



**BANK NEGARA MALAYSIA**  
CENTRAL BANK OF MALAYSIA

## Preface

The Financial Stability and Payment Systems Report 2016 outlines Bank Negara Malaysia's assessment of risks and challenges faced by the Malaysian financial system and the capacity of the system to sustain its financial intermediation role in the economy. It also reports the developmental initiatives pursued by the Bank to reinforce the roles of the financial services sector in supporting and contributing to economic growth and the economic transformation process, as well as the regulatory and supervisory measures undertaken by the Bank to ensure continued safety and soundness of financial institutions and promote overall financial and payment systems stability.

This publication is intended to promote greater understanding on issues and developments affecting financial stability, including policy directions of the Bank.

The Financial Stability and Payment Systems Report is available in PDF format at [www.bnm.gov.my](http://www.bnm.gov.my)



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## Governor's Statement

The domestic financial system remained resilient in 2016. While the key sources of domestic risks to financial stability were mostly stable, continued episodes of financial market volatility have increased risks to orderly market conditions. Much of this was driven by developments in the external environment. In the advanced economies, policy uncertainties have increased. Tighter global financial market conditions have added to a mixed picture of the growth outlook for emerging economies, particularly where rising debt levels remain a concern in several places. Heightened geopolitical risks and measures to balance growth and financial stability in PR China continues to be an important focal point for financial market participants, and consequently a trigger for episodes of volatility in emerging markets. For Malaysia, such episodes were further compounded by the disruptive influence of speculative offshore market transactions involving the ringgit.

Stronger domestic institutions, ample reserves and deeper domestic financial markets have continued to preserve orderly market conditions in Malaysia. The Bank also took additional measures in December to provide greater flexibility for market participants to hedge against foreign exchange risks, rebalance the demand and supply of ringgit, and contain speculative activities that had contributed to significant volatility in the ringgit exchange rate. This has supported a more stable ringgit, while encouraging greater liquidity in the onshore foreign exchange and hedging market which is important to enable businesses to better manage exposures to currency risks.

The banking and insurance sector in Malaysia continues to demonstrate sound financial positions, and remains resilient to shocks under a range of stress scenarios. We should continue to be vigilant and maintain efforts to strengthen our resilience. Volatility in the financial markets is likely to remain elevated in the near term against prospects of interest rate normalisation in the United States. On the domestic front, low interest rates and rising impairments in some segments will continue to weigh on the profitability of financial institutions. Ensuring that key sources of domestic risks remain firmly in check must therefore be a clear priority. It is important that financial institutions remain vigilant over lending standards and risk-taking. At the same time, more progress needs to be made to responsibly address financing gaps in new and innovative areas of economic activity. The advent of disruptive technologies further threatens to dislodge traditional footholds of banks

and insurance companies on the one hand, while opening up new opportunities to increase efficiency and scale on the other. Ongoing challenges facing lower income households are additionally shining a spotlight on financial inclusion and the role of financial institutions in encouraging a more inclusive financial system in Malaysia.

These challenges, placed against a backdrop of more uncertain and unpredictable developments going forward, call for a financial system that exhibits a high degree of flexibility.

The Bank will continue to ensure that the regulatory framework is suitable for the domestic financial system and responsive to changing risks. Financial institutions should expect that regulatory settings will continue to adjust to emerging risks identified through our surveillance and supervisory activities, and engagements with financial institutions. This includes risks associated with cyber threats, more pronounced cross-border activity, conduct in the wholesale markets and growing product complexity. While the strong regulatory foundations that have been built over the years will continue to serve the financial system well, it will be important to ensure that the conduct and behaviours of financial institutions continue to line up with outcomes that promote sound and responsible risk-taking. The Bank will also strike an appropriate balance between encouraging innovation, and minimising externalities that can undermine financial stability and legitimate consumer interests. The Regulatory Sandbox introduced by the Bank, ongoing work to develop recovery and resolution plans for financial institutions, and closer coordination with other authorities are examples of efforts to facilitate this balance.

In ensuring that the financial system will continue to facilitate economic development, including improvements in economic efficiency, the Bank will work with the Government and other relevant authorities to further develop a broader and more diverse financial system catering to different financing and protection needs of households and businesses. The implementation of announced reforms in the life and general insurance sectors will be a key focus in the coming years to address the protection gap that currently exists and promote stronger foundations for sustained growth. Measures will also be pursued to strengthen the capacity of the domestic insurance market to underwrite larger and more specialised risks. In terms of financing, evolving new approaches to the management of credit risks and growing a more vibrant market-based financing system are necessary to support profitable ventures in new growth areas. Equally important is ensuring support for established firms to become more competitive and efficient through the financing of investments in technology and research and development. A number of priority areas will be addressed in this regard, including policy and infrastructure considerations which are discussed in this Report.

There has been a concerted effort in recent years to promote a stronger alignment of interests in managing risks to financial stability. This recognises the increasing interlinkages in the financial sector and is critical to preserve flexibility for the financial system, while preserving a focus on attendant risks from changes in the financial landscape. Effective inter-agency co-operation and coordination on financial sector issues is currently supported by various arrangements that have been established, including the Financial Stability Executive Committee and well-defined inter-agency co-operation protocols. The Bank also continues to strengthen its collaboration with other agencies and organisations in its efforts to maintain strong defenses against money laundering/terrorism financing risks. In 2016, the Financial Education Network was added to existing collaborative arrangements. It has also been important to align the interests of financial institutions and market participants with actions that promote stability. The establishment of the Financial Markets Committee, along with greater emphasis on risk-aligned compensation systems provided in the revised corporate governance standards for financial institutions, are further steps that were taken to reinforce a shared responsibility for ensuring a sound and well-functioning financial system.

On other fronts, the Bank remains fully engaged in leading and supporting a range of initiatives to increase the efficiency of financial services and enhance Malaysia's long-term economic growth potential. In Islamic finance, efforts are being directed to further develop value-based financing solutions which are underpinned by Shariah principles to deliver greater value for both shareholders and the wider community. The financial industry is also embarking on an important initiative, led by MyClear, to enhance Malaysia's domestic payments capability through the development of an open access infrastructure that will enable more convenient, real-time electronic and mobile retail payments. It will also importantly foster greater and more efficient innovation in retail payment services going forward, further catalysing Malaysia's progress towards becoming a cashless society. Externally, Malaysia's interests will continue to be expanded as part of deeper regional financial integration between countries in the ASEAN region.

While much has been accomplished in an eventful year, the Bank's plate remains full as we enter 2017. The Bank fully expects that initiatives being pursued on multiple fronts, including those outlined above, will continue to strengthen the Malaysian financial system to support current and future economic needs.



**Muhammad bin Ibrahim**

Governor

23 March 2017





# Executive Summary





# Executive Summary

## Risk Developments and Assessment of Financial Stability in 2016

Domestic financial stability was sustained amid bouts of heightened financial market volatility. A subdued economic recovery, geopolitical events, shifting expectations on the pace and timing of interest rate normalisation in the United States and continued volatility in crude oil prices were among the major global themes that drove investor behaviour throughout 2016. Excessive volatility has continued to be largely buffered by the depth of the domestic financial markets and strong domestic institutional investors which supported orderly market conditions. Overall domestic funding conditions were stable, with improvements also observed in the distribution of liquidity across banks. Financial institutions remained well-capitalised and profitable, lending firm support to domestic intermediation activities.

Key potential sources of risks to domestic financial stability continue to stem from high levels of domestic debt, elevated property prices in some segments of residential property and an oversupply of commercial property, and heightened volatility in financial markets. Risks from household lending remained largely contained. Growth in household debt moderated further as households generally scaled back borrowings in line with loan affordability. Total household debt as a proportion of gross domestic product (GDP) was lower at 88.4% (2015: 89.1%), as the pace of moderation in debt slowed below nominal GDP growth for the first time since 2010, potentially marking a turning point for adjustments in household leverage. The debt service ratios of households generally remained within prudent levels and the share of borrowings by vulnerable households reduced further in 2016. Banks have also been gradually increasing the level of provisions and reserves for collective impairments to strengthen buffers against potential loss events. This comes

on the back of higher impairments from household lending, albeit from low levels. A broader deterioration in household asset quality is expected to be reasonably well-contained, owing to macroprudential measures that have been in place since 2012. While these measures are presently judged to be adequate, continued vigilance is required to contain risks from building up again.

The debt burden of households was also eased by the slower growth in average house prices which increased by 5.3%, compared to an average of 9.5% during 2010-2015. The slower growth has been mainly associated with the scaling back of investment purchases, particularly in the higher-priced segments, while demand for affordable housing remained strong. Responsible lending standards have helped to encourage the rebalancing of housing supply towards more affordable segments, but the pace of adjustment continues to be slow with house prices remaining unaffordable for many households. Further price adjustments by private developers will be necessary to meet demand, while contributing to lower household debt.

Risks remained heightened in the office space and shopping complex segments, with new supply outstripping recent historical trends despite signs of softer tenant demand in some sectors. Vacancy rates have continued to rise. Planned additional incoming supply of office and retail commercial space will exert further downward pressure on tenancy and rental rates. Some measures have been taken by authorities to tighten approvals for the construction of commercial buildings. These should continue to be pursued under a carefully designed national planning policy to mitigate risks from oversupply. While banks have small exposures to these property segments, averting deeper imbalances in the commercial property market will be important to contain spillovers to the broader economy.

Business conditions have remained challenging for firms in some sectors. Notwithstanding this, Malaysian firms have continued to maintain reasonably healthy financial positions. Business leverage improved with a slower rate of expansion in both domestic and external business debt. Almost three quarters of external business debt (which comprise inter-company obligations, trade credit and non-resident holdings of ringgit debt bonds and sukuk) present limited funding and currency risks. The debt servicing capacity of businesses continues to be well-supported with a median interest coverage ratio (ICR) of 9.4 times, comfortably above prudent standards. The share of debt that is at risk (defined as debt borne by firms with an ICR of less than two times) remains low at 7.7% (2015: 6.2%) of total corporate debt, mainly attributed to firms in the automotive, real estate and oil and gas (O&G) sectors. Banks have also reduced their credit concentrations to large borrowers.

Malaysia continued to experience two-way portfolio flows during the year. As in previous years, the well-developed financial market with the presence of strong domestic institutional investors continued to provide a stabilising influence for the domestic markets amid significant volatility towards the end of 2016. Ringgit volatility was further exacerbated by speculative activities in the opaque offshore non-deliverable forward (NDF) market and increasing supply and demand imbalances in the onshore foreign exchange (FX) market over the years. Since the implementation of measures announced by the Financial Markets Committee (FMC) in December to deepen and broaden the domestic FX market, ringgit volatility has eased. Aggregate surplus liquidity in the domestic financial system remained supportive of intermediation activities despite declining in line with overall portfolio movements during the year. Banking system liquidity comprising placements, reverse repos and statutory reserves with the Bank remains ample at RM167.4 billion, which can be released to meet liquidity needs. Banks have also increased their capital and long-term funding in recent years, contributing to more stable sources of bank funding.

Net external liabilities of Malaysian banks widened, largely reflecting capital funds maintained by the locally incorporated foreign banks in Malaysia and securities held under custody. Such exposures do not pose significant credit and liquidity risks to the domestic banking system. Domestic banking groups (DBGs) on the other hand continue to maintain a net external assets position, reflecting their expanded overseas

operations and centralised liquidity management practices. The overall quality of overseas assets of DBGs remained intact, although higher levels of impairment were recorded from exposures in some lending segments that were more affected by the decline in oil prices and slower economic conditions. This was within expectations. The prospect for non-bank financial institutions, which are not regulated by the Bank and largely unsupervised, to transmit risks and shocks to the financial system also continues to be limited.

In 2017, conditions are expected to remain challenging for some businesses and households. Some deterioration in loan performance is likely, but this is not expected to be broad-based given the generally strong asset quality of banks, stable labour market conditions and continued economic growth. The ongoing low interest rate environment will also increase challenges for life insurers. Based on the most recent stress tests conducted by the Bank, financial institutions are expected to remain resilient to severe macroeconomic and financial strains.

## Banking Sector

Outstanding financing by the banking system expanded by 5.3% to RM1,521.5 billion in 2016, mainly driven by financing to the household sector. Banks continue to lend to small and medium enterprises (SMEs), which grew by 9.2%. Financing by development financial institutions to targeted growth sectors, including the agriculture sector, expanded by 5.7%. To date, RM3.5 billion in financing has been extended to over 200,000 microenterprises under the *Skim Pembiayaan Mikro*. Also notable has been the performance of agent banks. Transactions conducted through the agent banking network increased to over 100 million transactions valued at RM8.5 billion, performed at more than 7,900 agent banks across the country. Going forward, several key initiatives are being pursued to further improve financing conditions for innovative and new growth businesses. These include lowering entry costs through enabling regulation, leveraging new data sources to reduce information asymmetries, developing a seamless SME financing process and ongoing capacity building programmes to improve the bankability of SMEs. Significant potential also exists to further develop alternative finance in Malaysia to meet an estimated financing gap upwards of RM21 billion through venture capital, leasing and factoring, and crowdfunding solutions.

The profitability of banks improved in 2016, supported by gains from treasury activities and strong financing growth from Islamic banking operations. The wider adoption of technology by banking institutions also continued to deliver efficiency gains and improve customer service experience. Banking transactions conducted through digital channels were more widespread, with mobile transactions in particular, registering a sharp increase in take-up. A number of innovations for onboarding customers, managing customer relationships, facilitating payments and increasing access to banking services for rural communities were also introduced.

The implementation of the Basel III liquidity standards remained a key priority in 2016. Following the finalisation of the Liquidity Coverage Ratio standard in 2015, efforts have shifted towards considering appropriate requirements for banks to comply with the Net Stable Funding Ratio standard. The Bank is also closely monitoring developments on remaining global reforms, as the Basel Committee finalises enhancements to the risk-based capital standards. The Bank is supportive of these changes and will continue to adopt the standards in a manner that is consistent with the risks inherent in the domestic financial system. During the year, the Bank also introduced strengthened standards on credit risk management and stress testing. The management of conduct risks by banking institutions continues to be emphasised, with particular attention to risks associated with the wider adoption of technology in banking services. This includes the adequate protection of confidential customer information in a digital environment.

In an important move to professionalise the banking sector workforce, banking institutions committed to support board members and key employees to attain the Chartered Banker qualification awarded by the Asian Institute of Chartered Bankers. This will provide a strong foundation for upholding high standards of professional conduct, ethics and competence in the banking sector.

Regional banking integration further deepened under the ASEAN Banking Integration Framework. In 2016, the Bank entered into bilateral arrangements with Otoritas Jasa Keuangan, Bangko Sentral ng Pilipinas and the Bank of Thailand, paving the way for greater market access and operational flexibilities for qualified ASEAN banks in support of intra-regional trade and investment activities.

## Insurance and Takaful Sector

The insurance and takaful sector continued to show positive growth in 2016 supported by strong overall capitalisation. In recent years, medical and health insurance/takaful business has increased as a share of total business, reflecting rising health financing costs. Overall insurance penetration, however, has remained flat within the range of 54% to 56% over the last five years. Affordability and access remain key barriers to higher levels of penetration. This is being addressed through various initiatives, including requirements for life insurers and family takaful operators to make basic protection products available through direct distribution channels beginning from 2017, the development of an Insurance Starter Pack to be rolled out nationally for low-income earners, and further developing alternative distribution channels.

In the general insurance and takaful sector, growth was supported by the fire business which offset the impact from slower growth in the motor and marine, aviation and transit business segments. Domestic capacity to underwrite and retain larger and more complex risks remains underdeveloped - an area that will require greater attention to support the ongoing restructuring of the economy and reduce reinsurance premiums outflows. Overall profitability of insurers and takaful operators improved, although losses on motor Third Party Bodily and Death injury claims continued to exceed premiums by a significant margin. Ongoing reforms that are being implemented in the motor insurance sector to achieve pricing that is more aligned to risk and contain losses remain critical to preserve the industry's capacity to support motor risks over the longer term.

The industry moved into the first phase of liberalisation of the motor and fire tariffs from 1 July 2016, where new motor and fire products may be offered at market-based prices while existing motor products under the tariff will continue to be available to the public at prevailing tariff rates. In the second phase which will commence on 1 July 2017, tariffs will be removed for all existing motor products except compulsory motor third party products where tariff rates will be gradually adjusted. This is supported by measures to improve the quality and coverage of data for risk and claims assessments, and safeguards to ensure an orderly transition. The implementation of initiatives under the Life Insurance and Family Takaful Framework also continued to make progress during the year. This will introduce greater flexibility for insurers and takaful

operators, and benefit consumers through better control over costs. Additionally, it aims to promote the development of alternative distribution channels and improve the quality of service provided by insurance and takaful intermediaries.

A number of conduct issues continue to receive close supervisory attention by the Bank. Surrender payments over the past four years have increased above the long-term historical average level, raising concerns over sales practices. Escalating healthcare costs have also contributed to more frequent repricing activity for medical and health insurance/takaful products which can increase difficulties faced by policyholders to maintain their policies. Under more challenging investment conditions, revisions to bonus payments under participating life insurance policies have come under closer scrutiny by the Bank. The Bank continued to take firm actions to ensure fair practices by insurers and takaful operators, including requirements for firms to take specific steps to better manage policyholders' expectations. The shift to plain language policies to help consumers better understand the benefits, exclusions and obligations under insurance and takaful policies also gained further traction during the year. By the end of 2017, more than three quarters of insurance and takaful policies for personal lines of business are expected to be simplified using plain language.

Regional insurance integration progressed a step further during the year with the conclusion of the Seventh Package of Commitments under the ASEAN Framework Agreement on Services. Under the Seventh Package, Malaysia has committed to liberalise the cross-border supply of marine, aviation and transit insurance and insurance broking services effective 20 December 2016.

## Islamic Finance Development

The Islamic finance ecosystem has strengthened further towards meeting the evolving needs of the Malaysian economy. Islamic banking and takaful institutions remain resilient, maintaining healthy financial buffers. Investment intermediation activities have seen encouraging growth, with investment accounts (IA) managed by Islamic banks increasing to RM73.7 billion to account for 12.2% of total Islamic deposits and IA within the Islamic banking system in 2016 (2015: RM47.1 billion, 8.6%). The Bank continues to work with the industry and relevant authorities to encourage more innovative applications of Shariah contracts to meet the

diverse investment and funding needs of the economy. An important part of this has been the issuance of Shariah standards and operational requirements by the Bank, supported by the adoption of robust capital and liquidity standards to provide a strong regulatory foundation for development. This will be complemented by further efforts to introduce more efficient operational arrangements and facilitative legal, tax and accounting regimes. In the takaful sector, a survey conducted by the Bank indicates significant potential for further growth in commercial takaful product lines, in particular catering to SMEs. This would see the takaful industry expand beyond the current dominant motor, fire and personal accident business segments which are mainly targeted at households.

Over the next two years, the development of the Islamic finance industry will continue to focus on enabling greater business diversification, driven by technology, to sustain its growth trajectory and deliver better customer value. An example of this has been the operationalisation of the Investment Account Platform which has facilitated RM20 million of fund-raising exercises since April 2016 to support a variety of business ventures across different industries. Another important development priority is in the area of trade finance facilitation where the Bank aspires for Shariah-compliant trade financing to support 10% of total trade in the next three years.

Efforts to encourage a stronger focus on value-based intermediation as a core premise of Islamic financial solutions shifted into sharper focus during the year. Greater focus will be given to assessing the economic and social impact of Islamic finance along four dimensions: promoting sustainability, institutional quality, inclusivity and diversity, and efficiency in Islamic financial intermediation. The development of a Corporate Value Intent framework to promote high quality disclosures by Islamic financial institutions and innovative applications of *waqf* in funding and payment solutions for social welfare purposes are among the measures being pursued to generate greater value for both shareholders and the wider community. This continued to be supported by a sustained focus on strengthening arrangements for the development of high quality talent for Islamic finance.

## Cross-Sector Developments

Malaysia's debt securities market remains a key source of financing for corporates, rising to account for 37.4% of total corporate financing as at end-2016.

New issuances of corporate bonds during the year were led by firms in the *finance, insurance and real estate; infrastructure; and electricity, gas and water supply* sectors. In the FX market, the implementation of measures by the FMC in December led to improved onshore liquidity and curtailed the disruptive influence on ringgit volatility from speculative transactions in the ringgit NDF market. The measures also reflect a long-standing focus of the Bank on promoting high standards of conduct and transparency in the domestic wholesale financial markets to protect the interests of the general public. The FMC which was established in May has had an important role in providing an inclusive forum to pursue strategies to further develop the domestic financial markets. During the year, the FMC also took further measures to enhance the rate setting methodology for key reference rates and strengthen professional and ethical standards of conduct for wholesale market participants. In addition, the Bank launched the retail Negotiable Instrument of Deposit and Islamic Negotiable Instrument programme in collaboration with the banking industry to encourage retail participation in the domestic financial markets. The programme expands access for retail investors to low-risk money market instruments, thus promoting further depth and liquidity in the domestic financial market.

Local currency settlements in ringgit and renminbi have continued to increase in volume, reducing costs for businesses and contributing to the development of deeper regional financial markets. In 2016, such arrangements were expanded to include ringgit and Thai baht local currency settlements, with preparations underway to implement a similar arrangement for settlements in ringgit and Indonesian rupiah.

The prudential framework was further strengthened with the finalisation of enhanced corporate governance and operational risk management standards which are applicable to financial institutions regulated by the Bank. In the money services industry, the Bank continues to build on successful reforms undertaken since 2011 to further improve the efficiency of money services, encourage the use of authorised channels for remittance services through digitalisation, and promote conditions for an orderly currency exchange market especially during periods of heightened volatility. Further progress was also made on the implementation of action plans under the National Anti-Money Laundering and Countering Financing of Terrorism (AML/CFT) Strategic Plan 2015-2020. This was affirmed by a positive follow-up assessment by the

Financial Action Task Force which noted considerable improvements in Malaysia's compliance with AML/CFT international standards. Vigilance over the use of the financial system to finance terrorism activities remains high and is supported by active collaboration between the Bank and domestic as well as regional authorities. In addition, strong enforcement actions continue to be taken by the Bank against illegal activities and syndicated crimes, working closely with other enforcement agencies.

The Ombudsman for Financial Services commenced operations on 1 October 2016, further strengthening available out-of-court avenues for financial consumers to resolve disputes relating to financial services and products. The Financial Education Network was also established in November, with members comprising regulators and other key financial education stakeholders, to deliver financial education initiatives with greater impact under a coordinated national strategy. To enhance the legal protection of borrowers in dealings with credit providers, the Bank is working with the Ministry of Domestic Trade, Co-operatives and Consumerism and the Ministry of Urban Wellbeing, Housing and Local Government to formulate a new Consumer Credit Law that will provide more comprehensive protection for borrowers, covering responsible and fair lending practices, debt relief, disclosures and debt recoveries.

