

2013

PAYMENT AND SETTLEMENT SYSTEMS

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PAYMENT AND SETTLEMENT SYSTEMS

In 2013, the Bank's focus remained on ensuring the stability and resilience of the payments infrastructure in the country while enhancing the efficiency and cost effectiveness of the major payment systems. This was supported by the enhanced regulatory powers accorded to the Bank through the enactment of the Financial Services Act 2013 and the Islamic Financial Services Act 2013, particularly with respect to oversight on major payment systems that pose significant risks and legal certainty accorded on the enforceability of standards specified to promote the safety, integrity, efficiency and reliability of the major payment systems and designated payment instruments.

Supervisory activities remained centred on pre-emptive risk assessments and stress testing to detect vulnerabilities, and on ensuring that the major payment system service providers are able to respond to emerging risks and prevent major disruptions

During the year, regulatory initiatives continued to be directed at promoting sound risk management practices and safeguarding the operational resilience of the major payment system infrastructures in the country. This is particularly crucial in view of the anticipated increase in electronic payments (e-payments) volume as a consequence of intensified initiatives to accelerate the migration to e-payments. At the same time, a balanced regulatory regime is in place to promote innovation in the market without compromising financial stability and public confidence. Supervisory activities remained centred on pre-emptive risk assessments and stress testing to detect vulnerabilities, and on ensuring that the major payment system service providers are able to respond to emerging risks and prevent major disruptions.

PROMOTING THE STABILITY OF PAYMENT AND SETTLEMENT SYSTEMS

Oversight of RENTAS

The Real-time Electronic Transfer of Funds and Securities System (RENTAS) is the national payment system responsible for settlement of high-value interbank payments and securities transactions. In 2013, RENTAS settled 4 million transactions valued at RM46.4 trillion, which is 47.2 times of Malaysia's gross domestic product (GDP) (Chart 5.1), compared with 3.6 million transactions amounting to RM46.2 trillion in 2012. The total value of money market transactions, which make up the bulk of transactions performed in RENTAS, increased in 2013 as the Bank absorbed more liquidity on shorter term basis via direct borrowings due to the higher volatility of capital flows arising from concerns over the plan to taper the quantitative easing programme by the US Federal Reserve. Foreign exchange settlement and securities transactions moderated slightly from RM4 trillion in 2012 to RM3.8 trillion in 2013 due to uncertainties in global markets.

An average of 16,061 transactions with a total value of RM188 billion was settled via the system daily compared to 14,648 transactions with total value of RM188.4 billion in 2012 (Chart 5.2). RENTAS transaction volume continued to increase, driven by higher third party transactions from an

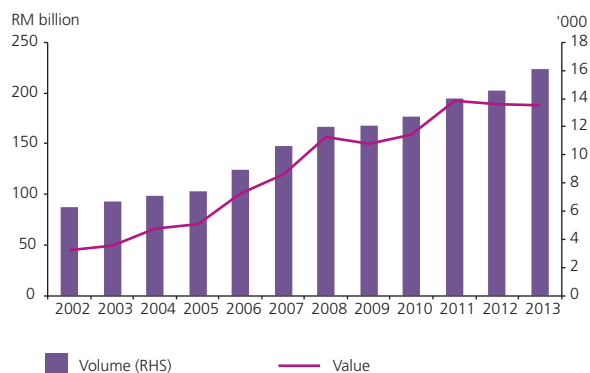
Chart 5.1

RENTAS: Transactions Turnover to GDP



Source: Bank Negara Malaysia

Chart 5.2

RENTAS: Daily Average by Value and Volume

Source: Bank Negara Malaysia

average of 2.2 million for the past five years to 3 million in 2013, in particular payments by the Government which increased by 86% in 2013 following the migration to RENTAS for payments valued at RM50,000 and above. Payments by individuals and corporations have also been growing at an average pace of 11.9% in the past four years, reflecting the wider adoption of e-payments.

RENTAS maintained 100% system availability throughout 2013

RENTAS maintained 100% system availability throughout 2013. However, there were ten incidents during the year compared with two in 2012 that resulted in delays in the settlement of Interbank GIRO (IBG) and cheque transactions, with some resulting in the extension of closing times. These incidents were caused by technical problems such as connectivity errors between the participant's internal system or RENTAS terminal with its server, or insufficient balances in participants' accounts. Normally, the participants would be granted the collateralised, interest-free intraday credit facility (ICF) in the event of insufficient funds. However, there were four incidents involving participants experiencing shortage of funds after the period of granting the ICF has ended. In all the incidents, existing contingency arrangements proved to be effective and on average the problems were resolved within an hour, preventing the incidents from escalating into major disruptions or causing inconvenience to customers.

