds. Such additional validation is performed by banks at the request of payers and is often utilised for bulk payments that require greater assurance that the payment reaches the intended recipients, such as social benefits disbursements by Government agencies and business payments. The exercise is largely complete and will reduce the incidence of rejected payments due to the incompatibility of new identity card numbers provided by the payer with the old identity card numbers maintained in the records of receiving financial institutions.

Better identification and reconciliation of payments

Work is also underway to improve payment reference information in e-payment transactions to facilitate more efficient reconciliation of payment transactions by both individuals and businesses. MyClear, as the operator of the major retail payment systems, is engaging with ABM and the financial institutions to develop a framework for payment reference standards that would allow payers to tag payments with transactional details to enable payees to easily identify the source and purpose of payments. Enhancements to the electronic banking infrastructure will be undertaken by the banking industry in stages, starting with Internet banking payment transactions, followed progressively by cash management systems, over-the-counter transactions and also telephone banking. The initial phase is expected to be completed by the middle of 2013, and will enable IBG services to carry a short payment description. In the next phase, a study will be conducted on the adoption of international standards such as ISO 20022 to enable comprehensive invoicing and remittance information to be included.

Incentive structure to accelerate the migration to e-payments

Despite the increase in e-payment options and efficiency, promoting the adoption of more efficient e-payment modes has proved to be challenging, due in part to the relative price of paper-based payments and e-payments. To address the price distortion and induce the payment behavioural change, the Bank has formulated a pricing reform framework after extensive engagements with the financial institutions and MyClear. The framework will be implemented in three phases. During the first phase, the transaction fee for IBG services performed electronically via Internet banking and mobile banking, which currently ranges up to RM2 will be reduced, while a new fee will be introduced for cheques.

In promoting the adoption of more efficient e-payment modes, a pricing reform framework will be implemented, whereby during the first phase, the fee for online IBG transactions will be reduced, while a new fee will be introduced for cheques

The implementation of this new pricing structure will be carefully coordinated with the introduction of the payment reference framework in 2013, the increase in online banking transaction limits to facilitate higher value e-payments, as well as the broader participation of banks in the major retail payment systems such as IBG, FPX and Direct Debit to ensure wide access to e-payment facilities. In the second phase, as greater efficiency is achieved in the provision of e-payment services, the price of cheques will be increased further to better reflect the true underlying cost associated with processing cheque payments. In the final phase, the price of payment services will be directly determined by financial institutions based on their respective cost structures. While addressing existing price distortions is important to accelerate the migration to e-payments in order to promote greater economic efficiency, equally important are the