To provide a safe and supportive regulatory environment for financial technology (FinTech) innovations, the Bank has established the Financial Technology Enabler Group, tasked to formulate policy measures and strategies for the adoption of technological innovations in the financial services industry. As a key first step, the Regulatory Sandbox was introduced in October, allowing the experimentation of innovative FinTech solutions in a live market environment with appropriate safeguards. Moving forward, the Bank will embark on several priority development areas to further develop the FinTech ecosystem in Malaysia. These include initiatives that will facilitate open application programme interface (API) models, common Know-Your-Customer (KYC) utilities, distributed ledger applications and cloud computing, while strengthening resilience to cyber threats.

## Payment and Settlement Systems

The payment and settlement systems in Malaysia remained resilient and continued to operate reliably without major disruptions. Amid the growing threat of cyberattacks globally, effective management of



cyber risks was a key focus of the Bank's oversight activities. During the year, the industry took additional measures to strengthen existing security controls. The implementation of the new Real-time Electronic Transfer of Funds and Securities System (RENTAS) further improved operational efficiency, risk management and cross-border payment services. In the area of retail payments, fraud losses remained low. Two major initiatives to enhance the payment card infrastructure in Malaysia – the migration from signature to Personal Identification Number (PIN) verification to improve security, and the implementation of Malaysian Chip Card Specifications for domestic debit cards to enhance interoperability – continued to make good progress. Efforts are now being directed to encourage the use of PIN before it is made mandatory on all domestic payment card transactions effective 1 July 2017.

Encouraging progress continues to be made towards achieving the electronic payment (e-payment) targets set out in the Financial Sector Blueprint 2011–2020, driven by increased adoption of credit transfers and payment card transactions. Cheque usage has correspondingly continued to decline. The regulatory measures introduced under the Payment Card

Reform Framework, which took effect in 2015, are continuing to have an important effect in lowering transaction costs for e-payments and driving behaviour change. In particular, lower Merchant Discount Rates (MDR) delivered an estimated cost savings of about RM168 million to merchants in 2016, while the establishment of the Market Development Fund in 2015 has encouraged the rapid expansion of POS terminals. Measures taken to improve transparency and choice for merchants have also strengthened competition among debit card networks.

A key strategic priority of the Bank in 2017 will be to facilitate open and fair access to shared payment infrastructures by banks and non-bank payment service providers with the view to create a more competitive payment landscape that fosters continuous improvements in payment services. This includes facilitating interoperability among mobile payment schemes leveraging on common infrastructure for switching, clearing and settlement. This seeks to tap into the significant potential for mobile payments, represented by more than 40 million mobile phone subscriptions in Malaysia, to displace cash and to advance financial inclusion.



# Risk Developments and Assessment of Financial Stability in 2016

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# Risk Developments and Assessment of Financial Stability in 2016

## OVERVIEW

Domestic financial stability remains preserved and well-supported by sound institutions and orderly financial market conditions

Domestic financial stability was sustained throughout the year amid bouts of heightened market volatility. A subdued economic recovery, geopolitical events, shifting expectations on the pace and timing of interest rate normalisation in the United States (US) and continued volatility in crude oil prices were among the major global themes that drove investor behaviour throughout 2016. In the domestic financial markets, portfolio flows largely reflected a broader retreat of funds from emerging market economies (EMEs) coupled with higher investments abroad by domestic institutions to improve diversification. Excessive volatility continued to be largely buffered by the depth of the domestic financial markets and strong local institutional investors which supported orderly market conditions. The lowering of the statutory reserve requirement (SRR) in February also preserved adequate liquidity within the banking system. Overall domestic funding conditions were stable, with improvements also observed in the distribution of liquidity across banks. Financial institutions remained well-capitalised, with sustained profitability lending firm support to domestic intermediation activities.

The Financial Stability Committee (FSC) of the Bank met three times in 2016. The FSC views that key potential sources of risks to domestic financial stability continue to stem from high levels of domestic debt, elevated property prices in some segments of residential property and an oversupply of commercial property, and heightened volatility in financial markets. The FSC

judges that risks associated with household and corporate sector debt are largely contained and current macroprudential measures are adequate. Nevertheless, increased vigilance is required over commercial property developments, loan performance in some business segments and lending activities of non-bank financial institutions.

In 2017, conditions are expected to remain challenging for some businesses and households. Some deterioration in loan performance is probable, but not expected to be broad-based owing to the generally high asset quality of banks, stable labour market conditions and continued economic growth. Financial institutions are expected to continue to intensify their risk management, and proactively identify and manage problem loans, supported by robust provisioning practices. Financial institutions are also expected to uphold the highest standards of market conduct and integrity. Risks from increased volatility in financial markets and the corresponding impact on market liquidity will also continue to be a key focus of the FSC. While stabilising factors such as the depth and diversity of domestic financial markets have so far contained broader spillovers, more pronounced disruptive influences, if left unchecked, could lead to more persistent market dislocations. The FSC will continue to monitor the potential spillovers and unintended consequences arising from the on-going global regulatory reforms. These include the growing significance and complexity in the operations of niche players such as moneylenders, leasing and money services providers, as well as new players in the financial technology (FinTech) segment. The prolonged low interest rate environment will also increase challenges for life insurers to balance the reasonable expectations of policyholders and the long-term sustainability of insurance funds. The FSC will continue to oversee the rigorous conduct of stress testing, including the use of multi-year stress tests, to adequately capture a broad range of risk factors and

their interactions. Based on the most recent stress test results (presented in this Chapter), the Malaysian financial system is expected to remain resilient against severe market, credit and liquidity shocks.

## MANAGING RISKS ARISING FROM HOUSEHOLD INDEBTEDNESS

### Household debt sustained its moderating growth momentum since 2010

In 2016, the annual growth in total household debt moderated further to 5.4% (2015: +7.3%; 2010: +14.2%), extending the slower pace of growth sustained since 2010 (Chart 1.1). Total outstanding household debt stood at RM1,086.2 billion as at end-2016. The bulk of household debt (62.6%) continued to be secured by properties and principal-guaranteed investments which contribute to wealth accumulation. Demand for financing of house purchases remained relatively robust with outstanding housing loans expanding further by 9.1% (2015: +11%). Other than home purchases for own occupation, households have generally scaled back other borrowings in line with loan affordability. This was observed in the markedly slower expansion in outstanding financing by households for the purchase of non-residential properties (mainly shops) (+3.5%; 2015: +8.1%). In addition, borrowings for the purchase of cars and securities both declined by 0.8% and 1.5% (2015: +3.5% and +1.7%) respectively during the year. Cost pressures, however, continued to weigh on households in urban centres, resulting in slightly higher growth in personal financing and credit card balances which increased by 4.8% (2015: +4.6%) and 3.4% (2015: +1.9%) respectively. The share of these loans to total household debt, nevertheless, remained stable at 18.4% (2015: 18.5%). As at end-2016, total household debt as a proportion of gross domestic product (GDP) was slightly lower at 88.4% (2015: 89.1%), as the growth in household debt slowed below nominal GDP growth for the first time since 2010, potentially marking a turning point for adjustments in household leverage (Chart 1.2).

The capacity of households to service debt has generally remained firm. Average income recorded a modest growth of 5.5% (2015: +5.7%). While the unemployment rate edged higher to 3.5% (2015: 3.1%), this was mainly attributed to the higher number of new entrants to the job market who are less likely to have

accumulated significant debt burdens. Redundancies have been industry-specific rather than generalised, with the oil and gas (O&G) industry being the most affected. Households also maintained strong financial buffers at the aggregate level. Both household financial assets and liquid financial assets remained high on aggregate, accounting for 2.1 and 1.4 times of debt respectively. Notably, household debt grew in line with financial assets with growth rates converging for the first time since 2012 (Chart 1.3). In value terms, household financial assets increased by RM113.4 billion, compared with an increase in debt of RM55.6 billion. High holdings of deposits and deposit-like instruments (which represent 43% of household financial assets) continue to provide households with considerable flexibility to adjust to unexpected changes in income or expenditures. This is more evident among higher-income households which also account for a larger share of household debt (refer to box article on 'Looking Beyond Headline Household Debt Statistics'). Including housing wealth which recorded a compounded annual growth rate of about 10% over the past seven years, the ratio of total household asset to debt remained high and stable at 3.5 times (Chart 1.4).

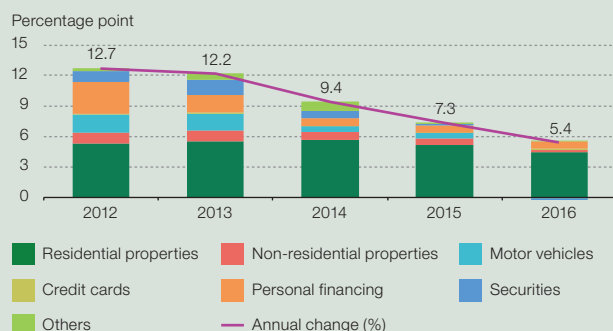
### Share of borrowings by vulnerable households reduced further, improving the quality of the overall loan portfolio

As previously reported, households with monthly earnings of up to RM3,000 continue to be more vulnerable owing to low financial buffers and higher leverage. The share of borrowings by these households declined further to account for 22.2% (2015: 22.8%; 2014: 24.3%) of total household debt (Chart 1.5). Bank exposures to this group were similarly lower at 19.1% (2015: 19.6%; 2014: 20.9%) of total bank financing to households. Of this debt, about half is in the form of fixed-rate financing, which mitigates the impact of changes in borrowing costs on debt servicing capacity. In 2016, aggregate leverage (measured as a ratio of outstanding debt to annual income) of this group increased slightly to 8.1 times (2015: 7.7 times). This was largely driven by higher borrowings for house purchases, which grew by 4.2% (2015: +1.6%). It is important that measures announced by the Government to improve the eligibility of lower-income earners for house financing continue to be guided by sound affordability assessments in order to ensure further debt accumulation will remain within prudent levels.

## Household debt sustained its moderating growth since 2010

Chart 1.1

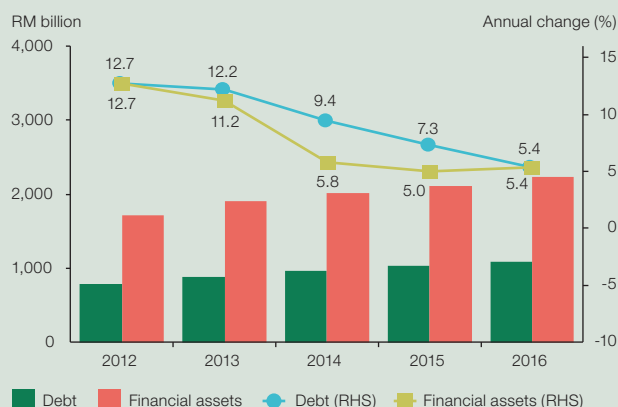
### Household Sector: Contribution to Growth in Debt



## Growth in household financial assets matched that of household debt

Chart 1.3

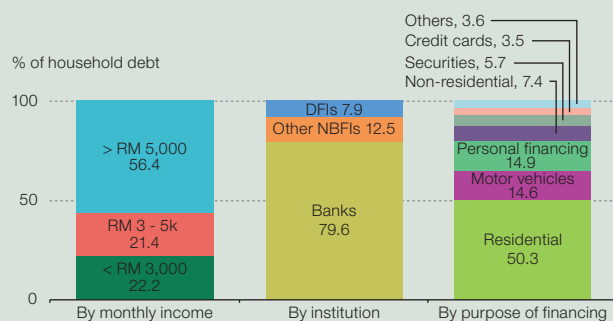
### Household Sector: Debts and Financial Assets



## Share of borrowings by vulnerable households reduced further

Chart 1.5

### Household Sector: Profile of Borrowings

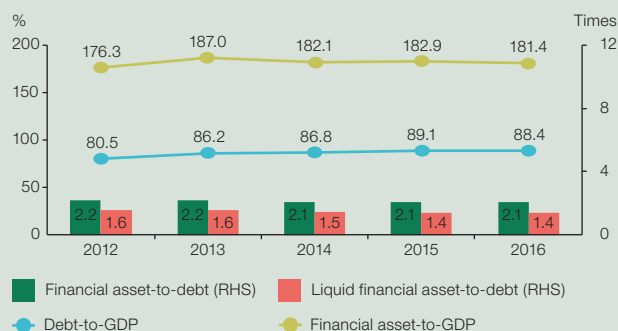


Source: Bank Negara Malaysia, Bloomberg, Department of Statistics, Malaysia, National Property Information Centre, Securities Commission Malaysia and internal computation  
\* Surrender value

## Households maintained aggregate financial assets at two times of debt

Chart 1.2

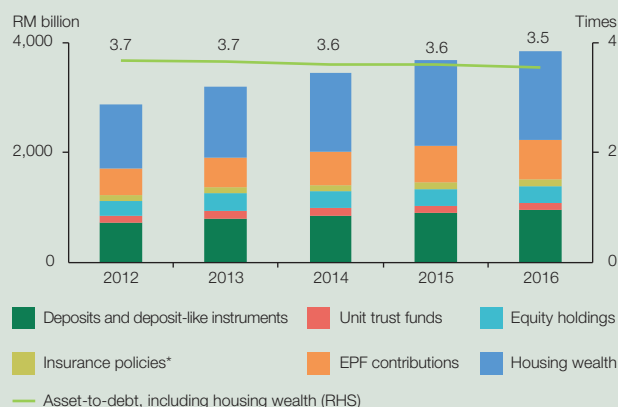
### Household Sector: Key Ratios



## Including housing wealth, household assets stood above three times of debt

Chart 1.4

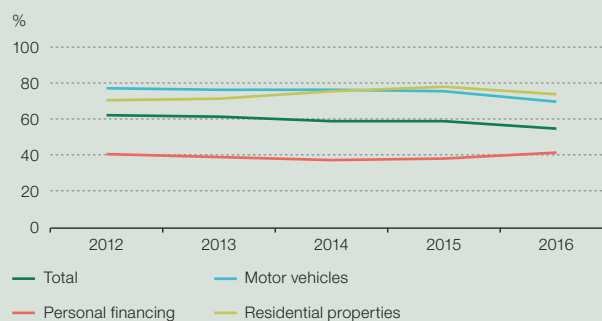
### Household Sector: Composition of Assets



## Sustained supply of financing to eligible households

Chart 1.6

### Household Sector: Approval Rate



Risks to domestic financial stability arising from high household indebtedness continue to be largely mitigated by sound credit underwriting standards and risk management practices of financial institutions. Banks remain the largest providers of financing to households, accounting for about 80% of total household debt. Adjustments to enhance processes for loan affordability assessments, such as adopting prudent debt service ratios and definitions of debt obligations and variable income, are mostly complete. Loan approval rates were marginally lower as some financial institutions raised the minimum net disposable income threshold as a prudent measure to improve the financial buffers of borrowers (Chart 1.6). For households in the more vulnerable segment, this will be important to mitigate the risk of default in the event of an increase in the debt servicing burden or disruptions to income. Banks have also been generally prudent in the pricing of risk despite intense competition in the retail financing segment. Overall, the weighted average lending rate for new household financing was lower at 5.03% in the second half of 2016 (1H 2016: 5.16%). This follows the reduction of 25 basis points in the Overnight Policy Rate to 3.00% in July 2016. Correspondingly, the weighted average base rate also continued to trend lower to 3.61% (December 2015: 3.77%).

Lending practices among non-bank financial institutions (NBFIs) remain a key focus of the Bank's surveillance and engagements with other authorities primarily responsible for such institutions. Two of the largest NBFIs, which account for about 40% of total NBFI lending to households, are development financial institutions (DFIs) supervised by the Bank. The Bank also collaborates closely with the Malaysia Co-operative Societies Commission (SKM) to promote improvements in loan affordability assessments, particularly among the medium- and large-sized credit co-operatives. For the year, the average size of personal financing (which represents the bulk of NBFIs lending) approved by NBFIs was lower at around RM26,000. This compares with an average of RM68,000 in the period prior to the implementation of responsible financing requirements. Outstanding personal financing granted by NBFIs, including major credit co-operatives, however, grew at a faster rate of 4.8% in 2016 (2015: +3.4%; 2012: +30.6%). Concerns remain that some NBFIs may inappropriately ease lending standards, thus calling for continued vigilance and financial education of borrowers.

Since the introduction of the measures on responsible financing in 2012, more prudent debt service ratios

(DSRs) have been observed for new household borrowings granted by banks and NBFIs. In 2016, about 41% of borrowers with newly approved loans had a DSR of less than 40%. Based on a more granular analysis by the Bank, the overall median DSR for outstanding household debt was about 33% as at end-2015 (refer to box article on 'Looking Beyond Headline Household Debt Statistics'). The Credit Counselling and Debt Management Agency (AKPK) also continued to expand its outreach, providing financial counselling and advice to about 121,000 borrowers of banks and NBFIs in 2016. These include advisory and debt resolution programmes delivered for employees in the O&G industry who had been laid off, to assist them in managing their financial obligations. For the year, AKPK received a steady rate of enrolment into its debt management programme, an indication that borrowers are getting the help that they need to proactively manage debt. A significant proportion (45%) of these borrowers earn less than RM3,000 per month.

The overall quality of lending to households was sustained. Impaired and delinquent (loan-in-arrears of between one and three months) loan ratios in the banking system remained low (Table 1.1). The level of total impaired loans, however, increased by 6.3% compared to the previous year, mainly from borrowings for investment purchases of property (including non-residential properties), and personal financing. Based on the Bank's on-going engagements with banks and key NBFI lenders, delinquencies were more pronounced among borrowers who were more reliant on variable income sources, with defaults also observed following job losses in specific sectors.

### Banks have sufficient excess capital to absorb potential losses from household portfolio under simulated stressed events

Potential losses to banks in the unlikely event of simultaneous household default incidents under simulated severe assumptions are estimated at RM57.6 billion (Table 1.2). Of this amount, potential losses emanating from the vulnerable household group are estimated at RM11.5 billion. These estimates are well within the excess capital buffers (above the regulatory minimum) of RM124.5 billion held by banks as at end-2016. The estimated losses have not taken into account available savings and financial buffers of individual households or early responses by the banks

Table 1.1

**Household Sector, Banking System: Gross Impaired Loans and Gross Delinquent Loans**

|                                        | Gross Impaired Loans |            |            |                   |             |            | Gross Delinquent Loans |            |            |                   |              |            |
|----------------------------------------|----------------------|------------|------------|-------------------|-------------|------------|------------------------|------------|------------|-------------------|--------------|------------|
|                                        | Ratio (%)            |            |            | Annual Change (%) |             |            | Ratio (%)              |            |            | Annual Change (%) |              |            |
|                                        | 2014                 | 2015       | 2016       | 2014              | 2015        | 2016       | 2014                   | 2015       | 2016       | 2014              | 2015         | 2016       |
| <b>Overall</b>                         | <b>1.2</b>           | <b>1.1</b> | <b>1.1</b> | <b>-1.0</b>       | <b>-1.6</b> | <b>6.3</b> | <b>1.8</b>             | <b>1.5</b> | <b>1.4</b> | <b>-5.3</b>       | <b>-10.5</b> | <b>1.8</b> |
| Purchase of residential properties     | 1.3                  | 1.1        | 1.1        | -3.9              | -1.4        | 6.5        | 1.4                    | 1.3        | 1.2        | -2.6              | 1.7          | 4.6        |
| Purchase of non-residential properties | 0.6                  | 0.6        | 0.7        | 0.3               | -0.1        | 18.4       | 0.7                    | 0.7        | 0.9        | 6.9               | -1.6         | 29.9       |
| Motor vehicles hire purchase           | 1.2                  | 1.0        | 0.9        | 1.8               | -19.8       | -11.1      | 3.9                    | 2.9        | 2.8        | -11.4             | -25.5        | -5.0       |
| Personal financing                     | 1.7                  | 1.9        | 2.1        | 3.4               | 16.1        | 19.9       | 1.1                    | 1.1        | 1.1        | -0.3              | 2.7          | 7.6        |
| Credit cards                           | 1.2                  | 1.3        | 1.4        | -6.6              | 10.8        | 6.0        | 1.5                    | 1.3        | 1.2        | 1.2               | -13.3        | -1.6       |

Source: Bank Negara Malaysia

Table 1.2

**Household Sector, Banking System: Potential Losses Based on Severe Assumptions on Probability of Default (PD) and Loss Given Default (LGD)**

|                                       |                                         | Residential properties | Motor vehicle hire purchase | Personal financing | Credit cards   | Total <sup>1</sup> |
|---------------------------------------|-----------------------------------------|------------------------|-----------------------------|--------------------|----------------|--------------------|
| Stressed PD (%)<br>(Baseline PD, %)   |                                         | 11.4<br>(3.8)          | 13.9<br>(4.6)               | 13.0<br>(4.3)      | 14.7<br>(4.9)  |                    |
| Stressed LGD (%)<br>(Baseline LGD, %) |                                         | 40.0<br>(17.9)         | 75.0<br>(51.2)              | 95.0<br>(75.3)     | 95.0<br>(67.6) |                    |
| Potential losses<br>(RM billion)      | All borrowers                           | 20.5                   | 15.1                        | 8.2                | 5.1            | 57.6               |
|                                       | – Borrowers earning ≤ RM3,000 per month | 2.5                    | 4.7                         | 2.3                | 0.8            | 11.5               |
|                                       | – Borrowers earning ≤ RM5,000 per month | 6.1                    | 8.8                         | 4.0                | 2.1            | 23.2               |

<sup>1</sup> Includes other household loans such as financing for the purchase of non-residential properties and consumer durables

Source: Bank Negara Malaysia

to mitigate losses. Actual losses are therefore very likely to be considerably lower under the simulated scenarios. Banks have also been gradually increasing the level of provisions and regulatory reserves as part of on-going measures to strengthen buffers against potential loss events.

## MANAGING CREDIT RISKS IN THE DOMESTIC PROPERTY MARKET

During the year, total exposures of Malaysian financial institutions to the domestic property market expanded by 8% (2012-2015 average: +10%) to RM793.9 billion (Chart 1.7). This amounted to 26.7% (2015: 25.5%) of

total financial system assets as at end-2016. Banks continue to account for a bulk of the exposures, with about 90% in the form of end-financing for the purchase of residential and non-residential properties. Growth in bank financing for the purchase of residential properties moderated slightly to 9.2% (2010-2015 average: +12.9%) in line with the softer housing market.

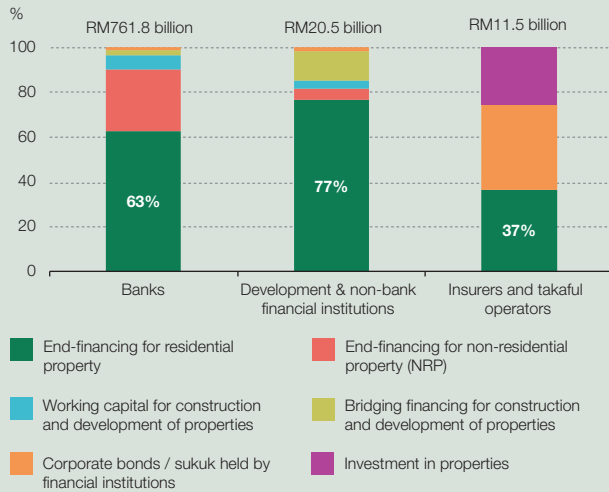
### Residential property market

In the first nine months of 2016, the annual growth in average house prices – measured by the Malaysian House Price Index (MHPI) – was lower at 5.3%, compared to an average of 9.5% during 2010-2015.