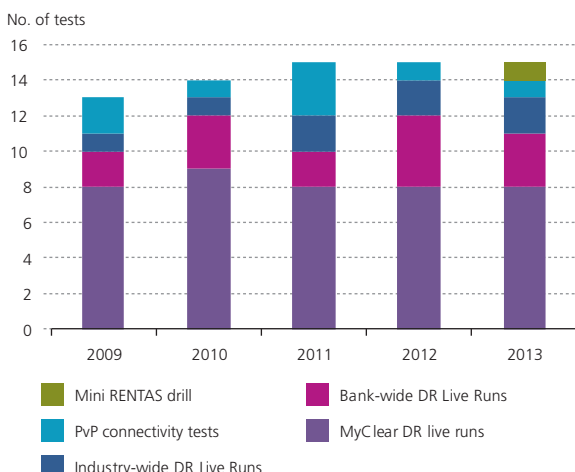
As a systemically important payment system, emphasis was on RENTAS continuing to perform effectively and efficiently. Throughout the year, the utilisation rate of each of the two RENTAS servers did not exceed the maximum threshold of 50%, indicating that system capacity remains adequate. The utilisation threshold is set at 50% so that in the event one server is down, RENTAS operations will not be impacted as the processing can be taken up by the other server seamlessly. A stress testing exercise was also conducted by simulating the settlement of an abnormal daily volume of 38,000 transactions to identify system limitations and vulnerabilities and the maximum transaction throughput that can be handled before the system performance is affected. The results indicated a high degree of resilience as RENTAS is able to process these transactions with a throughput of 2,600 transactions per 10 minutes, which is approximately four times the normal daily throughput without any degradation of performance.

In 2013, two industry-wide disaster recovery (DR) live runs were conducted on RENTAS and the National Electronic Cheque Information Clearing System (eSPICK) to assess the adequacy of the business continuity arrangement to minimise disruptions in the event of an operational incident or failure (Chart 5.3). The DR tests included the testing of the connectivity between the production servers and backup servers of the payment system participants with the Bank's backup server. In addition, the first annual drill of the fall-back arrangement using a separate but smaller scale RENTAS was conducted. The aim was to familiarise participants with the operational processes and ensure that the contingency system functions smoothly. Participants are required to perform an annual independent review of their business continuity exercises to identify any important gaps in the contingency arrangements, and to ensure that prompt measures are taken to address the gaps. This requirement was enforced in October 2013 and the annual independent review for 2013 is expected to be completed by March 2014.

During the Financial Sector Assessment Program (FSAP) exercise in 2012, Malaysia was assessed to have 'observed' all of the applicable Principles for Financial Market Infrastructures (PFMI) in relation to the RENTAS system. Since then, the Bank has continued to implement measures to further enhance resilience and strengthen various

Chart 5.3

Frequency and Types of DR Tests for RENTAS



Source: Bank Negara Malaysia

aspects of risk management processes in 2013. This included testing the portability of client holdings in RENTAS to ensure that customers' securities can be transferred smoothly following a merger, acquisition, insolvency or failure of any RENTAS participant. The first simulation test, which was conducted in August 2013, had proven to be successful in enabling the transfer of securities from the insolvent participant's account to another participant's account. The Bank has also continued to strengthen its cooperation with the Securities Commission, particularly in the exchange of information on RENTAS and on the clearing houses which are under the purview of the Securities Commission, to ensure that regulatory oversight over these connected entities is comprehensive and effective.

Oversight of Retail Payments

eSPICK and major retail payment systems

eSPICK functioned smoothly throughout the year, with the exception of a network outage incident in August 2013. With the activation of the established business continuity arrangements, eSPICK processing resumed with coordinated efforts by Malaysian Electronic Clearing Corporation Sdn. Bhd. (MyClear) and the banking institutions to ensure that cleared funds were credited into beneficiaries' accounts on time. A thorough review was conducted on the causes of the incident and operational procedures were further strengthened to mitigate the risk of similar outages in the future.