Table 5.1

E-Payment Collaborative Initiatives in Key Sectors

Sector	Initiatives	Adoption
Government <i>Adoption of e-payment to improve the delivery of public services</i>	<ul style="list-style-type: none"> Continued active engagement with the Government, banking industry and relevant stakeholders to support the implementation of public e-payment initiatives MyMobile platform enabled as another medium for making payments to the Government Launch of the Stamp Assessment and Payment System (STAMPS) on 1 November 2012 by the Inland Revenue Board of Malaysia (LHDN) for businesses to make stamp duty payments online 	<ul style="list-style-type: none"> 250 agencies offer 551 online payment services (2011: 236 agencies, 449 services) 155 agencies offer FPX: 655,765 transactions valued at RM193.8 million (2011: 333,771 transactions valued at RM120.9 million) 1.9 million payment card transactions valued at RM1.1 billion (2011: 1.7 million transactions valued at RM1 billion)
Capital Market <i>Provide comprehensive e-payment infrastructure for the capital markets</i>	<p>Collaborative efforts between the Bank and Securities Commission Malaysia were broadened with new initiatives rolled out in 2012:</p> <ul style="list-style-type: none"> Bursa Malaysia extended its e-Dividend facility to cover payments of interest or profit rates on listed debt securities or sukuk, income distribution by Real Estate Investment Trusts (REIT) or Exchange Traded Funds (ETF) and capital repayments More unit trust companies offer direct crediting of income distribution and redemption Enabled unit trust investments through Internet banking channels to enhance convenience for investors Piloted e-subscription for rights issues in early 2013 	<p>Share of e-payment adoption in volume terms:</p> <ul style="list-style-type: none"> e-IPO for electronic subscription to new share issuance: 81% e-Share Payment for settlement of equity trades: 35% e-Dividend for disbursement of dividend payouts: 68%
Financial Sector <i>Migrate internal payments and encourage customers to use e-channels</i>	<p>Banking institutions</p> <ul style="list-style-type: none"> Introduced attractive bank account products that promote online transactions Sustained awareness campaigns on the benefits of e-payments Increased limits on online transactions to support higher value fund transfers via online banking from RM5,000 on average to RM10,000 per day <p>Insurance companies</p> <ul style="list-style-type: none"> General insurers showed greater commitment to migrate internal payments such as payments to agents, staff, reinsurers and statutory bodies to e-payments All insurers and takaful operators have committed to offer e-payments as an option to policy holders and beneficiaries. The initiative is progressively being rolled out throughout the industry in 2013 <p>Non-bank card issuers</p> <ul style="list-style-type: none"> The Bank engaged with non-bank card issuers to adopt e-payment for settlement with merchants and refunds to customers 	<ul style="list-style-type: none"> 1,124,011 fewer cheques issued by banks and their customers in 2012 12 or 44% of the banks with Internet banking facilities have increased their funds transfer limit to at least RM10,000 with the appropriate risk controls in place 70% of premium contributions to life insurance are paid through various modes of e-payments such as credit card, auto debit from bank account or credit card, Internet banking, mobile banking and ATM
Transportation Sector <i>Promote use of payment cards for greater convenience</i>	<p>The Bank, in collaboration with Performance Management and Delivery Unit (PEMANDU), Ministry of Transport, the Land Public Transport Commission (SPAD), Touch 'n Go Sdn. Bhd. and the transit operators, will implement an Integrated Cashless Payment System (ICPS) to further increase the use of card payments within the transportation sector, from the current penetration rate of 20% in 2012. This initiative is aligned with the implementation of an Integrated Smart Ticketing System under the National Key Result Area 'Improving Urban Public Transport' of the Government Transformation Programme (GTP), to facilitate the seamless use of transport services across multiple transit operators</p>	<p>This would potentially migrate approximately 340,000 cash transactions daily to e-payments</p>

strategies and initiatives of the banking industry that are aligned towards shaping the desired payment preferences and facilitating a smooth transition towards more efficient and cost-effective e-payment services.

Driving e-payments in key sectors

For several years now, the Bank has been working closely with several key sectors of the economy to further encourage the use of e-payments. These sectors have high payment transaction flows and the migration from cheques to e-payments would result in significant efficiency gains to the wider economy (Table 5.1).

Moving forward

Malaysia is still at a considerable distance from achieving the targets set out in the Financial Sector Blueprint 2011-2020 (Chart 5.12). Of significance is the popularity of cheques, which continue to be widely used for payments even as more convenient e-payment methods are