Chart 1.7

**Property Market: Financial Institutions' Exposures to the Property Market**



Source: Bank Negara Malaysia and financial statements of non-bank financial institutions

This reflects a broad-based moderation in aggregate house price growth to levels closer to the long-term average house price growth of 5.5% over the period 1990-2009 (Chart 1.8 and Table 1.3). Demand for affordable housing remained strong due to demographic factors such as Malaysia's relatively young labour force and continued urbanisation. The slower growth in house prices therefore was mainly associated with the scaling back of investment purchases, particularly in the higher-priced segments. In the first nine months of 2016, the year-to-date annual growth in overall housing transactions in both the primary and secondary markets

Chart 1.8

**Property Market, Residential: Growth of Malaysian House Price Index (MHPI) and Long Term Average**



p Preliminary

Source: National Property Information Centre

declined by 14.3% and 10.8% (2015: -4.2% and +2%) in volume and value terms respectively. The decline in the value of transactions was driven by the soft demand in the higher-priced segments. Unsold housing units increased to 14,193 units (2015: 10,163 units) as at end-September 2016, mainly in the more expensive and high-rise segments. Rather than lowering prices, some property developers opted to convert high-rise residential units to commercial accommodations (such as hotel suites) in efforts to clear unsold housing stock.

**House prices continue to increase but at a more moderate pace**

Despite moderating house prices, houses remain unaffordable for many households. Based on estimates by the Bank, a household with a median income of RM4,585 (without any other debt obligations or savings) can only

Table 1.3

**Property Market, Residential: Growth of MHPI by Selected State and House Type**

|               | 2014              | 2015 | 1Q'16 | 2Q'16 | 3Q'16p |
|---------------|-------------------|------|-------|-------|--------|
|               | Annual change (%) |      |       |       |        |
| Kuala Lumpur  | 10.4              | 7.4  | 7.3   | 8.8   | 5.1    |
| Selangor      | 9.7               | 8.1  | 8.0   | 8.5   | 7.5    |
| Johor         | 13.1              | 5.5  | 9.0   | 7.6   | 5.5    |
| Penang        | 13.3              | 7.6  | 6.2   | 5.8   | 3.4    |
| Malaysia      | 9.4               | 7.4  | 7.0   | 6.9   | 5.3    |
| Terraced      | 10.9              | 6.2  | 7.3   | 7.3   | 5.6    |
| Semi-detached | 7.5               | 7.8  | 5.4   | 4.1   | 5.0    |
| Detached      | 7.5               | 8.8  | 6.5   | 7.2   | 3.7    |
| High-rise     | 10.7              | 2.2  | 8.3   | 8.2   | 6.6    |

p Preliminary

Source: National Property Information Centre



afford to buy a house priced about RM260,000, after taking into account living expenses. This compares with the national average house price of RM334,736 as at end-September 2016, and average transacted house prices of between RM435,000 and RM1.1 million in urban centres. In 2016, the Government mandated all new houses priced up to RM300,000 to be limited to first-time house buyers. While this price level provides a reference point for the pricing of newer launches by developers, thereby facilitating a rebalancing of housing supply towards more affordable segments, the pace of adjustment continues to be slow. In the first half of 2016, only 28.6% (2015: 26.3%) of new launches comprised housing units priced below RM250,000, compared to 45.1% (2015: 32.8%) for units priced between RM250,000 and RM500,000, and 26.3% (2015: 40.9%) for units priced above RM500,000. While additional supply of affordable units is expected to enter the market from on-going initiatives by various government agencies and PR1MA to build more affordable houses, further price adjustments by private developers will be necessary to meet demand and reduce the debt burden for potential house buyers.

### Access to credit remains ample for end-financing for affordable houses

Sustained demand for affordable housing supported the continued expansion in end-financing by banks for the purchase of residential properties. During the year, a total of 456,197 (2015: 474,225) housing loan applications were received by banks. The majority (61%) of applications were for the purchase of houses priced below RM500,000, of which half were for houses priced below RM250,000. The rejection rate for housing loan applications fell further to 23.6% (2012-2015 average: 26.1%), reflecting greater alignment between bank lending standards and borrowing behaviour.

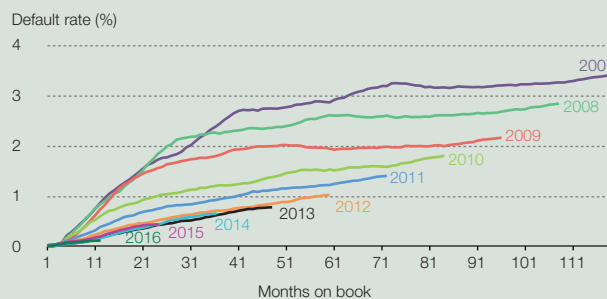
The overall quality of banks' housing loans remains sound, sustained by prudent lending and valuation practices. As at end-2016, about 65% of housing loans had an outstanding loan-to-value ratio of 80% and below, providing banks with a comfortable buffer against negative equity. The profile of banks' housing loans also remained fairly stable during the year. Financing extended for the purchase of houses priced below RM500,000, which are at lower risk of significant price corrections due to sustained strong demand, accounted for 82% of outstanding house financing.

About 72% of housing loan borrowers constituted first-time buyers of houses priced below RM500,000. Overall, about 84% of housing loan borrowers had only one outstanding housing loan. Such borrowers have strong incentives to maintain loan repayments in an event of financial stress or negative equity on their homes, compared to investment buyers. The annual growth in the number of borrowers with three or more outstanding housing loans (a proxy for speculative buyers) slowed further to 1.4% (2015: +3.1%), compared to the much higher expansion of 15.8% last observed in 2010. Such borrowers accounted for only 2.8% (2015: 3%) of total housing loan borrowers. The number of housing loans settled within three years (the typical duration required to complete construction after a property is acquired) – another indication of speculative purchases – similarly eased to 11.9% (2015: 13%) of total settled housing loans.

The vintage default rates for housing loans originated across the years since 2007 continue to show improvement (Chart 1.9). This reflects the stable and improving credit profile of housing loans in the banking system. The share of impaired and delinquent housing loans also remained stable and low at 1.1% and 1.5% respectively. Based on a single factor sensitivity analysis conducted on the housing loan portfolio of banks, excess capital buffers of the banking system would remain sufficient to cover about six times the estimated expected losses. The sensitivity analysis assumed a stressed probability of default (PD) of more than 11% (three times the baseline PD of 3.8%) and a severe correction of 40% in house prices.

Chart 1.9

#### Property Market, Banking System: Vintage Analysis for Housing Loans



Note: Data include impaired loans written-off by banks

Source: Bank Negara Malaysia

## Non-residential property market

Financial institutions' exposures to the non-residential property market accounted for about 27% of total exposures to the overall property market. The bulk of exposures comprised end-financing by banks for the purchase of shops, which accounted for 5.3% of banks' total outstanding loans. Exposures to the office space and shopping complex segments, where oversupply is more acute, only accounted for 3.4% of banks' total outstanding loans. The annual growth in bank financing for the purchase of non-residential properties slowed to 6.1% (2015: +10.6%) (Chart 1.10), partly reflecting the moderation in business activities, particularly in the O&G sector. The construction of mixed property developments further increased linkages between conditions in the residential and non-residential property markets.

Commercial property transactions (shops, office space and shopping complexes) registered a decline of 29.1% and 15.5% (2010-2015 average: -1.5% and +12.3%) in volume and value terms respectively in the first nine months of 2016. This trend was observed across all the major cities. More modest investor demand for shops was observed, consistent with developments in the housing market given that shops are viewed as an alternative investment asset class to houses. The number of borrowers purchasing multiple shop units or combined shop and residential units grew at a slower pace of 5.8% (2015: +9.4%). Reflecting

slower business activities, overall transactions for shops declined by 28.9% to 9,687 units in the first nine months, compared to 13,630 units during the same period in 2015. The corresponding transacted value also declined by 34.7% to RM7 billion during the period. Adjustments in supply by developers, nevertheless, reduced the overhang of unsold shop units and contained risks of oversupply from rising further. In the first nine months, planned supply and units under construction contracted by 19.4% and 14.7% respectively (2010-2015 average: +4.9% and +12.1%). The adjustment helped support rental rates, particularly in the Klang Valley, at an average of RM4.4 per square foot.

Risks remained heightened in the office space and shopping complex segments, with new supply outstripping recent historical trends despite signs of softer tenant demand, notably in the O&G and financial services sectors amid announced downsizing and cost-control measures<sup>1</sup>. In the office space segment, total stock expanded further by 1.2% (2010-2015 average: +4%) to 220.4 million square feet. As a result, the already high average vacancy rate worsened further to 17.1% (2010-2015 average: 16.3%) (Chart 1.11). Planned incoming supply of office space will continue to exert downward pressure on rental rates. The average rental rate of office space in the Klang Valley remained depressed at RM5.90 (2015: RM5.94) per square foot per month, with owners of some older buildings resorting to offering rent holidays to attract or retain tenants.

Chart 1.10

### Property Market, Non-residential: Loan Growth and Contribution to Growth by Segment

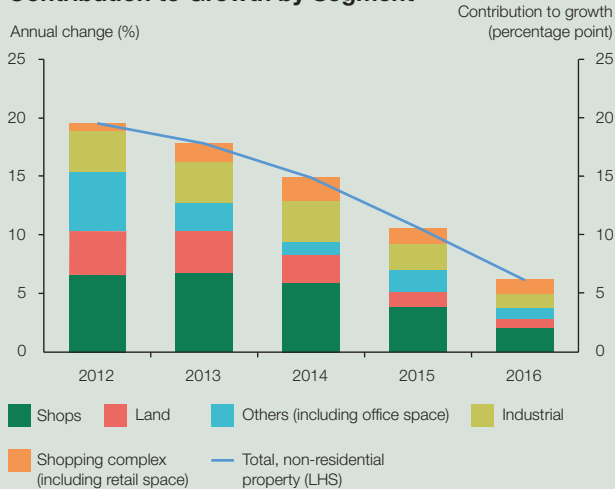
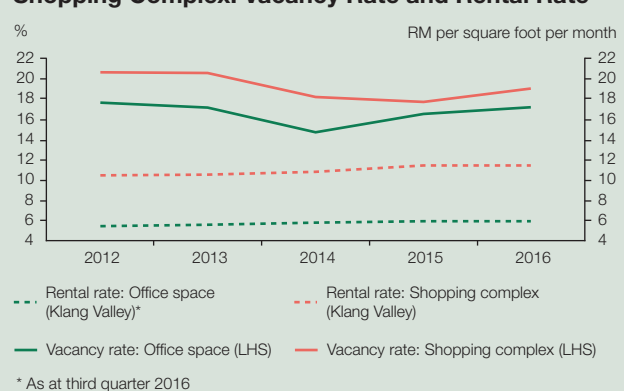


Chart 1.11

### Property Market, Non-residential, Office Space and Shopping Complex: Vacancy Rate and Rental Rate



Source: National Property Information Centre, Knight Frank, Jones Lang Wootton and internal computation

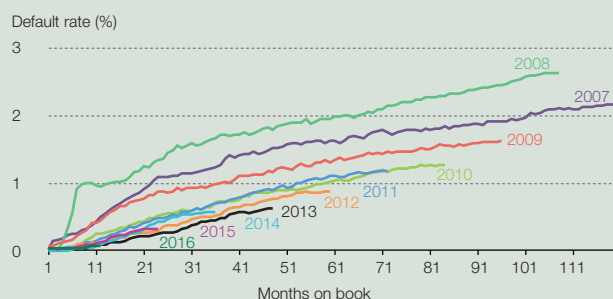
<sup>1</sup> Quarterly Property Market Report by Jones Lang Wootton.

About 5.5 million square feet (2010-2015: +2.8 million square feet per annum) of new office space per year is expected to be added to the Klang Valley office market over the next three years. In the shopping complex segment, total stock expanded further by 7.2% (2010-2015 average: +5.5%) to 155.9 million square feet. The average vacancy rate edged higher to 19% from 17.7% in 2015 (2010-2015 average: 19.5%), partly reflecting consolidation among some retailers. While average rental rates remained stable, an estimated 19.3 million square feet (2010-2015: +16.2 million square feet per annum) of incoming supply of retail space in the next two years is likely to affect tenancy and rental rates.

Direct risks to banks from exposures to the office space and shopping complex segments remain small, supported by sound lending and valuation practices. Similar to housing loans, vintage default rates for loans to purchase non-residential properties originated across the years since 2007 continued to improve (Chart 1.12). The overall delinquency and impairment ratios for end-financing provided by banks for the purchase of non-residential properties also remained low at 0.7% and 1% (2015: 0.4% and 0.9%) respectively. Notwithstanding this, an oversupply of commercial properties, if left unchecked, may lead to deeper imbalances in the property market with spillovers to the other parts of the economy. A comprehensive and carefully-designed national planning policy, including staggering the supply of large office space and shopping complexes, is critical to manage this risk. Measures such as that taken in April 2016 by the Ministry of Federal Territories to tighten approvals for construction of new office buildings are therefore considered prudent.

Chart 1.12

#### Property Market, Banking System: Vintage Analysis for Loans to Purchase Non-residential Property



Note: Data include impaired loans written-off by banks

Source: Bank Negara Malaysia

## MANAGING CREDIT RISK EXPOSURES TO BUSINESSES

In 2016, total outstanding business sector debt grew more moderately by 8.6% (2015: +12.7%) to RM1,326.4 billion or 107.9% (2015: 105.5%; 1998: 131.7%) of GDP. Loans to the small- and medium-sized entities (SMEs) remained healthy, expanding by 9% (2015: +14.6%). New corporate bond and sukuk issuances expanded by 14.2% (2015: +18.8%) (Chart 1.13), mainly in the infrastructure, real estate and telecommunication sectors. Business conditions remained challenging for firms in some sectors. Firms in the O&G-related (including shipping) industries continued to adjust to structural changes following lower commodity prices. In the real estate and automotive sectors, financial performance was weighed down by slower demand, while import-oriented businesses and firms with large foreign currency (FCY) denominated borrowings were more adversely affected by the weaker ringgit.

Despite the challenging economic environment, overall, Malaysian firms continued to maintain reasonably healthy financial positions. The median debt-to-equity ratio of Malaysian non-financial corporations (based on 120 non-financial firms listed on Bursa Malaysia that account for 85% of market capitalisation) improved to 43.6% (September 2015: 46.1%) as at end-September 2016. Aggregate leverage remained below levels observed in EMEs (Chart 1.14). It was also within historical averages both prior to and after the global financial crisis, and below the levels observed just prior to the onset of the Asian financial crisis. About 74% of total outstanding debt comprised domestic borrowings, of which only 6% were denominated in FCY. Domestic business loans grew at a slower rate of 4.8% (2015: +7.7%) in line with developments in the Malaysian economy (Chart 1.15). Access to financing for most businesses remained generally favourable, with little sign of broad-based credit tightening. Overall loan rejection rates were sustained at around 16% (2015: 15%). Some banks, however, were more cautious in lending to sectors weighed down by a weaker outlook on performance, such as the O&G, automotive and real estate sectors. This saw a longer time taken by some banks to approve loans, due to additional loan documentation requirements to support banks' assessments of cash flows and financial buffers of firms in these sectors.

In addition, business exposures to refinancing risks reduced over the years with the lengthening of the average maturity of business sector debt. The average maturity of new corporate bond and sukuk issuances increased from 7.8 years in 2013 to 11.9 years in 2016 (Chart 1.16), while the average maturity of bank borrowings at origination also increased from seven years in 2013 to eight years in 2016. Overall, about 73% of business debt comprised medium- to longer-term debt, hence reducing the susceptibility of firms to significant changes in borrowing costs.

### Risks to domestic financial stability from external and foreign currency corporate debt are largely mitigated

Risks to financial stability from external exposures of non-financial corporations continue to be largely mitigated. Total outstanding external debt of businesses – mainly comprising overseas borrowings – expanded at a slower pace of 17.9% (2015: +24.7%) in 2016. Total external debt represented 25.8% (2015: 23.7%) of total business debt or 27.8% (2015: 25.1%) of GDP (Chart 1.17). The higher external debt was attributed to new borrowings and exchange rate valuation effects. Borrowings from onshore financial institutions that are denominated in FCY accounted for another 4.6% of total corporate debt or 4.9% of GDP. Almost half (49%) of external business debt are inter-company obligations (mainly by local outfits of multinational corporations) which pose relatively low funding and liquidity risks. Trade credit and non-resident holdings of ringgit-denominated corporate bonds and sukuk, which accounted for about 22% of total business external debt, also limit business exposures to currency risks. In addition, the share of long-term external borrowings with maturities exceeding one year remained stable at about 70% of total corporate external debt. This further mitigates short-term rollover risk.

Most of the external borrowings of businesses are backed by FCY receipts from overseas operations or hedged with onshore financial institutions. Under the approval regime for FCY borrowings which has been in place in Malaysia for many years, non-financial corporations are required to obtain the Bank's approval for FCY borrowings exceeding RM100 million equivalent from non-resident financial institutions, special purpose vehicles and other unrelated entities. Firms seeking approval for external borrowings must be able to demonstrate adequate debt servicing capacity from

FCY revenue streams or through the use of financial derivatives to hedge against currency risks, thus containing excessive FCY leverage. Borrowings must also be for productive purposes. Financial institutions and corporations must additionally comply with reporting requirements which enable the Bank to monitor significant exposures and obtain early insights into heightened vulnerabilities. Measures announced by the Bank in December 2016 to liberalise the onshore ringgit hedging market further increased the flexibility for firms to manage foreign exchange (FX) risks. Specifically, residents can now actively hedge US dollar and Chinese renminbi exposures up to a limit of RM6 million equivalent per bank following a one-off declaration of non-participation in speculative activity.

Most businesses maintained generally healthy balance sheets and financials that lend continued support to their debt servicing capacity (Chart 1.18). On aggregate, the median interest coverage ratio (ICR) for Malaysian non-financial corporations remained reasonably high at 9.4 times (January-September 2015: 12 times) which is comfortably above the prudent standard of two times. The debt servicing capacity of businesses was further supported by sound liquidity positions, with the median ratio of cash-to-short-term debt (CASTD) at 1.2 times (January-September 2015: 1.4 times). For the 12 months ending September 2016, corporate debt-at-risk (measured as the share of debt borne by firms with an ICR of less than two times), however, increased to 7.7% (2015: 6.2%) of total corporate debt (Chart 1.19). This was mainly attributed to firms in the automotive, real estate and O&G sectors and was within the Bank's expectations given the more challenging conditions in these sectors. Despite the increase, the share of debt-at-risk for Malaysian non-financial corporations remained below that observed in other EMEs.

Major firms in sectors with a weaker credit risk outlook generally maintained satisfactory debt servicing capacity and liquidity positions (Chart 1.20). Sustained demand for affordable housing should provide some support for firms in the real estate sector, with further price adjustments and rebalancing of supply by developers to tap into this demand. The automotive sector, on the other hand, is expected to face continued headwinds with demand likely to remain soft on more cautious household spending. The automotive industry association has forecasted only a marginal growth of 1.7% in sales for 2017, from a negative growth of 13% in 2016. In the O&G-related sectors, recovery is expected to remain slow as firms continue



to adjust to new business and operating norms. While the planned global crude oil production cuts will be positive for O&G firms, the impact is likely to be limited with uncertainty remaining over global demand, the commitment of producers over the longer term to cut production, and the recovery of shale oil output.

On aggregate, financial institutions have relatively small exposures to the O&G-related sectors. This limits the direct impact on domestic financial stability, although some banks are likely to book in higher provisions that may affect profitability. Banks' domestic exposures (including off-balance sheet exposures) to businesses in the O&G-related sectors accounted for about 5% of domestic business exposures or 14% of total capital of the banking system. Including exposures via domestic banks' overseas operations and the Labuan International Business and Financial Centre (LIBFC), exposures to these sectors represented about 6% and 20% of total business exposures and total capital respectively. Banks have progressively increased the amount of provisions against potential credit losses to 7.5% of total exposures to the O&G-related sectors, thus ensuring the ability to absorb losses without impairing bank capital positions. Outside banks, exposures of insurers and takaful operators, and NBFIs to the O&G-related sector are similarly small. Equity exposures of NBFIs to the sector were below 3% of individual NBFI's total assets, while bond and equity holdings of insurers and takaful operators represented less than 1% of total assets or 5% of total capital available. General insurers and takaful operators will likely experience lower premiums in the marine, aviation and transit segment following the deferment of projects and lower production by major O&G companies, but the impact is not expected to be significant (refer to Chapter 3 of this Report). Over the past five years, the contribution was small, averaging at only 4.9% of total gross direct premiums.

### Sustained overall quality of business borrowings, although some sectors were more affected by domestic and global developments

The overall quality of business loans in the banking system remained sound. Impaired and delinquent loans have been broadly low and stable (Chart 1.21 and Table 1.4). As noted earlier, loan performance in the O&G, automotive and real estate sectors deteriorated within expectations. The proportion of rescheduled and restructured business

loans remained low at only 0.1% of total business accounts, with a higher number of restructured facilities observed in the O&G-related sectors. The overall impaired business loan ratio, including restructured loans, remained low at 2.4%. Among businesses that raised funds in the domestic capital market, six domestically-rated corporate bonds and sukuk were downgraded during the year, compared to seven downgrades in the previous year. The downgrades mainly reflected sector-specific weaknesses and represented only 1.3% (2015: 1.8%) of total outstanding corporate bonds and sukuk.

### Aggregate debt servicing capacity of large borrower groups remains supported by healthy cash buffers and satisfactory financials

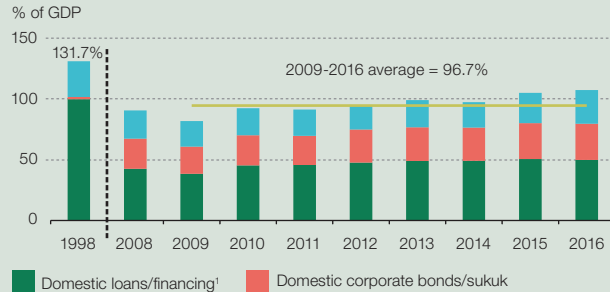
The Bank continues to monitor the financial condition of large borrower groups which could have a material bearing on the stability of financial institutions. Large borrower groups are defined as corporations with credit exposures, including direct financing and holdings of corporate bonds and sukuk, exceeding RM2 billion with the financial institutions. In 2016, exposures of Malaysian financial institutions to large borrower groups accounted for 27.9% (2015: 29.1%) of total business exposures of banks and DFIs. For insurers, such exposures accounted for 79% (2015: 82.1%) of total business exposures of insurers and takaful operators and are mostly highly-rated or Government-guaranteed exposures. Despite more challenging operating conditions, the aggregate debt servicing capacity of the large borrower groups continues to be supported by reasonably healthy cash buffers. The median ICR and CASTD of large borrower groups remained above prudent thresholds at 5.9 times and 1.2 times (January-September 2015: 6.8 times and 1.1 times) respectively. Credit exposures to large borrower groups with ICR below the median declined to 12.8% (2015: 15%) of total business exposures of banks and DFIs, and 18% (2015: 21.9%) of business exposures of insurers and takaful operators.