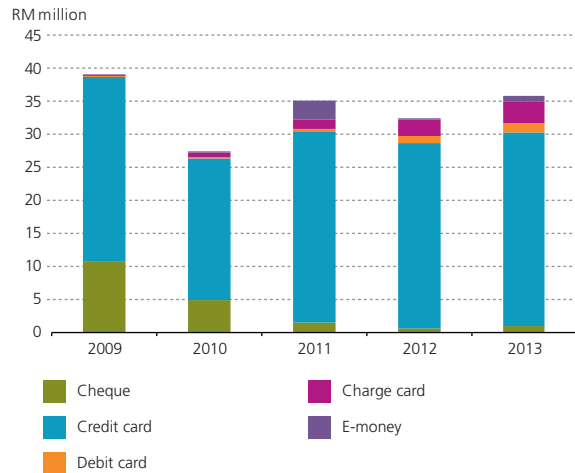
The resilience and reliability of the major retail payment systems, such as the IBG, Financial Process Exchange (FPX), domestic debit card and automated teller machine (ATM) systems, are essential to maintain public confidence in these systems and to support the increasing volume of e-payment transactions going forward. In 2013, two DR live runs were conducted on all retail payment services to assess the readiness of the application services in the event of a disaster at the primary data centre. A stress test was also conducted on the IBG system to evaluate whether the current system capacity will be able to cope with the expected increase in transaction volume following the fee reduction for IBG transactions via Internet banking and mobile banking beginning May 2013. The test was conducted by simulating the settlement of an abnormal daily volume of 2.1 million, which is three times the daily average peak volume. Results showed that the IBG system is able to manage the sudden spike without any degradation of performance. Similar stress tests will be conducted on the other major retail payment systems, such as the Malaysian Electronic Payment System Sdn. Bhd.'s (MEPS) Shared ATM Network, as the Bank will be promoting the use of funds transfer services via ATMs to provide the public with more access points to conduct e-payment transactions. Besides enhancing operational reliability, the Bank will also undertake measures to ensure that the operational rules, prudential requirements and settlement procedures remain effective in addressing and mitigating the exposure of the payment systems to settlement, credit and liquidity risks.

Payment fraud

Incidents of fraud related to the use of payment cards, electronic money (e-money) and cheques remained low, accounting for less than 0.006% of the total volume and value of retail payment transactions in 2013. Credit card fraud remained the most common form of payment fraud, with total losses amounting to RM29.4 million or an average loss of 0.03% in 2013 (Chart 5.4). Unauthorised Internet transactions remain the most prevalent type of fraud (Chart 5.5). However, in about 88% of these fraud cases, Malaysian cardholders and issuers did not suffer any financial loss as the fraudulent transactions involved online payment card transactions where the amounts can be recovered from the foreign acquirers who had not yet implemented the strong authentication method. Under the member rules of the payment card schemes, losses will be absorbed by the

Chart 5.4

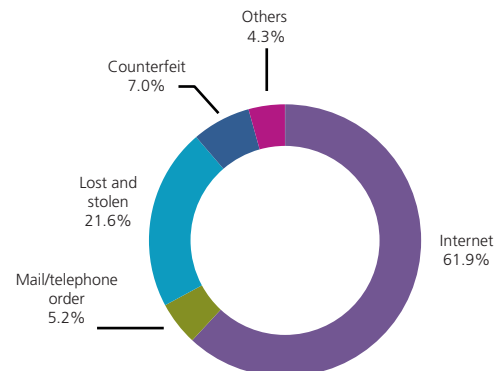
Fraud Losses by Type of Payment Instruments



Source: Bank Negara Malaysia

Chart 5.5

Credit Card Fraud by Type of Fraud, % Share of Losses



Source: Bank Negara Malaysia

party with the weakest security in place or who has yet to implement recommended security features. Malaysia had implemented the strong authentication method since 1 April 2012. Similarly, while fraud losses involving charge cards increased to RM3.4 million in 2013 (2012: RM2.5 million), about 92% of the losses, which are Internet-based fraud, were borne by foreign entities. Of the total payment fraud losses of RM35.8 million in 2013, the amount borne by consumers was RM3.3 million or 9.3% of the total fraud losses, which was mainly caused by cardholders' failure to promptly report fraudulent transactions upon receipt of transaction alerts.

On 19 April 2013, MasterCard implemented a global liability shift program for Maestro ATM transactions, which places liability for fraudulent ATM withdrawals on the party that has yet to become Europay-MasterCard-Visa (EMV)-compliant. As the implementation of EMV in Malaysian ATMs will only be completed by 1 January 2015, ATM acquirers have been absorbing the cost of fraudulent ATM transactions performed using foreign Maestro cards, which average RM0.1 million per month. However, these losses have been on a decreasing trend following enhancements to the risk management practices of the domestic ATM acquirers.

Virtual currencies

The recent years have seen considerable innovation in Internet-based payment methods and the emergence of virtual currencies, some of which have gained global popularity. One such example is Bitcoin, a virtual currency scheme that is not issued or controlled by any central authority, and which permits its users to maintain a high degree of anonymity. The use of Bitcoin has come under close scrutiny by regulators worldwide due to the inherent risks it presents, such as the potential for its use in money laundering and other criminal activities. In Malaysia, the usage of virtual currencies is very low, with only two merchants accepting Bitcoin for payments and an estimated total of 300 Bitcoin users. Nevertheless, the Bank published a cautionary statement on its webpage on 3 January 2014 to highlight the risks of using virtual currency and to caution the public that the operations of Bitcoin are not regulated by the Bank or any other authority.