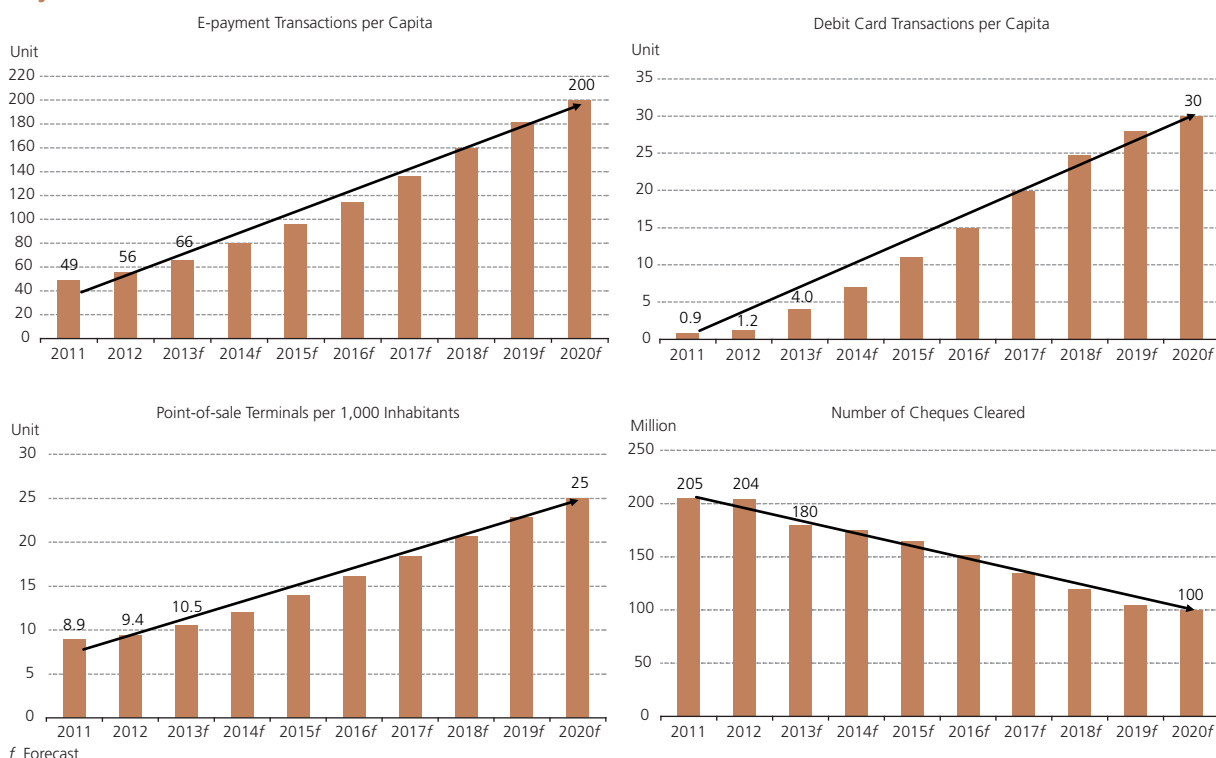
now being introduced in the market. The use of debit cards is also still relatively low, while efforts to deploy point-of-sale terminals more widely to smaller merchants has been challenging due to the continued preference for cash.

The Bank and the industry will embark progressively to build on the momentum achieved thus far and intensify efforts to achieve the targets set by 2020. The key initiatives that will be rolled out in 2013 are:

- Implementation of a new pricing framework for payment services to promote the use of more cost efficient payment services;
- Introduction of banking products that promote the use of e-payments over paper-based payments;
- Improve transparency by banking institutions of online banking fees for small and medium enterprises;
- Disclosure of simple payment reference and sender's identity for IBG and intrabank fund transfers initiated via electronic channels to facilitate reconciliation of payments;

Chart 5.12

Key Performance Indicators



Source: Bank Negara Malaysia

- Greater flexibility for customers to determine the limit for fund transfers through Internet banking channels for greater payment convenience;
- Increase in the number of banks in the MyMobile service to widen payment outreach;
- Development of a National Bill Payment Scheme which will enable bank customers to pay a wide range of billers from any bank to enhance the convenience of paying bills; and
- Require banking institutions, insurance companies, takaful operators and non-bank card issuers to migrate all of their own payments to e-payments.

Collectively, these initiatives are expected to have a pronounced impact on changing payment behaviour. It is recognised that changing payment habits takes time but the efforts undertaken are expected to yield pay-offs with inflection points in the growth of e-payment transactions in the future.

ENHANCING REGIONAL COOPERATION IN CROSS-BORDER PAYMENT SERVICES

Collaborations to further enhance cross-border payment services between the ASEAN countries continued to be pursued through the ASEAN

Working Committee on Payment and Settlement Systems. The Committee has a key role in coordinating initiatives to achieve the key milestones endorsed by the ASEAN Central Bank Governors, with the aim of improving the efficiency and affordability of cross-border trade and securities settlement, retail payments and remittance, while promoting greater standardisation of cross-border payments. Among the priorities in the near term are the formulation of principles on product transparency and disclosure for trade settlement, creation of standards on the conduct of pre-departure orientation programmes for migrant workers by labour exporting countries to promote the use of formal channels for remittance, and the undertaking of a feasibility study on the adoption of international standards for cross-border payments. Work also commenced on exploring the feasibility of introducing an ASEAN cross-border debit card scheme to support more convenient and cost-efficient retail purchases. In 2012, the Committee also engaged with the Asian Payment Network to expand cross-border retail payment linkages and the ASEAN Exchanges to facilitate settlement for capital market transactions conducted via the ASEAN trading links.