Aggregate exposures of Malaysian financial institutions to large borrower groups with a high FCY borrowing concentration (>30%) accounted for 9.8% of total credit exposures to businesses. These large borrower groups operate mainly in capital-intensive sectors such as the O&G, plantation and construction-related sectors. Of these, only a few borrower groups were

### Higher Malaysian non-financial corporation (NFC) debt driven by new bond issuances

Chart 1.13

#### Business Sector: NFC Debt-to-GDP Ratio

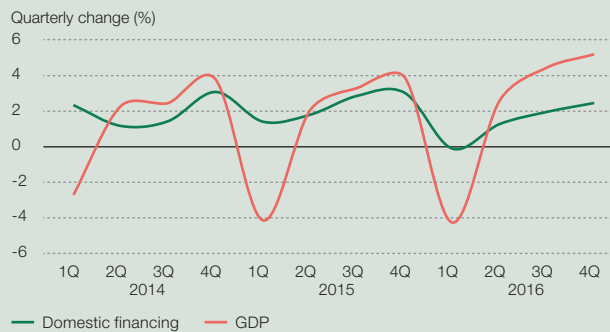


<sup>1</sup> Includes debt owing to locally-incorporated foreign banks

### Domestic financing activities broadly in line with domestic economic activities

Chart 1.15

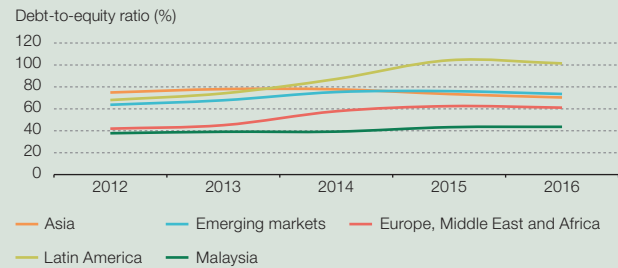
#### Business Sector: Domestic Financing and Gross Domestic Product



### Leverage remains lower than firms in EMEs and regional countries

Chart 1.14

#### Business Sector: Cross-Regional Comparison of Corporate Leverage

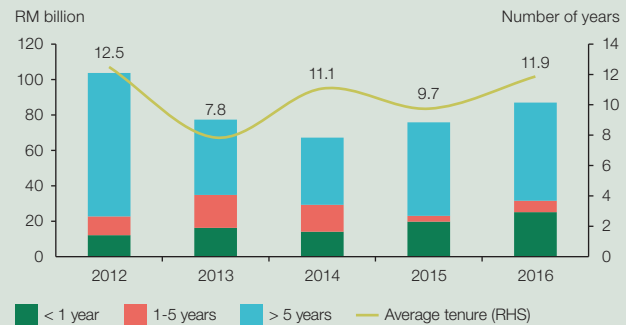


Note: Data for all regions are based on the IMF Global Financial Stability Report October 2016  
For Malaysia in 2016, data as at first nine months

### New bond issuances mainly have longer maturity, hence reducing rollover risks

Chart 1.16

#### Business Sector: Maturity of Corporate Bond Issuances

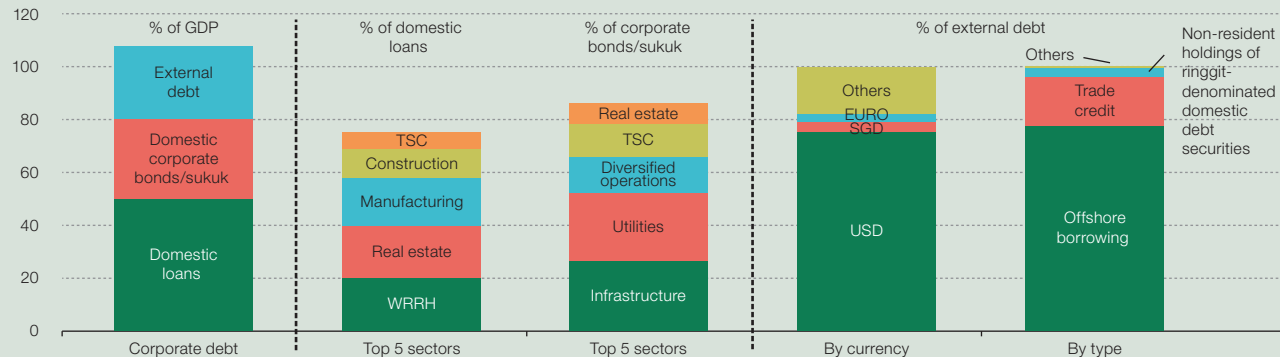


Note: Average tenure is weighted by issuance amount

### External NFC debt accounted for about a quarter of total debt, of which half are inter-company borrowings

Chart 1.17

#### Business Sector: NFC Debt Profile



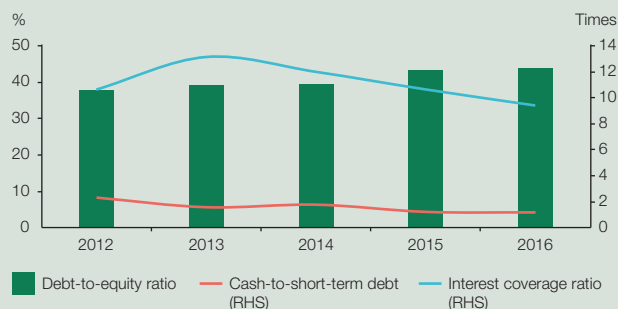
Note: WRRH - Wholesale and retail trade, restaurants and hotels; TSC - Transport, storage and communication

Source: Bank Negara Malaysia, International Monetary Fund, Bloomberg, Department of Statistics, Malaysia and internal computation

## Generally healthy financials continue to support debt servicing capacity

Chart 1.18

### Business Sector: Leverage, Debt Servicing Capacity and Liquidity Indicators

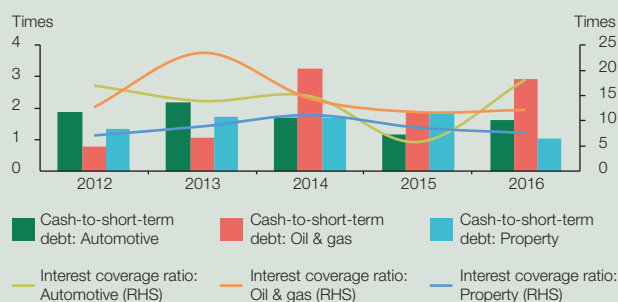


Note: For 2016, data as at first nine months

## Satisfactory debt servicing capacity for sectors with weaker credit risk outlook

Chart 1.20

### Business Sector: Liquidity and Debt Servicing Capacity Indicators for Selected Sectors

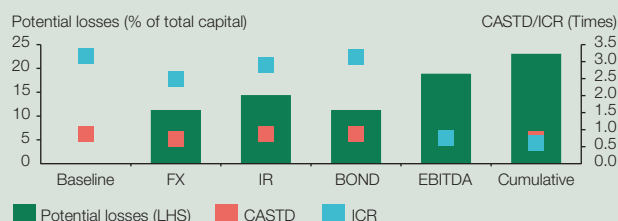


Note: For 2016, data as at first nine months

## Excess capital of banks sufficient to cover more than two times the potential credit losses under simulated severe shocks

Chart 1.22

### Business Sector: Potential Credit Losses for Large Borrowers Under Stress Test



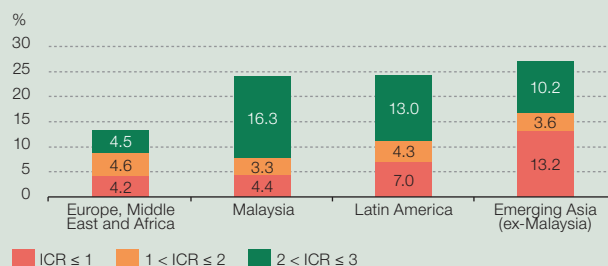
Note: **FX** Foreign currency shock  
**IR** Increase in borrowing costs of RM-denominated loans  
**BOND** Increase in coupon rate for new corporate bond and sukuk issuances  
**EBITDA** Earnings shock

Source: Bank Negara Malaysia, International Monetary Fund, Bloomberg and internal computation

## Debt-at-risk for Malaysian NFCs remained lower than most EMEs

Chart 1.19

### Business Sector: Debt-at-risk for Malaysia and Selected Regional EMEs

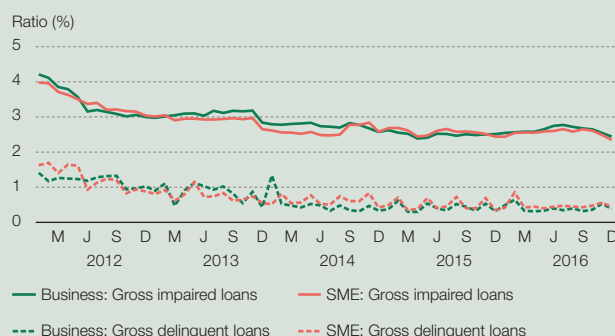


Note: Data for all regions are based on the IMF Global Financial Stability Report October 2016  
For Malaysia, data are for the twelve months ending September 2016

## Overall quality of banking system business loans portfolio remains sound

Chart 1.21

### Business Sector: Gross Impaired Loans and Gross Delinquent Loans



## Overall debt servicing capacity of NFCs expected to remain intact, although higher credit risk is expected in a few sectors

Chart 1.23

### Business Sector: Credit Risk Outlook for Selected Sectors

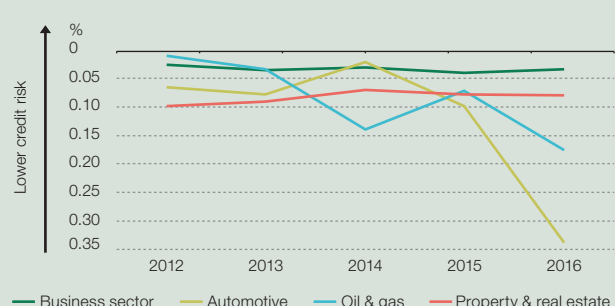


Table 1.4

**Business Sector, Banking System: Gross Impaired Loans and Gross Delinquent Loans**

|                                                    | % of Total Domestic Debt <sup>1</sup> Exposure | % of Total Business Loan | Gross Impaired Loans Ratio (%) |            |            | Gross Delinquent Loans Ratio (%) |            |            |
|----------------------------------------------------|------------------------------------------------|--------------------------|--------------------------------|------------|------------|----------------------------------|------------|------------|
|                                                    | 2016                                           |                          | 2014                           | 2015       | 2016       | 2014                             | 2015       | 2016       |
| <b>Overall</b>                                     |                                                |                          | <b>2.6</b>                     | <b>2.5</b> | <b>2.4</b> | <b>0.3</b>                       | <b>0.3</b> | <b>0.4</b> |
| <b>of which: SMEs</b>                              |                                                | <b>50.8</b>              | <b>2.6</b>                     | <b>2.4</b> | <b>2.3</b> | <b>0.4</b>                       | <b>0.4</b> | <b>0.4</b> |
| Real estate activities (including REITs)           | 18.1                                           | 19.5                     | 0.7                            | 1.5        | 1.5        | 0.1                              | 0.1        | 0.1        |
| Wholesale and retail trade, restaurants and hotels | 17.2                                           | 20.0                     | 1.8                            | 1.8        | 1.8        | 0.3                              | 0.3        | 0.3        |
| Manufacturing                                      | 15.8                                           | 18.1                     | 5.0                            | 3.9        | 3.7        | 0.1                              | 0.1        | 0.1        |
| of which: Automotive                               | 0.8                                            | 0.7                      | 0.5                            | 0.4        | 0.4        | 0.01                             | 0.01       | 0.01       |
| Construction                                       | 10.6                                           | 11.5                     | 3.0                            | 2.8        | 2.4        | 0.2                              | 0.3        | 0.2        |
| Transport, storage & communication                 | 7.7                                            | 6.4                      | 6.1                            | 6.5        | 6.3        | 0.8                              | 0.7        | 1.2        |
| Primary agriculture                                | 5.5                                            | 6.3                      | 0.7                            | 1.0        | 0.8        | 0.1                              | 0.03       | 0.04       |
| of which: Palm oil                                 | 3.7                                            | 4.1                      | 0.5                            | 1.2        | 1.0        | 0.02                             | 0.01       | 0.002      |
| Mining & quarrying                                 | 2.3                                            | 2.1                      | 0.4                            | 0.2        | 3.9        | 0.03                             | 0.03       | 0.28       |
| of which: Oil & gas <sup>2</sup>                   | 2.1                                            | 1.9                      | 0.3                            | 0.1        | 4.1        | 0.006                            | 0.004      | 0.3        |

<sup>1</sup> Includes business loan/financing, corporate bonds and sukuk<sup>2</sup> Includes upstream and downstream activities

Source: Bank Negara Malaysia

found to have weak ICR and CASTD that are below the prudent thresholds – accounting for 2% of total credit exposures of financial institutions to businesses. A majority of the large borrower groups is expected to be able to support debt repayments in the event of a substantial decline in profitability, further weakening of the ringgit and higher borrowing costs. Under a scenario of simulated severe shocks (up to 50% depreciation in the ringgit, a 75% decline in operating profit and 100 basis points increase in borrowing costs for loans, corporate bonds and sukuk), the cumulative potential credit losses from exposures to large borrowers are estimated to be comfortably within banks' excess capital buffers. These buffers currently stand at more than two times the estimated potential losses (Chart 1.22). The extent of the potential losses is further mitigated by improved underwriting standards and risk management (including loan loss provisioning) practices of banks in recent years. In particular, improved processes within banks for managing exposures that are connected through financial and economic interdependencies have reduced credit

concentrations to large borrowers. Arrangements that are in place, both at individual banks and for the system at large, to assist viable borrowers that are facing temporary operational challenges, also serve to mitigate the effects of any potential deterioration in asset quality. At the system level, such arrangements include the Corporate Debt Restructuring Committee for larger firms and Small Debt Resolution Scheme for SMEs.

The debt servicing capacity of Malaysian corporations is expected to remain broadly intact in 2017. The credit outlook for certain sectors such as the O&G-related, property, and automotive sectors will, however, remain challenging particularly in the first half of 2017. The overall expected default risk for Malaysian corporations based on the Bloomberg Credit Risk measure is low and stable at 0.034% (2015: 0.041%) (Chart 1.23). At this level, the expected default risk is significantly lower than the peak of 0.170% observed during the global financial crisis period. Most industries where financial institutions have the largest credit exposures also continue to record low expected default risk levels.



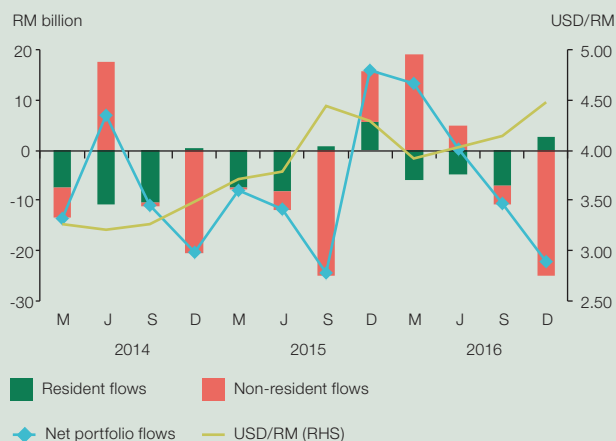
## MANAGING RISKS FROM FINANCIAL MARKET VOLATILITY

The global financial markets experienced several episodes of heightened market volatility in 2016. Moderate global growth and inflation, changing expectations on the pace and timing of interest rate normalisation in the US and low global commodity prices continued to weigh heavily on investor sentiment and behaviour. These uncertainties induced bouts of volatility in global portfolio flows. In the second half, global market reactions to the outcomes of the US presidential election, UK referendum and other global political developments further exacerbated episodes of volatility. Domestic market volatility was also influenced by persistent concerns on the impact of oil price movements on the country's fiscal outlook and speculative activities in the ringgit non-deliverable forward (NDF) market.

Malaysia continued to experience two-way portfolio flows that broadly reflected movements of global funds into and out of EMEs and commodity-producing economies. In the first half of 2016, net portfolio inflows by non-residents amounted to RM23.8 billion. This was driven mainly by expectations of a delay in the US interest rate normalisation and further monetary easing in the key advanced economies in the first four months of the year. The increased interest in Malaysia's financial assets also partly reflected the recovery in global crude oil prices and more positive assessments of the domestic economy and fiscal position by global

Chart 1.24

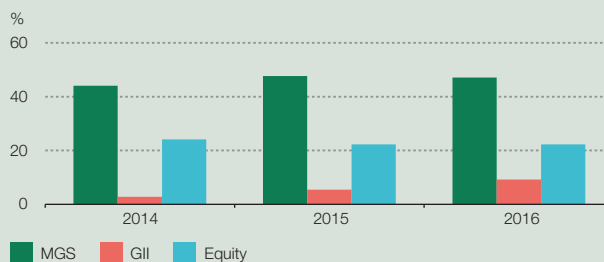
### Financial Market: Net and Gross Portfolio Flows and Ringgit Exchange Rate Movement



Source: Department of Statistics, Malaysia

Chart 1.25

### Financial Market: Non-resident Holdings of MGS, GII and Equity



Holdings of MGS and GI are quoted as percentage of total outstanding while holdings of equity is quoted as percentage of total market capitalisation

Source: Bursa Malaysia, Bank Negara Malaysia and internal computation

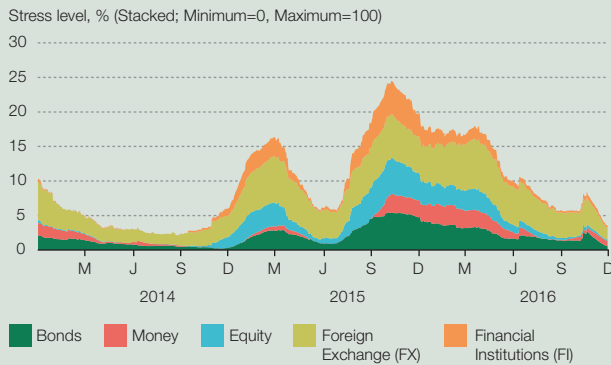
investors. From May onwards, renewed expectations of higher interest rates in the US, heightened geopolitical uncertainty and volatility in global crude oil prices reduced investor interest in emerging market assets, including Malaysia. This led to net portfolio outflows by non-residents of RM28.5 billion in the second half of the year, with heavier outflows recorded in November and early December. Overseas investment activities of domestic institutional investors also contributed to portfolio outflows during the year. Overall net portfolio outflows for the year amounted to RM19.7 billion (2015: net outflows of RM28.2 billion) (Chart 1.24). Non-resident holdings of Malaysian Government Securities (MGS) increased to 51.9% as at end-October, before declining to 47.1% (2015: 47.7%) of total outstanding MGS by end-2016. Non-resident holdings of Government Investment Issues (GI) meanwhile increased to 9.2% (2015: 5.4%) of total outstanding GI (Chart 1.25). In the equity market, non-residents sustained their holdings at 22.3% (2015: 22.3%) of total market capitalisation.

### Domestic financial markets were orderly and supportive of domestic financial intermediation despite bouts of volatility

With the exception of a surge in the final two months of the year, volatility in the domestic financial markets was generally lower throughout 2016, supported by Malaysian financial institutions and domestic institutional investors (Chart 1.26). This kept bid-ask spreads and turnover ratios largely within a tight range, although spreads widened in the last quarter of the year (Chart 1.27 and Chart 1.28). Correspondingly, MGS yields across the one- to 20-year tenures trended

Chart 1.26

### Financial Market: Financial Market Stress Index (FMSI)



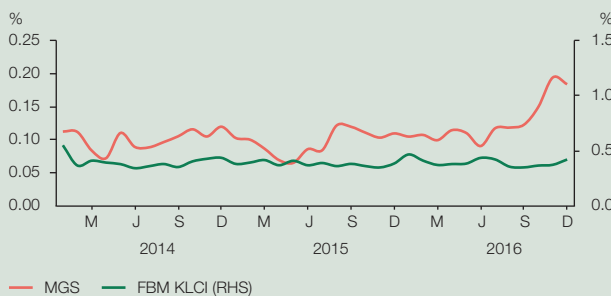
Note: 1. The FMSI is a risk monitoring tool for the financial market that is developed based on the European Central Bank's (ECB's) Composite Indicators of Stress Index (CISS). It is constructed from indicators of volatility in five components of the domestic financial markets - the foreign exchange (FX), equity, bond, money markets and financial institutions (FIs).  
2. The stress level at a specific date is expressed as a value between 0 and 100, which signifies the lowest to highest stress level.

Source: Bloomberg and internal computation

lower for most of the year, before rising between 67 basis points to 108 basis points in the final two months (Chart 1.29). As in previous episodes of volatility, yield movements were tempered by higher domestic holdings of public debt securities observed among banks and provident and pension funds which hold a combined share of close to 60% of total outstanding public debt securities. Spillovers to corporate bond yields were limited given the low and stable share of holdings of 2.8% (2015: 2.7%) by foreign investors (Chart 1.30). In the equity market, the FBM KLCI ended the year weaker by 3% with a price-to-earnings ratio of 16.5 times (2015: 18 times), close to the long-term historical average of 16.7 times for the period 2000-2016 (Chart 1.31). Market perceived

Chart 1.27

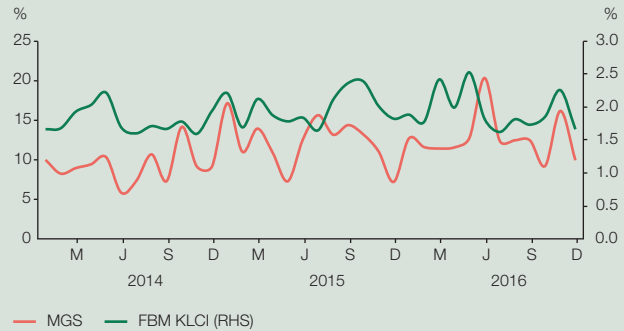
### Financial Market: Average Bid-Ask Spreads of FBM KLCI and MGS (% of Mid-price)



Source: Bloomberg, Reuters and internal computation

Chart 1.28

### Financial Market: FBM KLCI and MGS Monthly Turnover Ratio



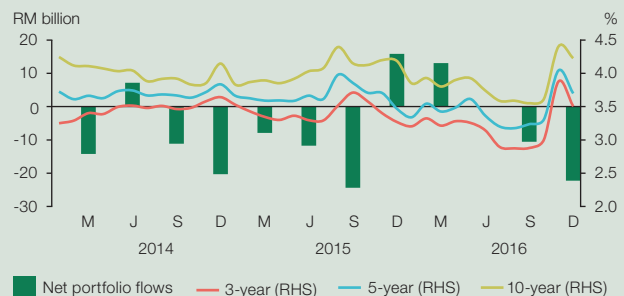
Source: Bloomberg

sovereign risk, as reflected in the credit default swap spread for Malaysia, was lower in 2016 and in line with other regional economies (Chart 1.32).