KEY DEVELOPMENTS IN PAYMENT SYSTEMS**Interchange Fees**

Over the last few years, the subject of interchange fees for card-based payment transactions has attracted considerable attention and sparked many debates globally. Diagram 5.1 illustrates a typical payment card transaction which involves four parties – the merchant, cardholder, issuer (the party who issues payment cards to cardholders, such as a bank) and acquirer (the party who deploys point-of-sale (POS) terminals and accepts card payments on behalf of a merchant). The interchange fee is a fee which is paid typically by the acquirer to the issuer, to cover the costs incurred in facilitating the transaction (e.g. cost of authorisation, clearing and settlement, security

measures, funding, etc.). Interchange fees are determined by the payment card schemes and form a significant proportion of the merchant discount rate (MDR) paid by the merchant to the acquirer.

Payment card schemes often compete for market share by increasing interchange fees in order to entice issuers through higher interchange fee revenue to issue a particular brand of payment cards instead of another brand. This allows the issuers, who are also subject to competitive pressures, to increase the benefits offered to cardholders such as higher loyalty points or rebates to cardholders. If left unchecked, this may lead to a series of interchange fee hikes, which would increase the MDR paid by merchants, who may eventually pass on the higher costs to consumers by increasing the prices of goods and services. Another common trend is the shift from a flat interchange fee structure where the same interchange fee rate is payable regardless of card type, to a differentiated structure where a higher interchange fee rate is applied for premium cards such as those labelled 'Platinum' and above. This would result in higher issuance of premium cards as issuers strive to maximise interchange fee revenue, thus further escalating the cost to merchants and consumers.

These developments, which have also been observed to a certain extent in Malaysia, highlight the risks of unrestrained competition and the need for appropriate regulatory intervention to ensure the orderly development of the payment card industry. As a pre-emptive measure to prevent indiscriminate and prohibitive increases

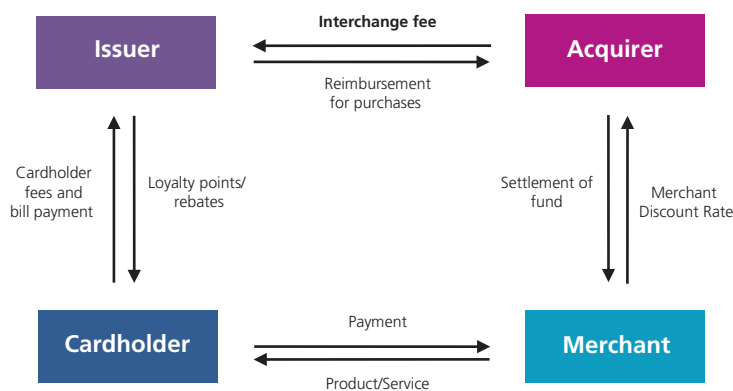
in interchange fees which could undermine the benefits of migrating to e-payments, the Bank is currently conducting a detailed assessment of how the interchange fees in Malaysia are determined by the payment card schemes. This will guide the development of an appropriate framework to regulate the process of setting domestic interchange fees. In Australia, interchange fees for credit and debit card transactions are already subject to regulation, while in the United States, interchange fees have been the subject of anti-trust lawsuits and legislation has been passed to regulate interchange fees for debit cards. The European Commission has also proposed to regulate both debit and credit card interchange fees in the European Union. While regulation has stemmed the indiscriminate increase in interchange fees and contributed to lower MDR to the merchants, experience in other jurisdictions also shows that there may be unintended consequences such as reduction in cardholders' benefits by banks and an increase in annual fees to recover lost interchange fee revenues. In developing the framework to regulate the setting of domestic interchange fees, the Bank will also take into cognisance such unintended consequences and develop parameters that will promote the growth and orderly development of the payment card industry while ensuring equitable benefits to all parties involved – merchants, cardholders, issuers and acquirers.

Electronic Payments

Over the past few years, the Bank has directed various efforts at encouraging the use of e-payments as a means of increasing economic efficiency, productivity and competitiveness.

Diagram 5.1

Four-party Payment Card Network



Source: Bank Negara Malaysia

Bold targets for achieving widespread adoption of e-payments were set by the Bank (Table 5.1) in the Financial Sector Blueprint 2011-2020 (Blueprint).