The ringgit ended the year lower by 4.3% at RM4.4860 against the US dollar. While the ringgit was affected by the same external shocks that drove regional portfolio flows and exchange rate movements, ringgit volatility was exacerbated by speculative activities in the opaque offshore NDF market. Following the US presidential election in November, sentiment in the offshore ringgit NDF market turned bearish. The significant size and non-transparent pricing mechanism in the offshore NDF market in turn spilled over to the onshore FX market and disrupted the domestic price discovery process. This contributed to the misalignment between the exchange rate and the underlying domestic economic fundamentals. Increasing supply and demand imbalances in the domestic FX market over the years further contributed to ringgit volatility. Export proceeds that were not converted into ringgit and increasing

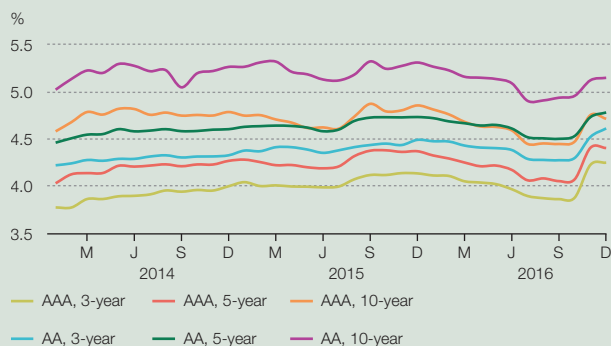
Chart 1.29

### Financial Market: MGS Yields and Quarterly Net Portfolio Flows



Source: Bank Negara Malaysia and Department of Statistics, Malaysia

Chart 1.30

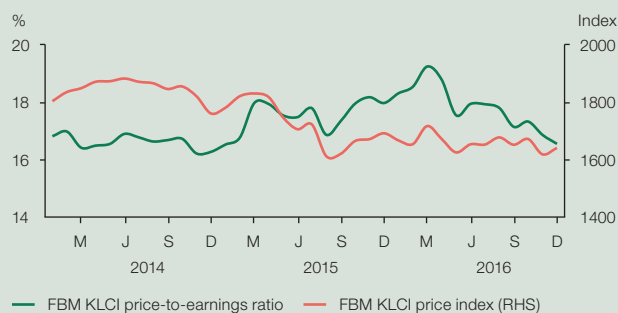
**Financial Market: Corporate Bond Yields**

Source: Bank Negara Malaysia

demand for FCY by Malaysian companies investing abroad effectively combined to weaken structural demand for the ringgit. The Financial Markets Committee, chaired by Bank Negara Malaysia, therefore announced several measures in December to deepen and broaden the domestic FX market, including greater flexibilities for onshore FX hedging. Another measure was to require the conversion of FCY export proceeds into ringgit to improve FCY liquidity in the onshore market. These measures were part of a series of market development initiatives to develop a liquid and deep, transparent and well-functioning FX market in Malaysia. Following the measures, average volatility in the onshore ringgit market eased to 5.4% in January 2017 (November 2016: 7.5%). The desired impact of the measures will require more time to materialise.

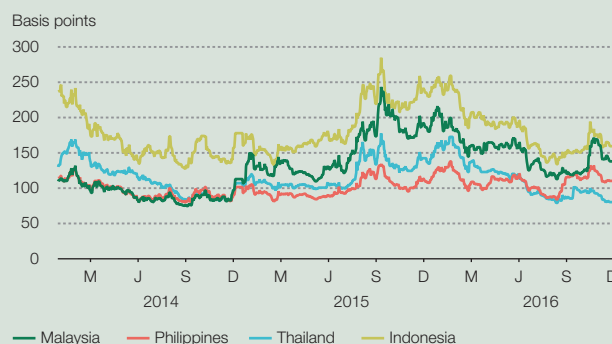
Risk-taking by Malaysian financial institutions was broadly unchanged. Treasury assets of the banking system expanded slightly by 2.9% to RM369.3 billion

Chart 1.31

**Financial Market: FBM KLCI Price Index and Price-to-Earnings Ratio**

Source: Bloomberg

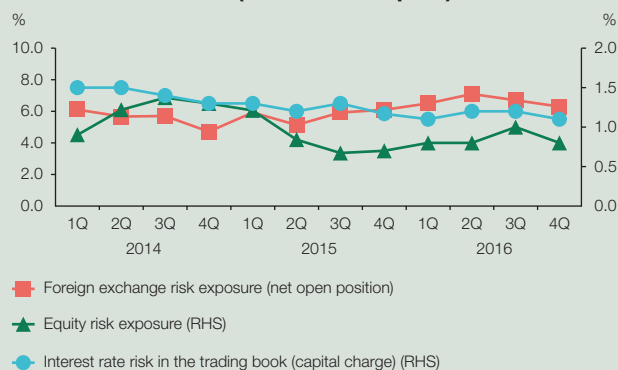
Chart 1.32

**Financial Market: 5-year Credit Default Swap Spread**

Source: Bloomberg

or 15.1% of total assets. The bulk of the increase reflected the purchase of MGS and GII in the final two months of the year. The size of the trading book remained relatively small at 11.7% (2015: 12.1%) of the treasury portfolio. Duration risk in the trading book also remained low, with changes in market valuations estimated at RM4.1 million for every one basis point change in interest rate. Active risk management and hedging by banks helped to contain market risk exposures within manageable levels (Chart 1.33). Total capital allocated by banks against interest rate risk in the trading book was stable at 1.1% of banks' total capital, while exposures to equity risk remained minimal at 0.8% of total capital (2015: 1.2% and 0.7% respectively). Overall FX risk exposures were almost unchanged at 6.3% (2015: 6.1%) of total capital, remaining at levels consistent with prudent internal value-at-risk and loss limits set by individual banks for each significant currency and all currencies combined.

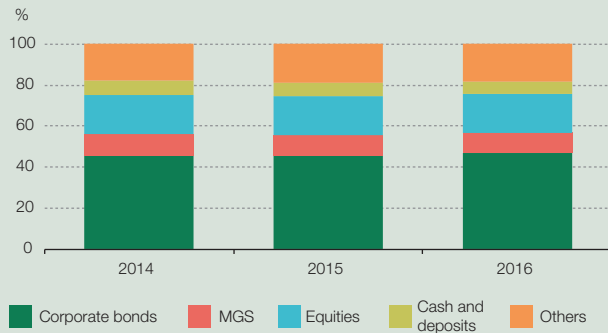
Chart 1.33

**Banking System: Equity, Foreign Exchange and Interest Rate Risks (% of Total Capital)**

Source: Bank Negara Malaysia

Chart 1.34

### Life Insurance and Family Takaful Sector: Assets Composition



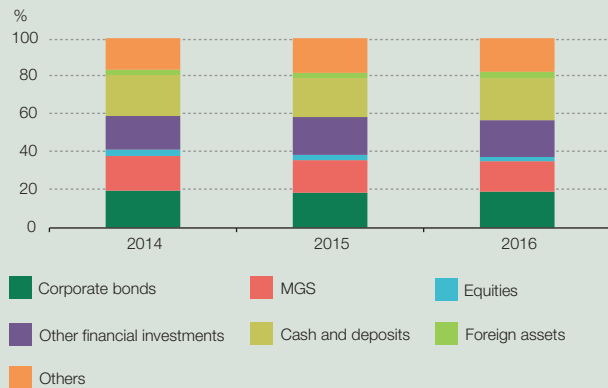
Source: Bank Negara Malaysia

In 2016, banks registered higher net gains totalling RM6.4 billion (2015: RM5.1 billion) from treasury activities – mainly due to higher net gains from disposal and revaluation of debt securities – which accounted for 20% (2015: 17.7%) of profit before tax.

Insurers and takaful operators (Chart 1.34 and Chart 1.35) also maintained prudent risk-taking behaviour. Insurers have a sizable treasury portfolio which accounts for about three quarters of total insurance assets, largely held to match the liability structures of insurance companies. Accordingly, medium- to long-term corporate bonds comprised 93% of total corporate bonds held by life insurers and family takaful operators, while equity holdings were well-diversified across economic sectors and comprised mainly blue-chip stocks. As at year-end, insurers and takaful operators allocated more

Chart 1.35

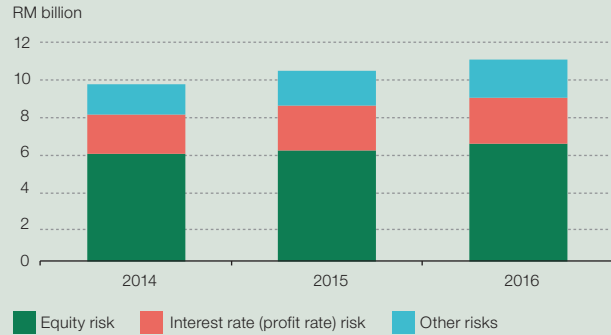
### General Insurance and General Takaful Sector: Assets Composition



Source: Bank Negara Malaysia

Chart 1.36

### Insurance and Takaful Sector: Market Risk Composition

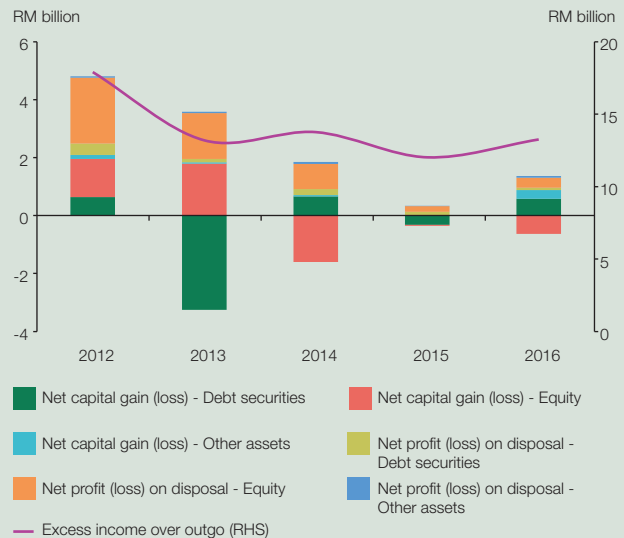


Source: Bank Negara Malaysia

capital for market risks which increased to 13.3% (2015: 12.9%) of total capital available (Chart 1.36). This was mainly attributed to an increase in capital allocated for higher equity investments by several large life insurers (2016: 7.7%; 2015: 7.5% of total capital available). Overall, the trading book delivered a better performance for the insurance industry compared to last year (Chart 1.37 and Chart 1.38). Insurers and takaful operators recorded net profits from trading activities of RM0.9 billion (2015: RM0.3 billion), mostly driven by higher valuations of long-term corporate bonds held by life insurers.

Chart 1.37

### Life Insurance and Family Takaful Sector: Profitability and Investment-related Activities

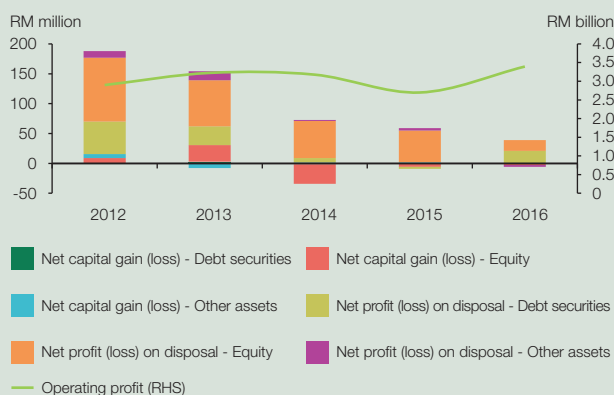


Note: Columns represent investment-related activities of life insurance only

Source: Bank Negara Malaysia

Chart 1.38

### General Insurance and General Takaful Sector: Profitability and Investment-related Activities



Note: Columns represent investment-related activities of general insurance only

Source: Bank Negara Malaysia

Aggregate surplus liquidity in the domestic financial system declined to RM185 billion (2015: RM205 billion) in line with overall portfolio movements during the year. This remained supportive of intermediation activities. Of this, banking system liquidity comprising placements, reverse repos and statutory reserves with the Bank remained ample at RM167.4 billion (2015: RM170.9 billion) and could be released to meet liquidity needs. Funding liquidity remained predominantly deposit-based, thus limiting banks' exposures to wholesale funding markets. Deposits accounted for 69.4% (2015: 71%) of total bank equity and all liabilities, and were mostly in ringgit. The profile of depositors was also generally unchanged (Chart 1.39)

Chart 1.39

### Banking System: Composition of Deposits by Holder



Source: Bank Negara Malaysia

for the year. Deposits by resident individuals grew at a steady rate of 5.1% (2015: +5.3%), while deposits by resident businesses contracted by 2.3% (2015: +0.9%) amid weaker corporate earnings. Deposits by non-residents only accounted for 4.3% (2015: 4.1%) of total deposits, with FCY-denominated deposits representing a lower share of 7.8% (2015: 8.4%) of total deposits. Interbank funding continued to be kept low, remaining under 6% of total bank funding.

### The loan-to-fund (LTF) ratio better captures the more diversified funding structure and broader funding base of banks

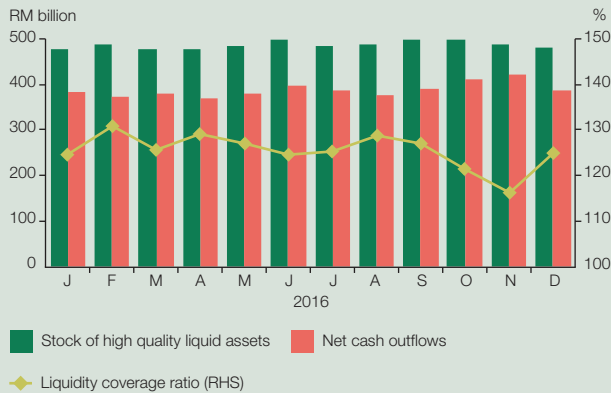
The reduction in the SRR in February helped to improve the distribution of liquidity within the banking system. Since then, competition for deposits, in particular institutional deposits, has abated. During the year, banks continued to issue medium-term instruments (both in ringgit and FCY) that better matched the asset maturity profile. This was also driven in part by the anticipation of the Net Stable Funding Ratio (NSFR) requirements under the Basel III liquidity framework (discussed further in Chapter 2). In 2016, banks' equity and debt instruments expanded by 3.9%, close to the rate of banks' asset expansion. Such instruments accounted for 12.6% of banks' total funding and contributed towards further reducing maturity and currency mismatches in banks' funding structures. The loan-to-fund (LTF)<sup>2</sup> ratio, which better reflects the broader funding base of banks, stood at 84.3% (2015: 83%) at end-2016. Including equity in the funding base, the ratio stood at 75.3% (2015: 74.6%) (refer to box article on 'Evolving Dynamics of Banks' Funding and Liquidity Management'). The banking system Basel III Liquidity Coverage Ratio (LCR) stood at 124.8% at end-2016, well above the transitional minimum regulatory requirement of 70%. About 80% of banks already record LCR levels in excess of 100% (Chart 1.40).

The overall cost of funds was lower, reflecting the reduction in the SRR, easing of deposit competition and reduction in the Overnight Policy Rate in July 2016. Interbank rates trended lower following these developments (Chart 1.41). The quoted short-term fixed

<sup>2</sup> Fund comprises deposits and all debt instruments (including subordinated debt, debt certificates/sukuk issued, commercial papers and structured notes).

Chart 1.40

### Banking System: Basel III Liquidity Coverage Ratio



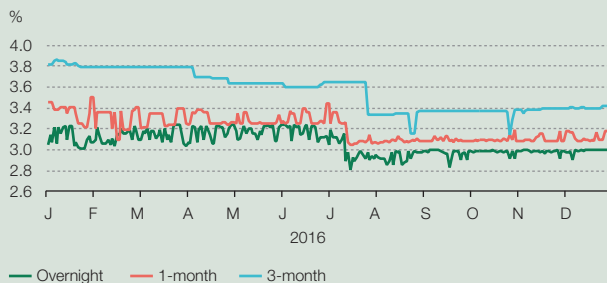
Source: Bank Negara Malaysia

deposit rates for selected large corporate depositors also eased between 35 basis points and 75 basis points during the year, to levels which were last seen in 2014 when total deposit growth was stronger at about 8%.

Onshore USD liquidity conditions were tighter during the year particularly following the US presidential election. The large portfolio outflows in the final two months of the year exerted some pressure on short-term USD funding liquidity (Chart 1.42). The spreads on short-term onshore USD liquidity as reflected by the USD implied yield spread above the London Interbank Offered Rate (LIBOR) widened to 134 basis points as at end-2016 (2015: 68 basis points). The spreads on long-term USD liquidity, as reflected by the 5-year cross-currency basis swap spreads, edged higher to 93 basis points in mid-December before easing to 68 basis points (2015: 75 basis points) by year-end. The tighter conditions in short-term onshore USD

Chart 1.41

### Financial Market: Ringgit Interbank Rates



Source: Bank Negara Malaysia

liquidity did not significantly affect banks. Some banks also actively used FCY cash management strategies to capitalise on short-term rate differentials, amid increased market volatility in the final quarter of the year. On a net basis, the banking system was a net FCY borrower in the interbank market (RM9.2 billion or 2.6% of FCY liabilities). This was mostly reflective of interbank placements by the parents of locally incorporated foreign banks (LIFBs) in Malaysia as part of group-wide liquidity management strategies. In contrast, the larger domestic banking groups (DBGs) generally remained as net lenders in the FCY interbank market. The primary sources of FCY funding were from customer deposits and long-term term FCY borrowings, which accounted for 49.8% of the total FCY liabilities. This was more than sufficient to fund banks' long-term FCY-denominated loans. The FCY LTF, although on an increasing trend, remained low at 52.5% (Chart 1.43).

Chart 1.42

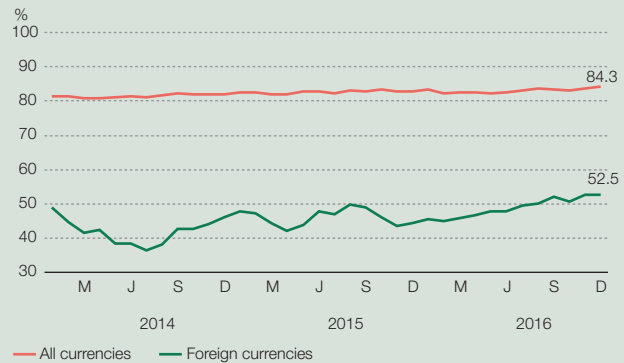
### Financial Market: USD Implied Yield Spread Above Libor and 5-year USD/RM Cross-currency Basis Swap Spread (CCBS)



Source: Bank Negara Malaysia

Chart 1.43

### Banking System: Loan-to-Fund Ratio by Currency



Source: Bank Negara Malaysia



## MANAGING CONTAGION RISK FROM EXTERNAL EXPOSURES AND OVERSEAS OPERATIONS

### Counterparty risk from financial institutions' external exposures

Changes to the external balance sheet of Malaysian banks (including entities in the LIBFC) were in line with regional economic developments in 2016. External assets declined by 3.4% to RM248.2 billion while external liabilities grew by 7.1% to RM423.8 billion (2015: +11.3% and +9.4% respectively) (Chart 1.44). External assets and external liabilities of Malaysian banks accounted for 10.2% and 17.3% of banks' balance sheets for the year (2015: 10.9% and 16.8% of total banking system assets and funding respectively). The contraction in external assets mainly reflected a reduction in intra-group placements by banks. These were partly due to on-going adjustments to limits applied on exposures with related banking counterparties under domestic standards on single counterparty exposures. Such exposures are subject to a maximum cap of 50% of a bank's total capital beginning 1 January 2017.

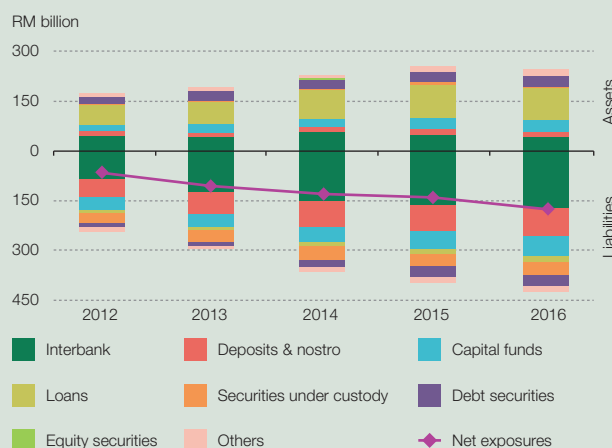
### Short-term external liabilities of banks remain driven by centralised liquidity management operations and strong presence of LIFBs

On a net basis, external liabilities of Malaysian banks widened to RM175.6 billion (2015: RM138.9 billion). A large part of this consists of capital funds maintained by LIFBs in Malaysia and securities held under custody which present limited credit and liquidity risks to LIFBs (Chart 1.45). Other components include non-resident deposits and interbank funding. Thus far, there has been limited evidence of large scale withdrawals of such funds even during periods of heavy portfolio outflows. In contrast, DBGs maintained a net external assets position of RM4.1 billion (2015: RM10.5 billion) (Chart 1.46). Mirroring the position of LIFBs, the bulk of external exposures of DBGs comprise capital funds in overseas subsidiaries and branches, and intra-group placements of surplus liquidity as part of centralised liquidity management practices.

The structure and key activities associated with Malaysian banks' external exposures have remained largely unchanged. Liquidity continues to be centrally

Chart 1.44

### Banking System: External Assets and Liabilities



Note: Banking system includes entities operating in LIBFC  
 External liabilities = External debt (interbank + deposits & nostro + loans + debt securities) + capital funds + securities under custody + others

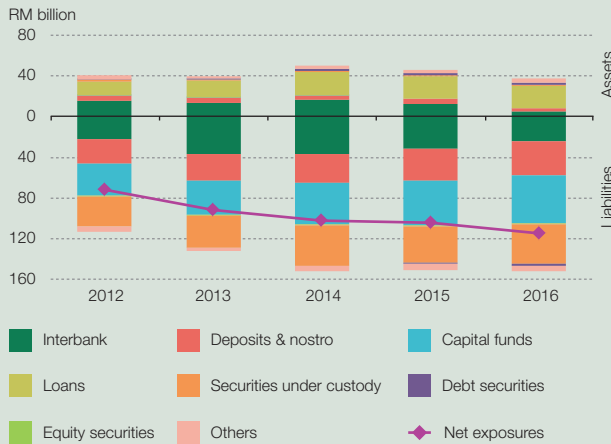
Source: Bank Negara Malaysia

managed at the head offices to optimise relative funding advantages across a group's operations. At an institutional level, banks are however expected under domestic regulations to manage liquidity gapping positions. This includes taking prudent steps to secure adequate alternative liquidity sources to reduce excessive reliance on intra-group funding. Geographically, the bulk of banks' external exposures continues to be with counterparties based in Asia, mainly Singapore and Hong Kong SAR, and are largely denominated in the US dollar (Chart 1.47 and Chart 1.48).

Despite the strong regional presence of domestic banks, the potential for spillovers from combined external credit and funding shocks to the Malaysian banking system remains low. The Bank's network contagion analysis of Malaysian banks' cross-border exposures to major banking counterparties showed that the simulated contagion impact arising from a hypothetical distress scenario in Singapore, to which Malaysian banks have the largest exposures, would not cause a system-wide distress in the sample banking systems. However, a simultaneous hypothetical distress scenario originating from the two large international financial centres in the region is more likely to have wider spillovers along with the emergence of new contagion paths (Diagram 1.1). This would indirectly impact the Malaysian banking system if other major banking systems are materially impacted. The simulations used aggregated data to treat each banking system as a single foreign

Chart 1.45

### Banking System: External Assets and Liabilities of LIFBs



counterparty and therefore, assume a widespread default on cross-border exposures by all individual banks within a country. While the likelihood of such extreme events occurring in a contemporaneous and homogenous manner is low, the stringent assumption was used to estimate the maximum potential contagion impact arising from multiple credit defaults and funding shocks materialising simultaneously, disregarding the effects of

Chart 1.47

### Banking System: Composition of External Liabilities by Location

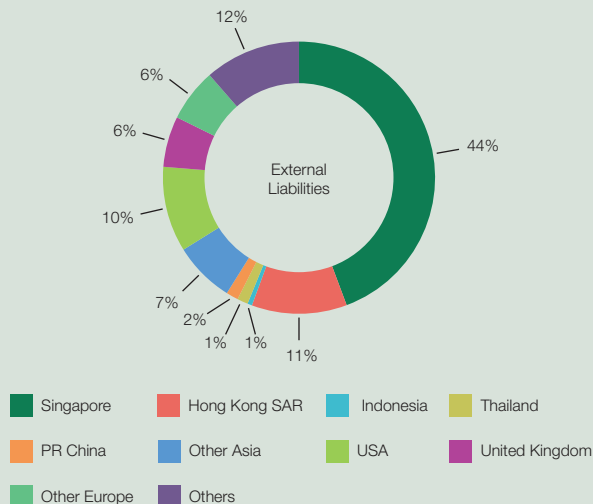
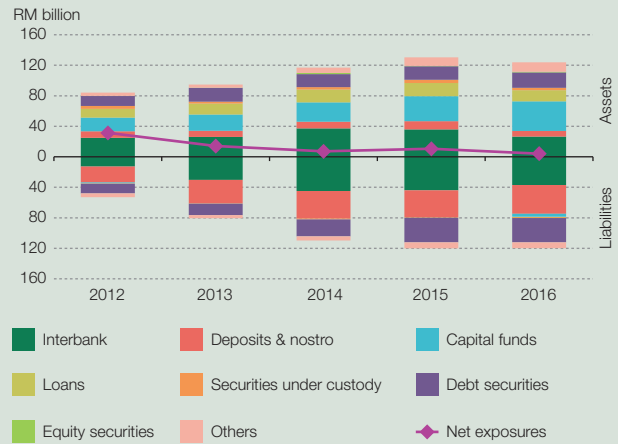


Chart 1.46

### Banking System: External Assets and Liabilities of DBGs



credit risk transfers, loss mitigation response by banks or policy intervention by authorities. This also allows an assessment of both the direct external contagion and its amplified effects across banking systems as a result of indirect spillovers due to network externalities.

In the insurance sector, external claims are predominantly in the form of general reinsurance

Chart 1.48

### Banking System: Composition of External Assets by Location

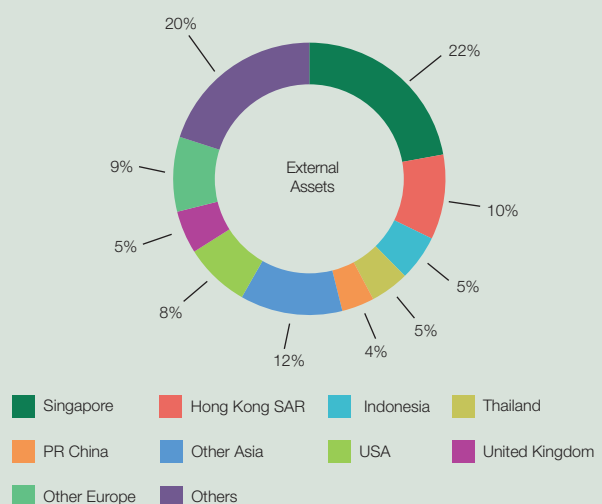
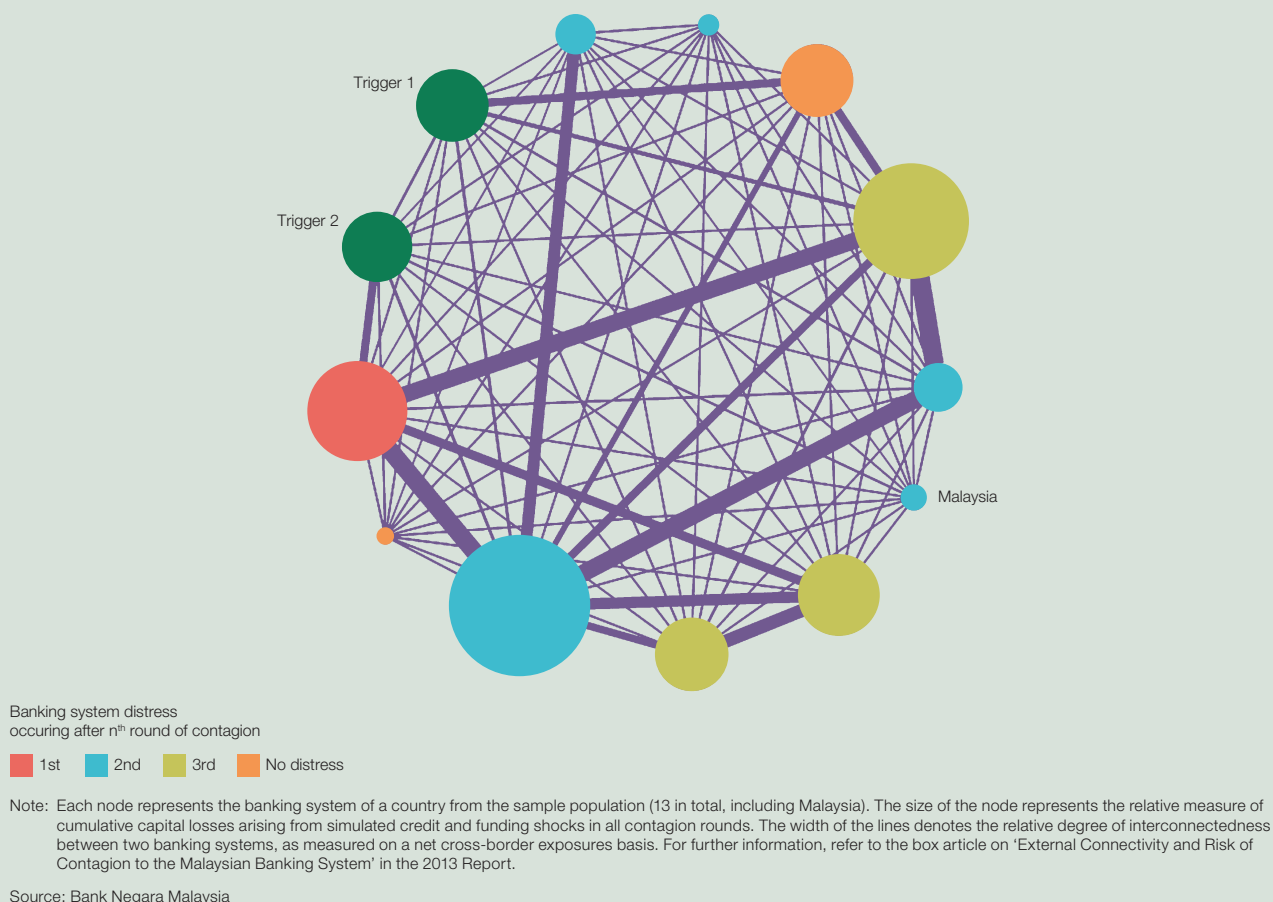




Diagram 1.1

### Banking System: Effects of Simultaneous Hypothetical Distress Scenario Originating from International Financial Centres



exposures. As at end-2016, general insurers had ceded 15.4% of total business underwritten to (re)insurers overseas (Chart 1.49), mostly to the US and European (re)insurers headquartered in Germany, Switzerland and the UK (Chart 1.50). This represents 22.6% of total capital available. Reinsurance counterparty risks remain stable and low with major global reinsurers maintaining strong ratings and sound financial positions. Future capacity of major global reinsurers to underwrite new risks is also expected to remain broadly intact, with added support from overall improvements in performance. These have further expanded total capital of global reinsurers, estimated at USD595 billion (2015: USD565 billion) as at end-September 2016<sup>3</sup>. Apart from reinsurance exposures, external assets of Malaysian insurers and takaful operators remained small at less than 5% of the industry's total assets or 13.5% of the industry's total capital. Insurers generally remain cautious in expanding their investments abroad,

controlling such exposures within relatively low internal investment limits and focusing on the more liquid equity markets in Asia (Chart 1.51).

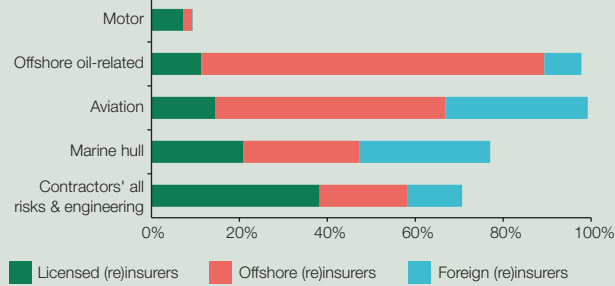
### Overseas operations of domestic banking groups

The overseas operations of DBGs continue to remain generally profitable and financially sound. Despite weaker earnings in line with slower regional growth, overseas operations contributed between 4.3% and 25% (3Q 2015: between 10% and 25%) of total group profits of individual DBGs. Capitalisation levels, as at end-September 2016, remained high, ranging between 10.9% and 19.3% (3Q 2015: between 9.2% and 19.8%). This continues to be supported by strengthened

<sup>3</sup> As estimated in the Reinsurance Market Outlook report by Aon Benfield.

Chart 1.49

**Insurance and Takaful Sector: Reinsurance Ceded Ratio**



Source: Bank Negara Malaysia

Chart 1.50

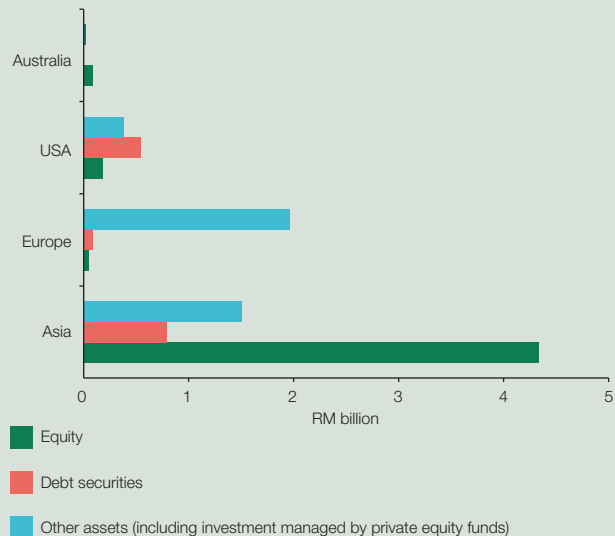
**Insurance and Takaful Sector: Foreign-Based Reinsurance Exposures by Major Countries**



Source: Bank Negara Malaysia

Chart 1.51

**Insurance and Takaful Sector: External Investment Exposures by Region**



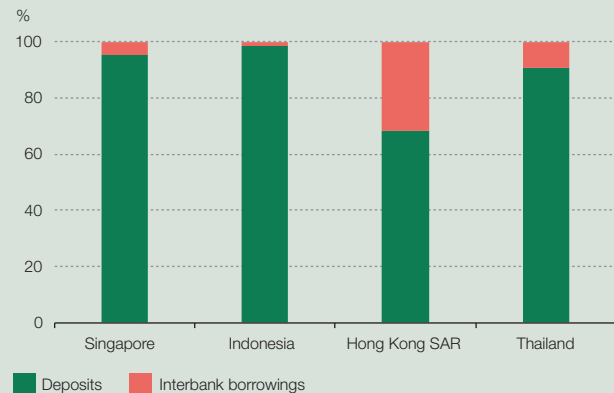
Source: Bank Negara Malaysia

oversight arrangements and group-wide risk management, including more comprehensive stress tests, which have a key role in limiting the transmission of risks to the Malaysian banking system. The overseas operations of DBGs remain largely focused on traditional lending activities and are predominantly funded by local currency deposits (Chart 1.52). This reduces potential risks associated with cross-border funding and currency mismatches. Liquidity buffers remain adequate, with the liquidity coverage ratios of major subsidiaries of large DBGs comfortably above the minimum regulatory requirement in the respective jurisdictions.

During the year, DBGs expanded further their overseas operations and regional footprint. Total assets of overseas subsidiaries and branches of DBGs (overseas assets) grew by 7.2% on an annual basis to RM559.3 billion at the end of the third quarter of 2016. This accounted for a higher share of total assets of DBGs (24.3%; 3Q 2015: 23.5%). At the institutional level, the share of overseas assets ranged between 0.1% and 37.8% of total assets of individual DBGs. Notwithstanding the contraction of 2.2% in loan growth during the period, loans, largely to retail and SME segments, continued to account for the bulk (60.4%) of total overseas assets. More than half of the retail loans are secured loans (for the purchase of houses and cars) (Chart 1.53 and Chart 1.54). These exposures remain largely concentrated in Singapore (47%) and Indonesia (23%), where DBGs have significant presence (Chart 1.55).

Chart 1.52

**Banking System: Funding Structure of Selected Overseas Operations**

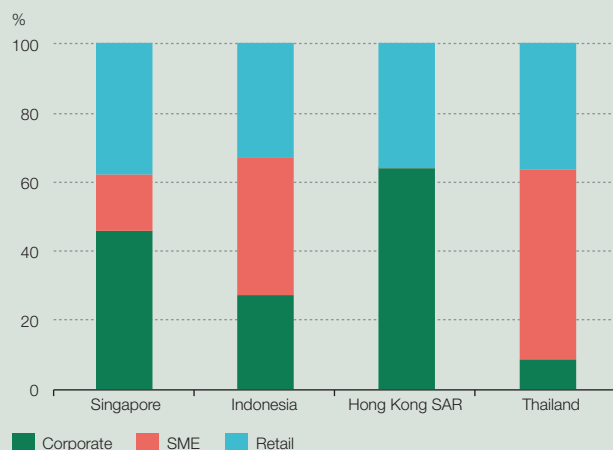


Note: Data as at end 3Q 2016

Source: Bank Negara Malaysia

Chart 1.53

### Banking System: Loan Composition of Selected Overseas Operations



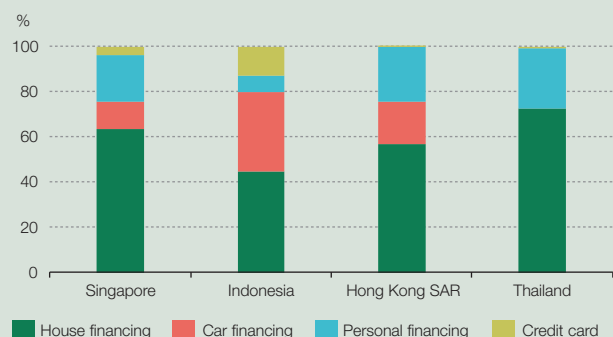
Note: Data as at end 3Q 2016

Source: Bank Negara Malaysia

The overall quality of overseas assets remained broadly intact, despite the emergence of sector-specific stresses during the year. As expected, higher levels of impairment were recorded from exposures in Indonesia and Singapore to selected borrowers and corporations that were more affected by the decline in oil prices and slower economic conditions. Consequently, the median gross impaired loans ratio increased to 3.2% (3Q 2015: 2.2%), with a wider distribution across individual entities (ranging between 0.1% and 9.2%; 3Q 2015: ranging between 0.1% and 5%) (Chart 1.56). On aggregate, exposures of overseas operations to the O&G-related (including shipping) sectors remained small at 0.8% of total overseas assets.

Chart 1.54

### Banking System: Retail Loan Composition of Selected Overseas Operations

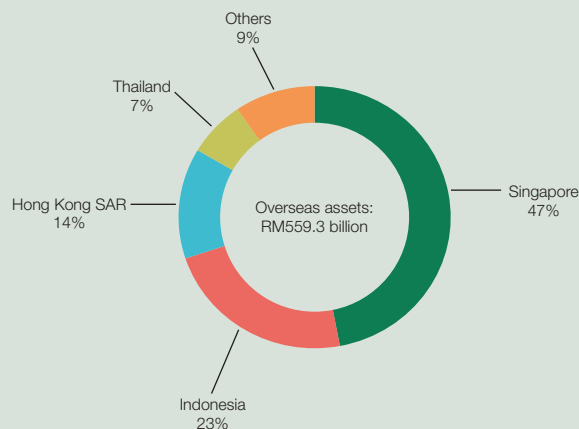


Note: Data as at end 3Q 2016

Source: Bank Negara Malaysia

Chart 1.55

### Banking System: Asset Composition of Overseas Operations of DBGs



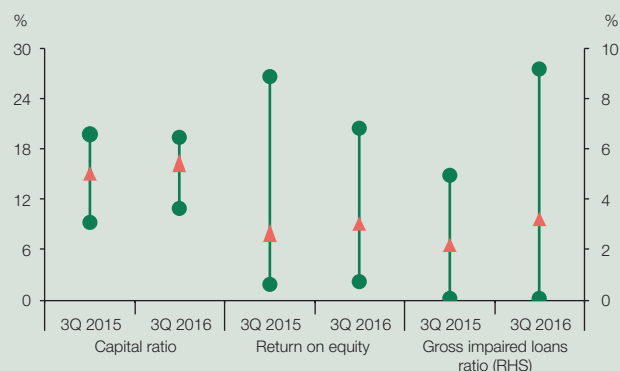
Note: Data as at end 3Q 2016

Source: Bank Negara Malaysia

DBGs have taken proactive measures to manage the quality of overseas balance sheets, including: (i) pre-emptively restructuring loans for borrowers facing temporary difficulties; (ii) increasing provisions for exposures to more affected businesses; (iii) tightening underwriting standards; (iv) enhancing monitoring of higher risk credits; and (v) regularly updating the stress tests to proactively manage capital and earnings performance. As in previous years, the Bank continued to regularly engage host regulators through established supervisory colleges and bilateral meetings. These platforms, which have been in place for many years now, allow for in-depth discussions on supervisory issues among the Bank and host

Chart 1.56

### Banking System: Range of Key Financial Soundness Indicators of Selected Overseas Operations



Source: Bank Negara Malaysia

regulators. It also facilitates coordinated supervisory responses to emerging issues. Under its consolidated supervision framework, the Bank conducts on-site examination, at least annually, on significant overseas operations of DBGs. This is supported by submission of information on the financial performance and developments in the risk profile of overseas operations of DBGs at regular intervals to the Bank. At the regional level, the cross-border crisis management and resolution framework put in place by the Executives' Meeting of East Asia-Pacific (EMEAP) Central Banks further supports the identification of contagion risks arising from a distressed financial institution with significant operations in the region, and defines a protocol for coordinating responses between regional central banks and supervisory authorities to contain such risks.

## INTERLINKAGES OF NON-BANK FINANCIAL INSTITUTIONS WITH THE FINANCIAL SYSTEM

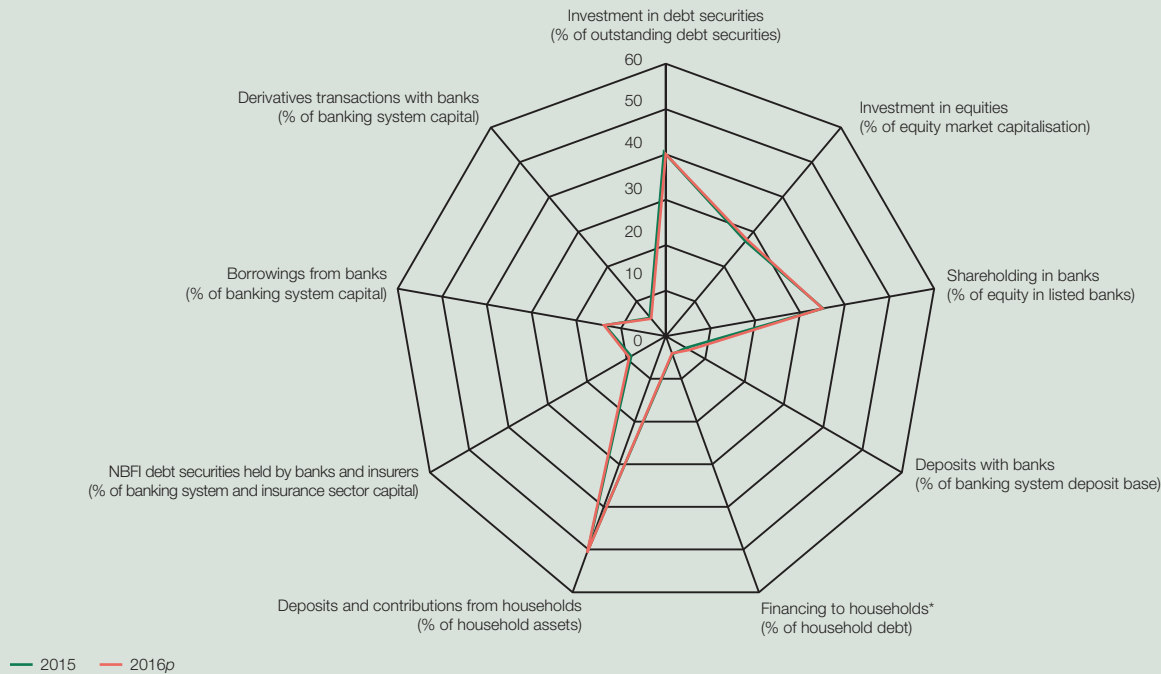
The prospect for NBFIs which are not regulated by the Bank to transmit risks and shocks to the financial

system continues to be limited. While NBFIs as a group expanded further in size (+6.3% in total assets), the risk profile and nature of the interlinkages with the domestic financial system remain broadly unchanged. The main channel for transmission of risks from NBFIs to the financial system continues to be via investments in common asset classes and equity holdings in Malaysian financial institutions (Chart 1.57).