The Bank has adopted a three-pronged approach that is focused on tackling structural impediments, improving the supporting infrastructure and encouraging behavioural change

Achieving these targets will require innovative measures and coordinated industry efforts. To this end, the Bank has adopted a three-pronged approach that is focused on tackling structural impediments, improving the supporting infrastructure and encouraging behavioural change. This approach is discussed in detail in the box article 'Accelerating the Migration to Electronic Payments'.

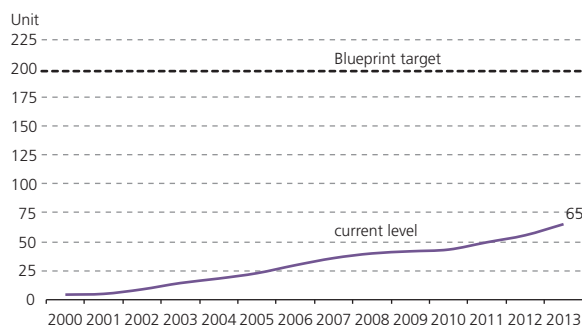
Payment trends

In 2013, the volume of e-payment transactions continued to grow at a rate of 18.8% to a total of 1.9 billion transactions valued at RM16.2 trillion. The increase in the number of transactions was mainly due to the higher usage of payment cards, e-money and Internet banking services. On a per capita basis, the number of e-payment transactions increased correspondingly from 55 transactions in 2012 to 65 transactions in 2013, with ongoing initiatives expected to further advance e-payment adoption towards the target of 200 transactions per capita in 2020 (Chart 5.6).

Retail spending using payment cards grew by 7.4% to 392.6 million transactions in 2013 (2012: 5.7%). Although the credit card remained the preferred payment card with 86.4% share of transaction

Chart 5.6

E-Payment Transactions Per Capita



Source: Bank Negara Malaysia

On a per capita basis, the number of e-payment transactions increased correspondingly from 55 transactions in 2012 to 65 transactions in 2013, with ongoing initiatives expected to further advance e-payment adoption towards the target of 200 transactions per capita in 2020

volume, the use of debit cards grew substantially faster, by 36.9% to almost 50 million transactions in 2013 (Chart 5.7). Debit cards are also increasingly being used to make payments (Chart 5.8), in line with efforts to promote the use of debit cards as a payment instrument.

The number of e-money transactions exceeded 1 billion for the first time in 2013, representing a growth of 13.6% and 17.5% by volume and value, respectively. Growth continues to be driven by the increasing utilisation of Touch 'n Go (TnG)

Table 5.1

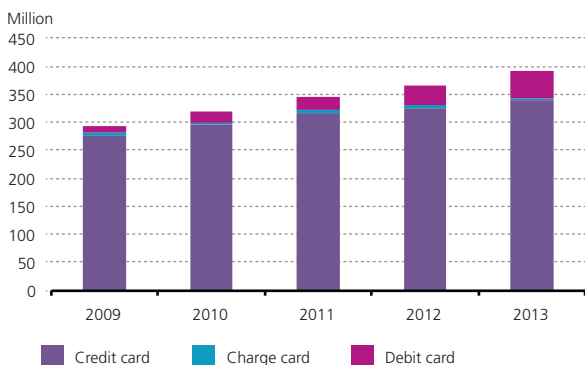
Progress Made in Achieving the Targets Outlined in the Blueprint

Key Performance Indicators	2012	2013	Target by 2020
1. E-payment transactions per capita	55	65	200
2. Debit card transactions per capita	1.2	1.7	30
3. Number of EFTPOS terminals per 1,000 inhabitants	9.2	9.5	25
4. Number of cheques issued	204 million	197 million	100 million

Source: Bank Negara Malaysia

Chart 5.7

Payment Card Spendings by Type of Cards (Transaction Volume)



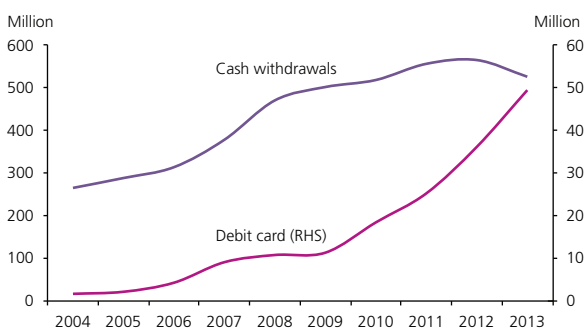
Source: Bank Negara Malaysia

cards and Paypal, which are the leading e-money schemes in the card-based and network-based e-money industries.