As at end-2016, aggregate assets of NBFIs accounted for about 39.4% (2015: 38.8%) of total financial system assets (Chart 1.58). The provident and pension funds, and the fund management industry, represented the majority (83%) of total NBFIs' assets. The seven largest NBFIs make up 68% of NBFIs' assets. Financial intermediation activities of NBFIs mostly take the form of financing and investments in plain vanilla debt and equity instruments (Chart 1.59). These accounted for a lower share of 98.6% of GDP (2015: 101.9%), reflecting the slower growth in investment funds (2016: +4.3%; 2015: +6.0%) and weaker equity market performance. Across the larger NBFIs, the share of investments in equity has remained

Chart 1.57

### Interlinkages of NBFIs with the Financial System



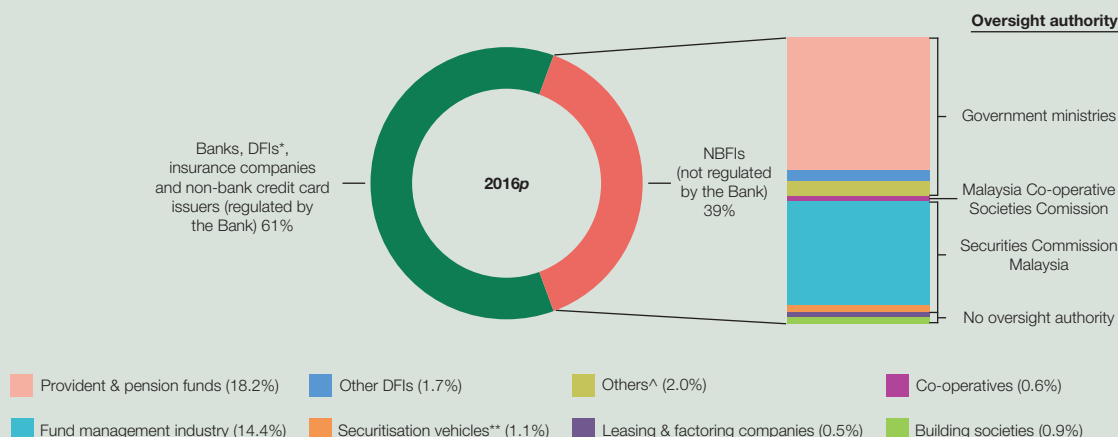
p Preliminary

\* Excludes loans granted by NBFIs regulated by Bank Negara Malaysia and Lembaga Pembiayaan Perumahan Sektor Awam

Source: Bank Negara Malaysia, Securities Commission Malaysia, Malaysia Co-operative Societies Commission, published financial statements and internal estimates

Chart 1.58

### Size and Composition of Financial System Assets



p Preliminary

Numbers in brackets refer to percentage of assets to financial system assets

^ Refers to pawn brokers, money lenders, non-bank provider of education financing, non-bank providers of hire purchase financing, government-owned trustee company, and social security organisation

\* Development Financial Institutions (DFIs) regulated under the Development Financial Institutions Act 2002 - Bank Pembangunan Malaysia Berhad, SME Development Bank Malaysia, Export-Import Bank of Malaysia Berhad (EXIM Bank), Bank Kerjasama Rakyat Malaysia Berhad (a co-operative), Bank Simpanan Nasional and Bank Pertanian Malaysia Berhad (Agrobank)

\*\* Refers to outstanding asset-backed securities and asset size of national mortgage corporation

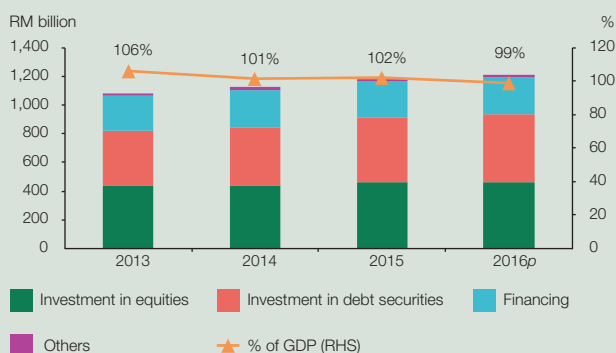
Source: Bank Negara Malaysia, Securities Commission Malaysia, Malaysia Co-operative Societies Commission, published financial statements and internal estimates

broadly stable, accounting for between 29% and 72% of their respective total assets. The share of investments in debt securities has been similarly stable, ranging between 4% and 41% of total assets. These entities continue to play an important role in supporting liquidity in the domestic financial markets, including during periods of heightened

selling pressure by non-resident investors. In more recent years, NBFIs have gradually increased their investments in real estate, infrastructure projects and private equity to improve yields and diversify investment risk. However, such investments remain relatively small at less than 10% of the total assets of individual NBFIs, although this is expected to trend higher following announced plans by a few large NBFIs to increase investments in these asset classes over the next few years. The share of overseas assets has also remained broadly unchanged, ranging between 7.3% and 28.4% of total assets of individual NBFIs.

Chart 1.59

### Domestic Financial Intermediation by NBFIs



Note: Financial intermediation comprises (i) investment in equities; (ii) financing; (iii) investment in debt securities; (iv) securitisation; and (v) credit guarantee or enhancement. Credit intermediation comprises (ii) - (v).

p Preliminary

Source: Bank Negara Malaysia, Securities Commission Malaysia, Malaysia Co-operative Societies Commission, published financial statements and internal estimates

NBFIs can pose risks to financial stability through price effects in asset classes held in common with other financial institutions. This may arise as a result of large investment disposals by NBFIs under financial stress. Risks can also be transmitted to financial institutions through reputational or financial linkages where NBFIs hold substantial equity interests in financial institutions. At present, these risks are assessed to remain well-contained. NBFIs maintained overall profitability amid challenging external and domestic investment conditions. The return on assets ranged between 3.9% and 6.1% (2015: between 3.3% and 6.3%) across the larger NBFIs. With liabilities that are mostly denominated in

ringgit, the depreciation of the ringgit during the year had a positive net effect on the larger NBFIs through valuation gains on overseas assets. The potential for financial stress arising from maturity transformation activities undertaken by NBFIs also remains low. The average remaining tenure of corporate bonds issued by NBFIs is 9.9 years, closely matching the average tenure of financing granted (typically below 10 years). Short-term market funding via commercial papers accounted for 2.4% of total debt securities issued by NBFIs. This limits any potential rollover and funding risks. A few NBFIs are, however, exposed to higher liquidity risk due to the large deposit base which is used to fund longer-term assets. Measures continue to be taken by these NBFIs to progressively strengthen their risk management infrastructure and practices, thus improving their resilience to liquidity shocks. On aggregate, NBFIs maintained stable levels of liquid assets (comprising cash, deposit placements and government securities), ranging between 17% and 32% of total assets (2015: between 20% and 31%).

Aggregate holdings of equity in DBGs by the larger NBFIs remained at about the same level at 35% (2015: 35.1%) of the total market capitalisation of DBGs. Direct credit risk exposures of the financial system to NBFIs also remained broadly stable. Bank lending to NBFIs accounted for 13.8% (2015: 13.7%) of total banking system capital. Meanwhile, banks' and insurers' (including takaful operators) holdings

of NBFIs' securities were marginally higher at 9.3% (2015: 8.8%) of total capital. Banking system exposures to NBFIs in the form of interest rate and FX swaps remained limited at about 5% of total bank capital.

## MULTI-YEAR SOLVENCY STRESS TEST FOR BANKS AND INSURERS

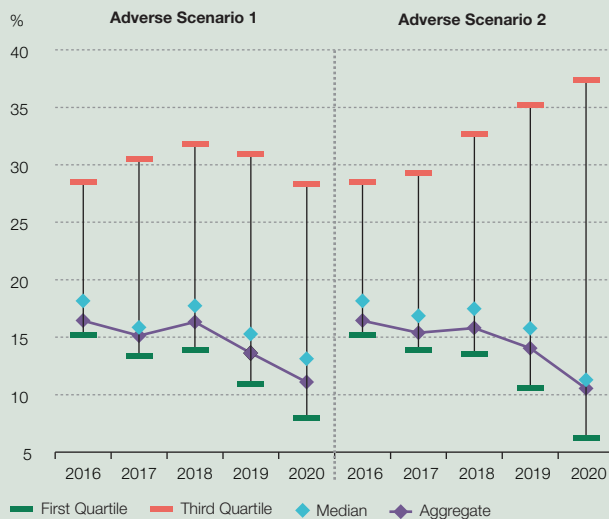
### Stress tests affirmed financial institutions' shock absorbing capacity under simulated severe scenarios

Financial institutions demonstrated continued resilience to severe macroeconomic and financial strains. Based on the latest stress tests conducted by the Bank, the post-shock aggregate total capital ratio of the banking system is estimated to be above 11% under the first adverse scenario (AS1), and above 10% under the second adverse scenario (AS2) (Chart 1.60).

More than 95% of the losses are attributed to credit events, driven largely by the household loan portfolio. The simulated default of selected corporate borrowers with large exposures to the banking system comprised 6% and 11% of total credit losses in AS1 and AS2 respectively. Cumulative net losses across the four-year stress test horizon amounted to 51% and 85% of excess capital under AS1 and AS2

Chart 1.60

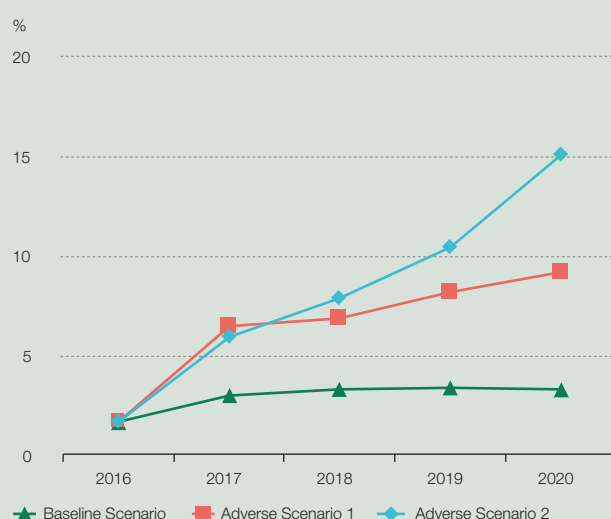
#### Banking System: Post-shock Total Capital Ratio in Adverse Scenarios



Source: Bank Negara Malaysia

Chart 1.61

#### Banking System: Post-shock Gross Impaired Loans Ratio in Adverse Scenarios



Source: Bank Negara Malaysia

respectively. Gross impaired loan ratios of the banking system are estimated to increase to 9% under AS1 and 15% under AS2 (Chart 1.61). Even under such severe macroeconomic and financial strains, banks remain well-positioned to absorb the estimated losses with available capital buffers, without raising additional capital.

Results for the insurance industry were similar. The aggregate capital adequacy ratios (CAR) of life and general insurers are estimated to remain above the regulatory minimum across the stress test horizon

under both scenarios. With most assets being held in the trading portfolio, life insurers remain most affected by the simulated market risk events of sharp declines in asset prices, particularly under AS1. Under this scenario, the CAR for life insurers is estimated to decline from 243% to 190%. The simulated quick economic recovery in the following years would result in a recovery of the CAR to 248% by end-2020. The aggregate capitalisation of general insurers is estimated to be sustained at above 200% under both adverse scenarios, with the main impact arising from shocks related to higher motor claims.



## An Overview of the Solvency Stress Test Scenarios for Banks and Insurers

The multi-year solvency-based stress test exercise models a series of tail-risk events based on three hypothetical domestic GDP growth paths (one baseline and two adverse scenarios) over a four-year horizon from 2017 to 2020. Simultaneous shocks on revenue, credit and market risks are applied to financial institutions' income and operating expenses, balance sheet growth and capital levels. The stress test exercise disregards any loss mitigation responses by financial institutions or policy interventions by domestic authorities. The adverse scenarios are designed to be sufficiently severe for stress test purposes and, based on counterfactual analysis, have a low likelihood of occurring. The first adverse scenario (AS1) involves a V-shaped recession in 2017, followed by a rebound in growth before normalising

Table 1.5

### Solvency Stress Test: Key Assumptions and Shock Parameters Applied under Assumed Adverse Scenarios

| Key Assumptions                                                                                                                                                                                                                                                                                                                                                                                                                                                | Adverse Scenario 1 (AS1)                                                                                                                                                                                                                      | Adverse Scenario 2 (AS2)                                                                                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>Balance sheet and income projections</b> <ul style="list-style-type: none"> <li>Annual decline in banks' income growth, differentiated across segments (interest income, fee-based and other income)</li> <li>Cumulative decline in asset growth (across 4 years)</li> <li>Annual decline in insurers' premium income</li> </ul>                                                                                                                            | <ul style="list-style-type: none"> <li>Up to 33%</li> <li>9%</li> <li>Up to 67%</li> </ul>                                                                                                                                                    | <ul style="list-style-type: none"> <li>Up to 25%</li> <li>20%</li> <li>Up to 31%</li> </ul>                                     |
| <b>Credit risk shocks</b> <ul style="list-style-type: none"> <li>Probability of default (PD) shocks               <ul style="list-style-type: none"> <li>Business loans</li> <li>Household loans</li> </ul> </li> <li>Loss given default (LGD) shocks               <ul style="list-style-type: none"> <li>Business loans</li> <li>Household loans</li> </ul> </li> <li>Default of selected corporations with large exposures to the banking system</li> </ul> | <ul style="list-style-type: none"> <li>6% to 12%</li> <li>1% to 17%</li> <li>43% to 55%</li> <li>23% to 100%</li> <li>Corporations under watchlist and are more susceptible to the stressed macroeconomic and financial conditions</li> </ul> | <ul style="list-style-type: none"> <li>6% to 14%</li> <li>2% to 25%</li> <li>42% to 59%</li> <li>22% to 100%</li> </ul>         |
| <b>Market risk shocks</b> <ul style="list-style-type: none"> <li>Annual increase in MGS yields</li> <li>Annual increase in corporate bond yields</li> <li>Annual decline in FBM KLCI</li> <li>Annual depreciation against major currencies</li> </ul>                                                                                                                                                                                                          | <ul style="list-style-type: none"> <li>Up to 51 bps</li> <li>Up to 26 bps</li> <li>Up to 51%</li> <li>Up to 17% - 30%</li> </ul>                                                                                                              | <ul style="list-style-type: none"> <li>Up to 80 bps</li> <li>Up to 40 bps</li> <li>Up to 30%</li> <li>Up to 9% - 15%</li> </ul> |
| <b>External funding risk shocks</b> <ul style="list-style-type: none"> <li>Reversal of claims by non-residents</li> </ul>                                                                                                                                                                                                                                                                                                                                      | <ul style="list-style-type: none"> <li>Up to 30% of interbank borrowing and deposits</li> </ul>                                                                                                                                               | <ul style="list-style-type: none"> <li>Up to 15% of interbank borrowing and deposits</li> </ul>                                 |
| <b>General insurance risk shocks</b> <ul style="list-style-type: none"> <li>Increase in claims ratio</li> <li>Increase in premium liabilities (motor classes)</li> </ul>                                                                                                                                                                                                                                                                                       | <ul style="list-style-type: none"> <li>Up to 28%</li> <li>Up to 1.5 times additional provision for adverse deviation</li> </ul>                                                                                                               | <ul style="list-style-type: none"> <li>Up to 15%</li> <li>Up to 1 time additional provision for adverse deviation</li> </ul>    |

towards long-term potential growth. The magnitude of recession is derived based on a 2.5 standard deviation of the long-term growth rate from the baseline. This scenario assumes a synchronised sharp slowdown in the US, PR China, European Union (EU) and EMEs following disorderly monetary policy normalisation in the US, a sharp equity market correction in PR China, political fragmentation in the EU and heightened geopolitical tensions in several EMEs. Global economic recovery is assumed to rebound from 2018 onwards, supported by monetary and fiscal stimuli in the US and PR China.

The second adverse scenario (AS2) simulates an L-shaped growth path with an initial mild decline. This is followed by a subsequent prolonged weakness in growth, represented by a cumulative negative deviation of about six standard deviations of the long-term growth rate from the baseline. This is triggered by: (i) restrictive policies by the new US administration; (ii) prolonged weakness in PR China following the correction in domestic imbalances and ineffective policy responses; and (iii) political disputes in EU. Domestic vulnerabilities, characterised by high household leverage and a tight fiscal position, further limit the ability of the domestic economy to absorb external and financial shocks, thus contributing to protracted economic weakness.

## Looking Beyond Headline Household Debt Statistics

*By Siti Hanifah Borhan Nordin, Lim Sheng Ling and Muhammad Khairul Muizz Abd Aziz*

The ratio of household debt to gross domestic product is a common measure of household indebtedness, often used to indicate risks of over-indebtedness above certain thresholds. Yet, this headline statistic provides very little insight on the quality of debt due to several key information gaps. One cannot directly infer the debt repayment capacity of households from the ratio as it does not take into account the available savings and wealth of the borrowers. Neither does the ratio provide any information on the distribution of debt or pockets of weaknesses across borrowers with different income levels. The ratio is therefore insufficient for policy analysis and design. Furthermore, analysis using this ratio could lead to wrong and erroneous conclusions. For these reasons, other metrics such as the debt service ratio (DSR)<sup>1</sup> and financial margin should also be used for more granular assessments of potential household vulnerabilities and the implications for financial stability.

For several years now, the Bank has published more detailed analyses in the Financial Stability and Payment Systems Report on the distribution of household debt and repayment capacity. This article extends these assessments, using the indicators of DSR and financial margin derived based on data from a recently established Integrated Income Indebtedness Database (IIID) by the Bank to match borrowings of individuals captured in the Central Credit Reference Information System (CCRIS) with their income information reported to the Inland Revenue Board of Malaysia. The analysis covers close to two million individual records, representing about 5% and 10% of the Malaysian population<sup>2</sup> and labour force respectively, and total debt of approximately RM200 billion or 20% of total household debt.

The analysis further improves on previous macro-level assessments in three ways. First, it provides a more granular assessment of trends and correlations within and across borrower groups based on an extensive micro-level dataset. Second, it applies the concept of financial margin to more precisely gauge the debt repayment capacity of individual borrowers at different income thresholds. Third, it facilitates identification of correlations between the level of DSR and household financial stress. These insights in turn allow for a more accurate assessment of potential credit losses to lenders from exposures to the household sector. The main conclusions from the analysis, presented below, are broadly consistent with the Bank's earlier assessments of household vulnerabilities.

### Distribution of Household Debt

The analysis focuses on borrowings made by individuals. As at end-2015, the largest share of debt (about 40%) is owed by individuals in the top 20 income group<sup>3</sup> (Chart 1). The average debt level for borrowers in this group is more than twice of that observed for other borrower groups (Chart 2). The debt servicing capacity of this group is reasonably healthy as indicated by more prudent debt service ratios (Chart 3). Relative to other income segments, a large share of this debt is secured, with about 77% of debt taken out for the purchase of properties and principal-guaranteed investments<sup>4</sup> which contribute towards individuals' wealth accumulation (Chart 4).

Consistent with data published in previous Reports, borrowers in the more vulnerable income segments, represented in the analysis by individuals in the bottom 40 income group, accounted for only 11.4% of total debt. Borrowers in this group

<sup>1</sup> Bańbula et al (2015) and Faruqi (2008).

<sup>2</sup> In comparison, the Household, Income and Labour Dynamics Survey used for a similar study in Australia represents about 0.1% of the population.

<sup>3</sup> Individuals are clustered based on monthly income (Source: IIID)

Bottom 20 income group : Individuals earning ≤RM2,500 per month

20-40 income group : Individuals earning RM2,501-3,500 per month

40-60 income group : Individuals earning RM3,501-5,000 per month

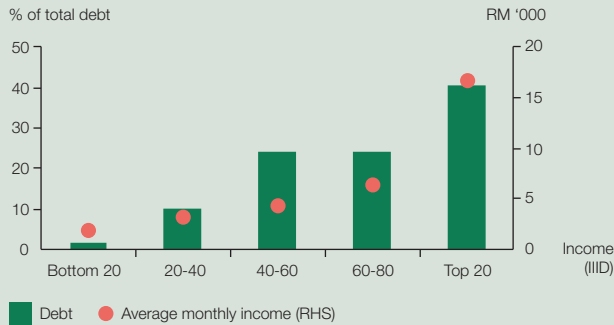
60-80 income group : Individuals earning RM5,001-8,000 per month

Top 20 income group : Individuals earning ≥RM8,000 per month

<sup>4</sup> Mainly comprising funds managed by Amanah Saham Nasional Berhad.

Chart 1

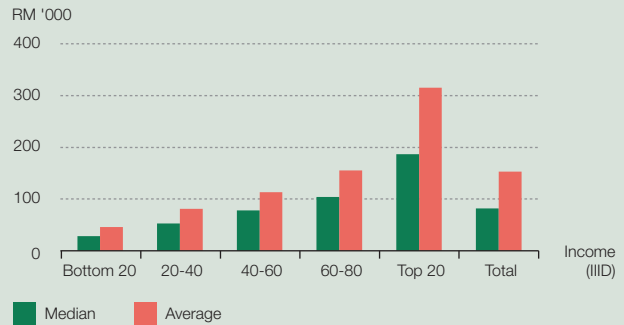
### Household Income and Distribution of Debt by Income



Source: Bank Negara Malaysia

Chart 2

### Debt per Borrower by Income Group



Source: Bank Negara Malaysia

Chart 3

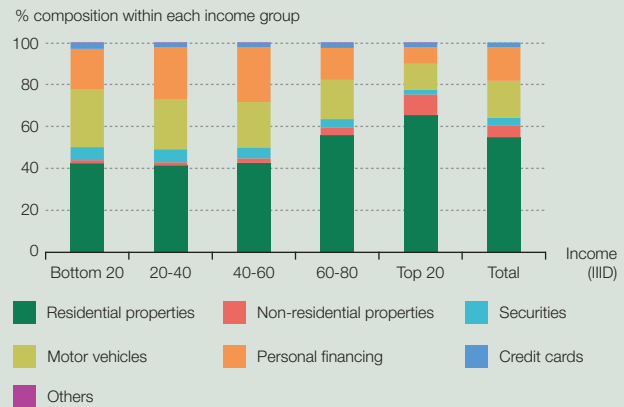
### Debt Service Ratio by Income Group



Source: Bank Negara Malaysia

Chart 4

### Debt by Loan Purpose by Income Group



Source: Bank Negara Malaysia

are more likely to face difficulty servicing their debt in the event of a payment shock, given thinner buffers. This is somewhat mitigated by the lower proportion of debt financed under floating or variable rate schemes compared to other income groups (Chart 5). More than half (53%) of borrowings by this group, however, remain sensitive to changes in interest rates which can have a disproportionate impact on debt repayment capacity given the low absolute income levels.