The use of electronic channels (e-channels) also expanded with over 350 million financial transactions worth RM3.6 trillion in 2013 compared with 290 million transactions worth RM3.1 trillion in 2012 (Chart 5.9). Internet banking continued to experience double digit growth rates, and remained the most popular e-channel, accounting for 76.1% and 95.4% of the total transaction volume and value, respectively (Chart 5.10). While the number of Internet banking subscribers increased to 15.6 million as at end-2013 from 13.7 million as at end-2012, active users accounted for only 44% of the total subscribers, indicating room for further growth in this area.

Chart 5.8

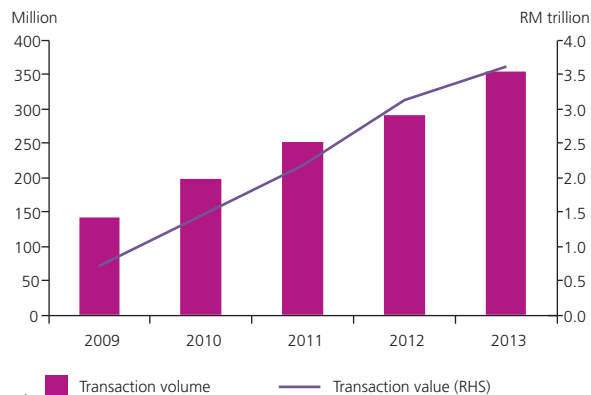
Number of Debit Card Transactions and ATM Cash Withdrawals



Source: Bank Negara Malaysia

Chart 5.9

The Use of Electronic Channels

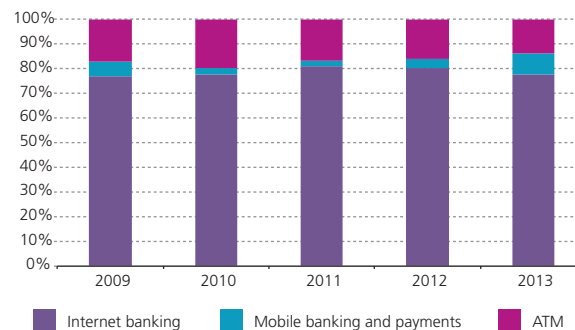


Source: Bank Negara Malaysia

The number of cheque transactions decreased at a faster pace of 3.3% in 2013 compared to the previous year (2012: -0.5%). Cheque usage as a proportion of total non-cash payments also saw a marked decline in terms of volume and value to 9% and 11%, respectively (2007: 18% and 21%). Nevertheless, the total number of cheques issued remains high at almost 200 million pieces, or 6.6 pieces per capita. In order to achieve the target of only 100 million cheques by 2020, usage needs to decline at a much faster pace of 9.2% per year over the next seven years (Chart 5.11), which has also been observed in other countries. Based on the World Payments Report 2013, cheque usage in mature Asia-Pacific countries, such as Japan, Singapore, Australia and South Korea, declined at an average annual rate of 10% between 2010 and 2012.

Chart 5.10

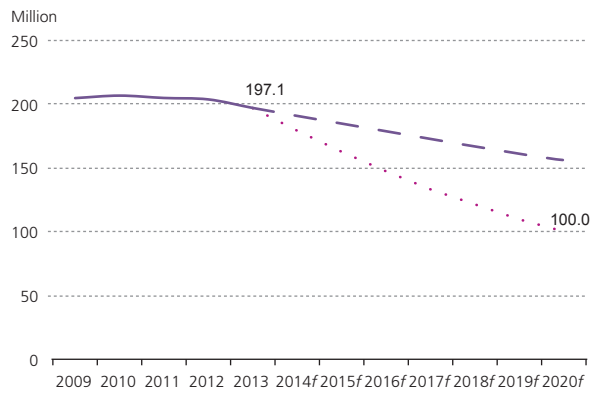
Composition of Electronic Channels Usage by Type, % Share



Source: Bank Negara Malaysia

Chart 5.11

Number of Cheques Issued



f forecast

Source: Bank Negara Malaysia

MOVING FORWARD

The ongoing oversight of major payment systems will continue to be strengthened in line with the PFMI and international best practices, with an emphasis on ensuring a high level of operational reliability, security and efficiency, including under stressed conditions. In encouraging the wider adoption of e-payments, the key strategic priorities in 2014-2015 will be the implementation of pricing reforms for payment services, the roll-out of the National Bill Payment Scheme (NBPS), and the introduction of appropriate regulation for interchange fee-setting arrangements. Collectively, these key initiatives will ensure that the payment systems continue to support the smooth functioning of the financial system and economy, while accelerating efficiency gains for the Malaysian economy.

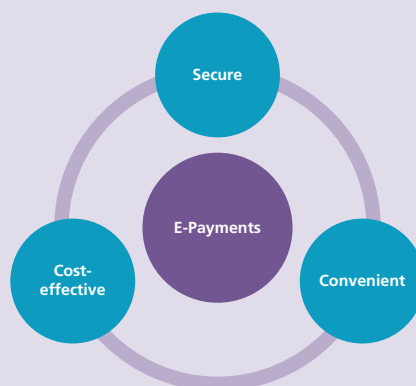
Accelerating the Migration to Electronic Payments

In the Bank's Financial Sector Blueprint 2011 - 2020, the Bank identified the migration to e-payments as a key enabler for greater economic efficiency, by transforming the payment landscape in Malaysia into one that is cost-effective, safe, fast and easy to use. To accelerate the migration to e-payments, the Bank has adopted a three-pronged approach:

- (i) Implementing a conducive pricing structure to incentivise the use of e-payments;
- (ii) Enhancing the e-payments infrastructure to widen accessibility, enhance convenience, and strengthen security; and
- (iii) Promoting greater awareness in the benefits of using e-payments.

Diagram 1

Key Features of E-Payments



Pricing Reform

In March 2013, the Bank introduced a Pricing Reform Framework aimed at aligning the price of payment instruments with the actual costs of production and processing. The objective is to incentivise the adoption of e-payments over paper-based payment instruments. The Pricing Reform Framework has three phases as depicted in Diagram 2.

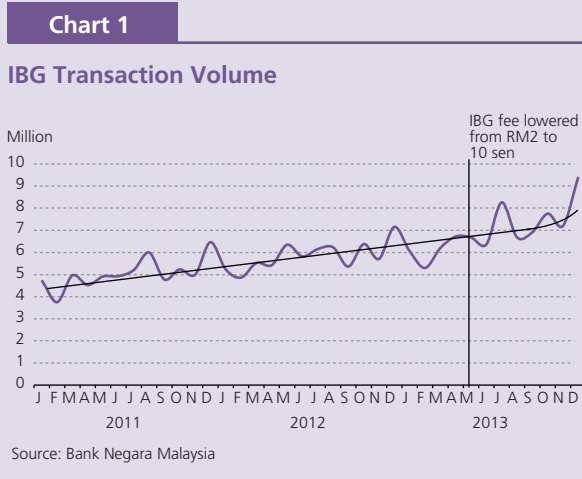
Diagram 2

Timeline of the Pricing Reform Framework



In the first phase, selected e-payment services will be deliberately priced below cost to encourage wider adoption by the public. Wider adoption would enable economies of scale while further drive unit costs down. At the same time, charges will be imposed for the use of paper-based payment instruments to reflect its higher cost. Consistent with this strategy, the fee for IBG services conducted via Internet and mobile banking was capped at 10 sen per transaction

beginning 2 May 2013, while a processing fee of 50 sen per cheque will be introduced from 1 April 2014 onwards. The response to these initiatives has been encouraging, with the average rate of growth of monthly IBG transaction volumes tripling to 6% from May to December 2013, compared to only 2% in the preceding 8 months, as illustrated in Chart 1.



The next initiative under phase one will be the introduction of a tiered pricing structure in 2014, to further differentiate the prices of payment services according to the relative costs. Transactions via online channels such as the Internet will attract the lowest fees, followed by transactions using ATMs. Based on this principle, the over-the-counter (OTC) services at bank branches will attract the highest fees for the same payment service.

It was observed that in many banking institutions, the revenue-generating business units (such as e-business and payment cards) and the cost centres (such as cash and cheque processing centres) are often in conflict over strategies for migrating to e-payments, due in large part to the misalignment of key performance indicators which fails to reflect an organisational perspective of performance. For instance, an initial decline in income due to the reduced fees for e-payment services may be desirable if it is more than offset by cost savings from fewer cheque and cash transactions. To better manage such trade-offs, banking institutions need to clearly define an organisation-wide strategy for migrating to e-payments and improve internal arrangements for coordinating the implementation of business plans that are in line with that strategy.

In the second phase of the Pricing Reform Framework, further measures will be undertaken to gradually increase the prices of cheques to better reflect the true underlying cost associated with processing cheque payments services, while in the final phase the prices of payment services should reflect the actual costs of providing the services.

Enhancing the E-Payments Infrastructure

Equally important is the existence of a robust e-payments infrastructure that meets the payment needs of the public. To this end, measures have been focused on widening accessibility and acceptability of e-payment services, enhancing user convenience, and improving public confidence in e-payments by strengthening transaction security.

Widening accessibility and acceptability

To date, almost all current and savings account holders have access to IBG services via the Internet channel or OTC services provided by the branch networks of 29 banking institutions across the country. To extend accessibility to customers with limited access to the Internet, banking institutions have committed to deploy at least one self-service Internet kiosk at each of their branches, and to enable IBG payments over the

ATMs by the end of 2014. Details of the e-payment options available in each banking institution will be published on the Bankinginfo website, as well as the websites of the Association of Banks in Malaysia (ABM) and the Association of Islamic Banking Institutions Malaysia (AIBIM).

Over the past few years, online bill payments have grown steadily from 34 million transactions in 2009 to 62.3 million transactions in 2013, reflecting the strong demand from consumers for convenient bill payment services and from corporations for efficient collection services. However, at present, customers could only use the online channel of a bank to make payments to corporations or merchants who maintain banking relationships with the same bank. To achieve the full potential of online facilities for bill payments, MyClear initiated the development of the NBPS which will provide a common and open platform for bank customers to make online bill payments from any bank to any corporation or merchant registered with NBPS. The NBPS system will be implemented in 2014 with banks joining the platform in phases from October 2014 until mid-2015.

Increasing the number of payment card acceptance points is a key strategy to further reduce the usage of cash. Efforts are being pursued by the Bank to accelerate the deployment of POS terminals, particularly among smaller businesses. An encouraging development has been the increased use of mobile POS terminals operated over wireless networks by small businesses that did not previously accept payment cards. There is also an ongoing industry initiative to migrate the ATM card or the domestic debit card from the existing proprietary standard to the EMV standard, which will facilitate interoperability and widen the acceptance of the ATM or domestic debit card for retail payments. These cards will also be equipped with a contactless functionality which significantly reduces transaction time for small value purchases. This will enhance convenience and increase payment efficiency for both customers and merchants, leading to a further shift away from the use of cash for such purchases.

Enhancing user convenience

To further improve the IBG service, the end-to-end IBG infrastructure is being enhanced in 2014. Currently, practices among banking institutions vary with respect to the time taken for funds to be credited into beneficiary's account. In 2014, the crediting times will be standardised across the banking institutions and published to provide more transparency and certainty to bank customers. The number of clearing windows will also be increased from 1 to 4 to enable payments to be credited faster into beneficiary's account.

Based on surveys of payment preferences conducted in the past, existing limitations surrounding the amount and type of information that can be captured with e-payment transactions were often identified as one of the main obstacles to greater adoption of e-payments by businesses. The description of funds received typically only indicated the type of payment, such as 'Electronic Funds Transfer' or 'IBG', and did not provide information about the sender or the purpose of the payment. To address this limitation, a payment reference standard was established in 2013 by MyClear in collaboration with ABM and the banking institutions. Senders of funds transfers will now be required to include a short description of the payment transaction when initiating a funds transfer. This description, together with the sender's name, will appear in the beneficiary's bank account statement, making it easier for the beneficiary to identify the source and purpose of the payment received, and facilitating payment reconciliations by businesses.

Strengthening security

Over the past decade, fraud losses on e-payment transactions have remained low as banks are required to comply with regulatory requirements which specify minimum security measures and standards for the protection of consumers. Various specific measures have also been taken to combat e-payment fraud, as depicted in Diagram 3.

Going forward, measures will continue to be taken to further enhance the security of e-payment transactions and educate customers on safe e-payment practices. This includes the implementation of chip and PIN-based card transactions in 2017.

Diagram 3

Key Initiatives Undertaken to Strengthen Security of E-Payment Transactions

**Building Awareness**

Efforts have also been directed at promoting greater awareness and educating businesses and the public on the benefits of e-payments. In December 2013, a Payment System Forum and Exhibition was organised by the Bank, ABM and AIBIM, to provide information to the public on the wide range of e-payment solutions available in the market and to facilitate the sharing of experience by businesses that have successfully migrated to e-payments. The forum attracted over 400 participants from the small and medium enterprises, chambers of business, corporates and government agencies.

To maintain the momentum of the awareness campaign, the Bank, in collaboration with ABM, AIBIM and the banking institutions, has also embarked on a series of 'Experience IBG' roadshows in 12 major towns nationwide. The roadshows, which commenced in October 2013 for a period of six months, focused on enhancing familiarity with the IBG service by providing detailed guidance on its usage with hands-on experience. To complement the roadshows and extend the outreach to smaller towns, banking institutions also organised a one-week 'Open Day' at bank branches in 16 other towns to promote online banking services. Separately, banking institutions are also engaging directly with customers that issue large numbers of cheques to offer assistance in migrating to e-payments.