About two-thirds of total debt is acquired by those living in major employment centres<sup>5</sup>. Most of these borrowers are of the age between 30 and 40 years old in the 40-60 income group. As expected, a significant portion of debt is for the purchase of residential property. This is followed by debt for vehicle purchases and personal use, corresponding to the need for greater mobility and higher expenditures associated with raising young families and urban lifestyle choices.

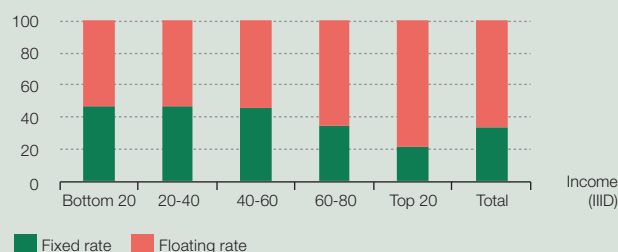
Following the implementation of responsible financing measures by the Bank in 2012, the share of financing represented by individual borrowers in the 40-60 income group has shown some pick-up as credit providers tightened lending standards for the lowest income groups. This has also been an area of greater supervisory focus by the Bank in recent years. Given the profile of debt taken out by borrowers in this group as noted above, close attention by lending institutions to ensure robust affordability assessments continues to be warranted.

<sup>5</sup> Selangor, Johor, Kuala Lumpur and Penang.

Chart 5

**Debt by Type of Interest Rate by Income Group**

% composition within each income group

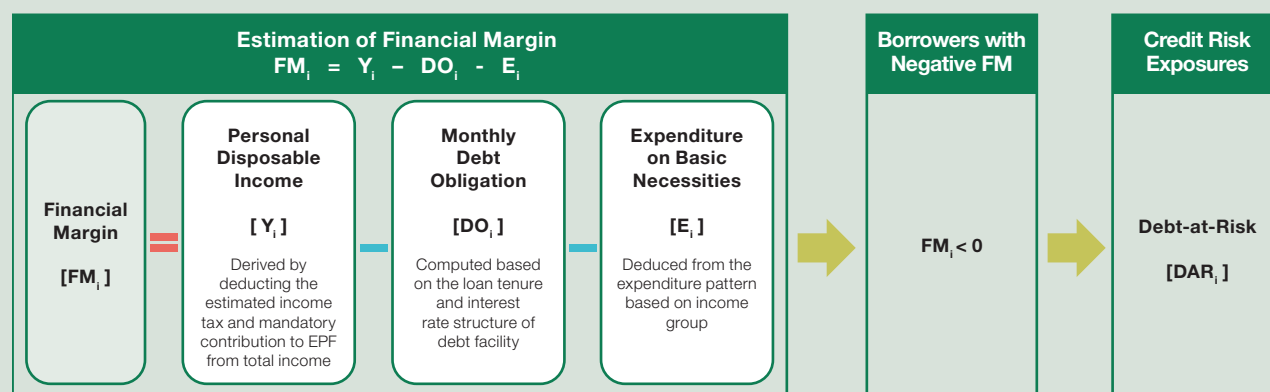


Source: Bank Negara Malaysia

**Assessment of Debt Repayment Capacity Using Financial Margin and the Correlations with DSR<sup>6</sup>**

An analysis of individual borrowers with negative financial margins provides further insights<sup>7</sup>. A borrower's financial margin is defined as his income net of statutory obligations, debt repayments and expenditures on basic necessities<sup>8</sup> (Diagram 1). Borrowers are more likely to face financial difficulties – particularly in the event of unexpected income and expenditure shocks – if they have a negative financial margin. Therefore these borrowers should receive the most scrutiny. A debt-at-risk (DAR) metric is used to capture this potential source of risk, defined as the sum of credit risk exposures to borrowers with negative financial margins, after taking into account the collateral values. In this analysis, a 40% haircut is applied on the underlying collateral value for housing loans while other loans are assumed to have a loss given default of 100%. It should be noted that the estimated DAR in this analysis is likely overstated as the methodology used to compute a borrower's financial margin excludes savings and liquid financial assets that can act to smoothen income and expenditures. This methodology is consistent with that adopted for sensitivity analyses and stress tests conducted by the Bank, which typically assumes no available buffers or policy intervention.

Diagram 1

**Measuring Credit Risk Using Financial Margin Approach**

i individual borrower

Source: Bank Negara Malaysia and Department of Statistics, Malaysia

<sup>6</sup> Ratio of total monthly bank and non-bank debt repayment obligations to monthly income (net of statutory deductions).

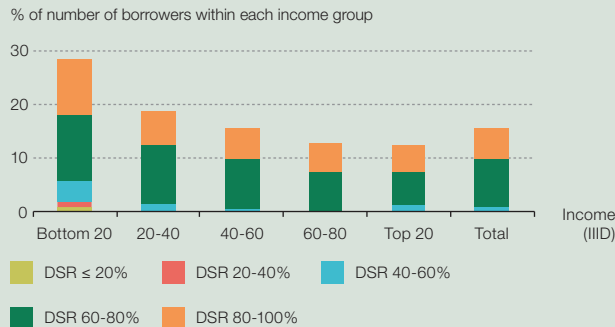
<sup>7</sup> Bilston et al (2015) and Albacete and Fessler (2010).

<sup>8</sup> For this study, basic necessities are defined as: (i) food and non-alcoholic beverages; (ii) housing rental and maintenance; (iii) water, electricity, gas and other fuels; (iv) transportation; (v) education; and (vi) healthcare.

At the aggregate level, 15.4% of total borrowers covered in the analysis had negative financial margins (Chart 6). As expected, the highest share of borrowers with negative financial margins was found in the bottom 40 income group (21% of borrowers within the income group), with an estimated amount of DAR of about 3% of total debt. Including borrowers in the 40-60 income group, the DAR increases to about 8% of total debt.

Chart 6

### Borrowers with Negative Financial Margin by Income Group



The share of borrowers with negative financial margins decreases substantially to about 13% for borrowers within the 60-80 and top 20 income groups (Chart 6). As noted earlier, a larger portion of debt taken by such borrowers is secured debt, thus substantially mitigating the impact of negative financial margins on bank asset quality. Findings from the Financial Inclusion and Capability Survey conducted by the Bank in 2015 also suggest that borrowers in the higher income groups are much more likely to have higher levels of savings and other forms of household wealth that can be drawn on to service debt. This is corroborated by the delinquency and impairment ratios observed for borrowers in this group which were substantially lower than the industry average (Chart 7 and Chart 8).

Chart 7

### Gross Delinquent Loans

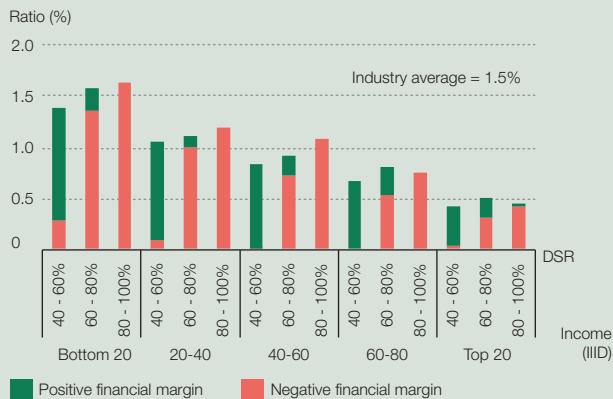
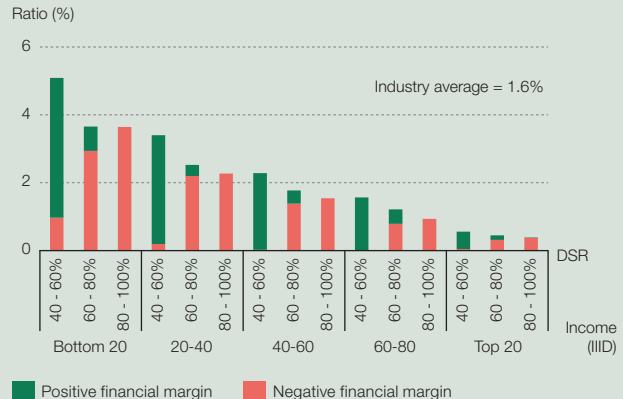


Chart 8

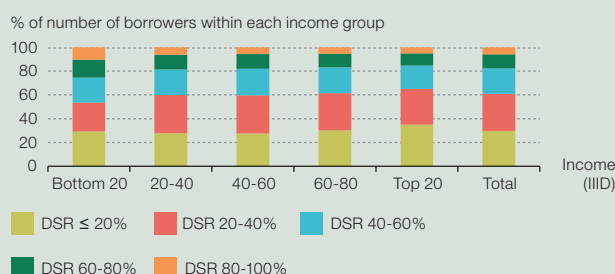
### Gross Impaired Loans



The analysis further shows that across all income groups, borrowers are much more likely to be in a negative financial margin position if their DSR exceeds 60%. For more vulnerable borrowers in the bottom 40 income group, negative financial margins were observed even at lower DSR levels. Borrowers with DSRs exceeding 60% accounted for about 18% of total borrowers across all income groups (Chart 9). Of this number, 40% are in the 60-80 and top 20 income groups. This suggests limited potential, based on the current profile of household debt, for losses from individual debt exposures to increase significantly beyond current levels as represented by DAR for the bottom 40 income group.

Chart 9

#### Debt Service Ratio for Borrowers by Income Group



### Policy Implications

In general, lending policies of both banks and non-banks typically require a borrower's total debt servicing obligations to be below 60% of income at the point of debt origination. The analysis presented here affirms that this has had a key role in mitigating risks in the household sector. A material change in the profile of household debt – particularly in terms of the distribution of household debt across income groups and DSR levels – could, however, alter this and weaken household resilience, with broader implications for financial and macroeconomic stability. This underscores the need to maintain continued vigilance in lending practices, as well as support for households to effectively manage debt through sustained education and debt assistance programmes. This analysis also shows that households at greater risk include those in the 40-60 income group of a younger demographic and living in major employment centres, based on the profile of their debt. Measures such as improvements to public transportation that will reduce the need for borrowings to purchase vehicles and increase income earning opportunities will be important to complement continued vigilance in ensuring responsible financing practices by lending institutions.

Further studies on the relationship between DSR and default probabilities may provide guidance on indicative levels of prudent threshold of DSR level for different income groups. This could contribute towards financial institutions' credit underwriting, risk management and loan loss provisioning practices. It could also contribute towards greater differentiation of borrowers' credit risk profile based on the DSR level across age and income groups, geographical location and type of financing facility. For the Bank, through the application of proportionality of regulations, this can reduce potential unintended consequences (such as reduced access to financing for eligible borrowers) of broad macroprudential policies. In addition, further studies can better inform the design and calibration of stress test scenarios and parameters to assess the shock absorption capacity across borrowers and lenders.

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## Evolving Dynamics of Banks' Funding and Liquidity Management

By Fann Shar Linn and Vincent Ang

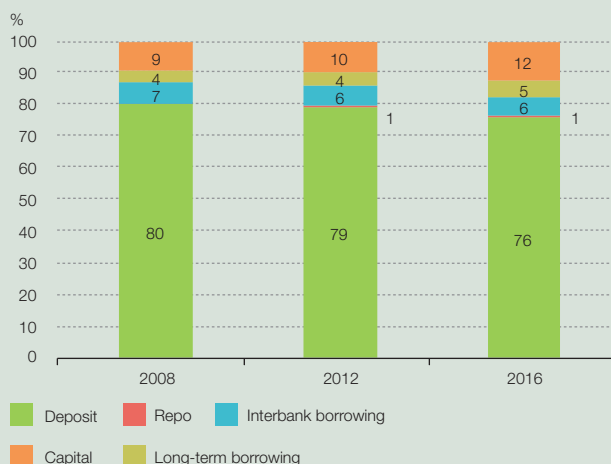
The transformation of the Malaysian financial landscape over the last few decades has been one marked by deeper and more active markets, greater economic openness and increasingly sophisticated participants. Collectively, these changes have had a significant impact on bank funding structures, the nature of market liquidity and the manner in which banks manage associated risks. The present dynamism of liquidity risk management warrants a re-thinking of the traditional indicators used to determine funding stability in relation to asset growth. This article explores this issue, along with how banks have progressively adapted their liquidity risk management practices to a changing market environment.

Up until the early 2000s, banks relied primarily on customer deposits (from both the wholesale and retail segments) for funding. By the turn of the millennium, customer deposits accounted for 82% of total funding liabilities within the banking system. This in part reflected the high savings rate at the time, which had averaged at 36.6% of total gross national income (GNI) throughout the 90s (2016: 28.8% of GNI). Investment options, particularly those for retail depositors, had also been relatively scarce in the previous decade. From 2000 to 2005, the average outstanding size of the unit trust/asset management market was 13.8% of total liquid financial assets, compared to 23.5% as at end-2016. Additionally, banking assets were chunkier, with a significant proportion (34% of total assets) comprising corporate loans with long gestation periods.

This stands in stark contrast to bank balance sheets today, which have been radically transformed by three key developments in the financial system. Firstly, Malaysia's capital markets have grown significantly in size and depth. This development has enabled financial institutions and investors to diversify funding and investment strategies through expanded funding sources from the bond and equity markets (Chart 1 and Chart 2). From 2010 to 2016, the Malaysian corporate bond market expanded at an annual rate of 9%. In the same period, the equity market grew by 11% annually in terms of market capitalisation. Second, greater economic and financial integration has seen Malaysian banks expanding their regional footprint in line with growing trade linkages within Asia. Between 2012 and 2016, the overseas assets of Malaysian banks grew at a compounded annual growth rate of 16%. Continued flows of foreign direct investment and financial integration have also broadened the role and functions of banks, both

Chart 1

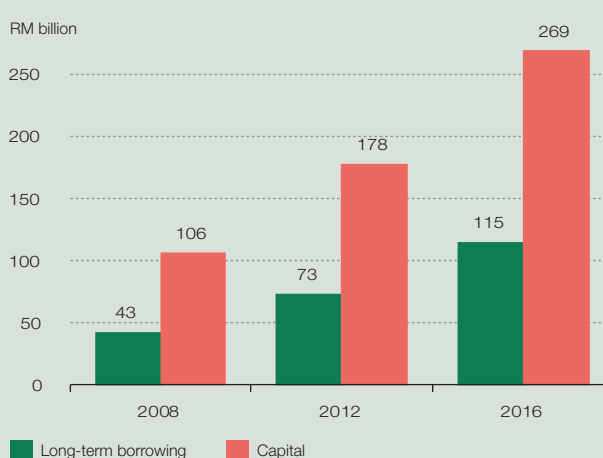
### Banking System: Composition of Funding Sources



Source: Bank Negara Malaysia

Chart 2

### Banking System: Capital and Long-term Borrowing



Source: Bank Negara Malaysia

at home and abroad. These developments have afforded banks greater flexibility in managing liquidity risk, supported by innovations in products and risk management. Finally, these changes are set against a backdrop of wealthier and more sophisticated financial consumers who are better enabled to make optimal financial choices through an expanded offering of financial products and an increasingly digitised economy. This, along with lower savings and higher consumer activism, has reduced the relative stability of customer deposits and contributed to a gradual shift to a broader funding base for banks.

### Indicators of Liquidity Risk

The relevance of the **loan-to-deposit ratio (LDR)** as an indicator of liquidity risk depended on an environment where (i) deposits were significantly more stable; and (ii) chunky and illiquid loans constituted the main bulk of a bank's assets. A high LDR implied that the bank may be taking on higher liquidity risk by growing loans faster than it can fund them through deposits. Today, however, the LDR presents liquidity risk in a severely limited context. In particular, the LDR does not reflect the increasing diversification of funding sources and tenors in tandem with loan growth. This in turn results in an overestimation of liquidity risk.

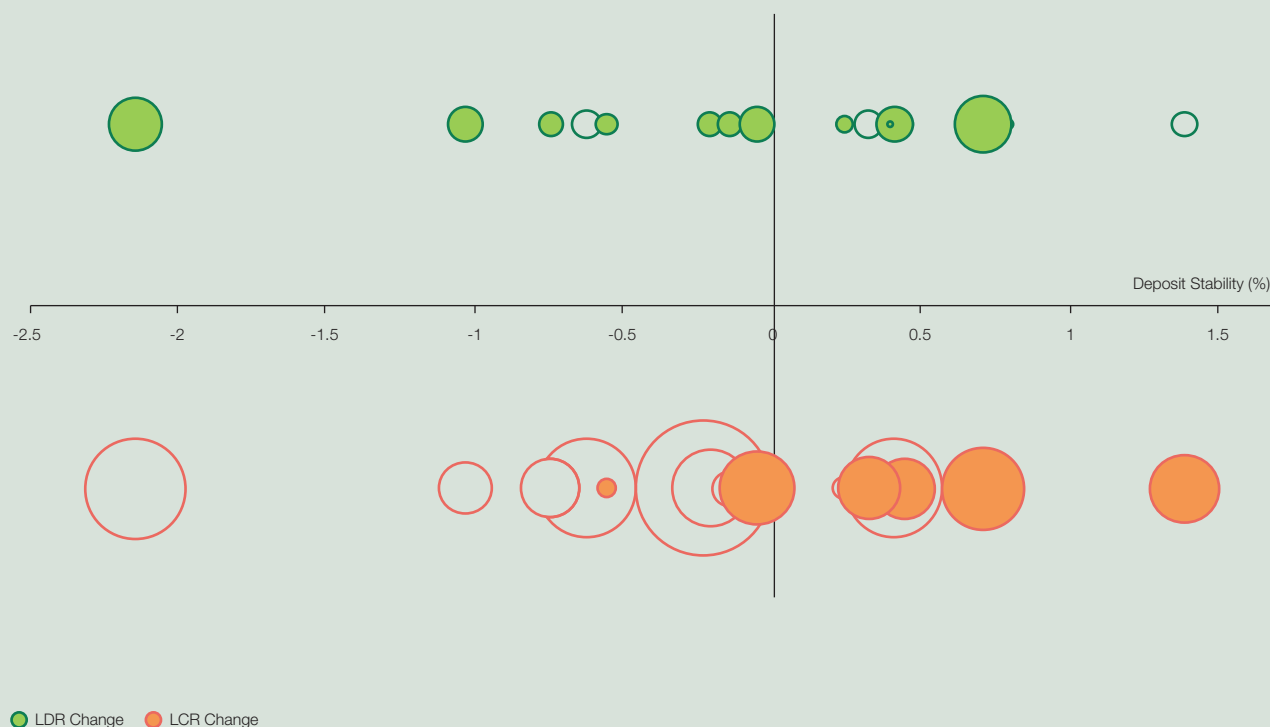
It is important to note that the LDR's fundamental assumption that deposits are a stable form of funding no longer holds for all types of depositors, taking into account factors such as level of sophistication, yield-sensitivity and available investment alternatives that have developed over time. Technological progress has also played a key role in accelerating the mobility of deposit funds, chiefly through reducing the cost of funds transfers and providing financial consumers with greater, immediate access to product-related information that influences their savings and investment decisions. More recent liquidity risk frameworks and ratios enable a more granular assessment of highly varied behavioural patterns among depositors, as discussed later in this article.

On the asset side, the LDR does not consider the greater mix between various loan types, securities and other investments that is characteristic of most bank balance sheets today. While loans continue to be a dominant component, it is important to account for, and measure, the liquidity value of these and other assets. The availability of secondary markets, supported by market developments in securitisation, allow banks to bolster their liquidity positions through asset-side adjustments, as opposed to the liability-side dependence assumed under the LDR. Reliance on loans as the sole proxy for funding needs could result in a significantly inaccurate measure of liquidity risk, including the underestimation of risk arising from off-balance sheet obligations.

Recognising the need for a more encompassing and granular approach towards measuring liquidity risk, the Bank introduced the **Liquidity Framework (LF)** in 1998. The LF requires banks to project potential cash flows for up to a year by determining the contractual and behavioural maturity of assets, liabilities and off-balance sheet items. This captures the maturity transformation undertaken by a bank more comprehensively, and flags any significant maturity gaps. To ensure that there are sufficient funding buffers within the short timeframe in which liquidity pressures can develop, the framework enforces a minimum net liquidity surplus of 3% for maturities up to 1 week, and 5% for the one-week to one-month maturity bucket. Additionally, the LF defines a set of 'liquefiable assets' – assets that are deemed to be of sufficient quality to be liquidated without a significant loss in value, even under stressed conditions.

The **Liquidity Coverage Ratio (LCR)**, a component of the Basel III regulatory reforms, builds on the conceptual foundations of the LF. The LCR standard, which has been in force in Malaysia since June 2015, ensures that banks have sufficient high-quality liquid assets (HQLA) that can be used to satisfy liquidity needs in a 30-day severe stress environment. The assumptions used for this scenario are modelled on observations from the 2008 global financial crisis. The LCR considers a broader range of factors that can affect funding stability compared to the LF. These include the type of counterparty, transaction tenor and redemption features of a specific product. As shown in Chart 3, increasing deposit stability is more closely correlated to an improvement in the LCR compared to that in the LDR. On the other hand, HQLA – similar to liquefiable assets under the LF – are broken down into three categories ranked according to quality and potential liquidity value under stressed conditions. Assets are classified based on features such as credit rating, ease and certainty of valuation, and the size and volume of a particular asset market.

Chart 3

**LDR versus LCR: Sensitivity to Deposit Stability**

Notes: The sample used for the chart above is the largest 20 banks in Malaysia by deposit size, each of which is represented by a bubble. Shaded bubbles represent an increasing LDR or LCR, while empty bubbles represent a decreasing LDR or LCR. The size of each bubble represents the size of change of these ratios between December 2015 and December 2016. "Deposit Stability (%)" is the difference in the average monthly movements of total deposits between 2015 and 2016. Moving along the x-axis from left to right represents increasing deposit stability.

The chart shows that deposit stability is more closely correlated with the LCR compared to the LDR. This is demonstrated by the difference between the concentration of green and orange bubbles: Green (shaded) bubbles are more dispersed across the spectrum, indicating that there is a weak relationship between the LDR and deposit stability. Orange (shaded) bubbles are concentrated to the right of the x-axis, which indicates that an increase in deposit stability tends to correlate with an improvement in the LCR.

Source: Bank Negara Malaysia

As markets become more familiar with its underpinning concepts, the LCR will eventually become an important liquidity indicator. In the meantime, however, inconsistent disclosure practices across jurisdictions affect comparability, thus constraining wider use of the LCR by market participants and rating agencies. While this is expected to be resolved over time, the need for a simple and reliable ratio was recognised by the Bank, and met with the publication of the **loan-to-fund (LTF)** and **loan-to-fund-and-equity (LTFE)** ratios in 2015 to better reflect material changes in bank funding structures over time that had rendered the LDR inaccurate. The ratios, which are disclosed in the Bank's monthly publication of Monetary and Financial Developments, improve on the LDR as a measurement of liquidity by reflecting the broader funding base of banks, and can be easily determined from available financial information on individual banks. The LTF includes debt issuances in addition to deposits, while the LTFE expands on this with the inclusion of equity.

Going forward, the Bank plans to introduce the **Net Stable Funding Ratio (NSFR)**, a complement to the LCR under the Basel III liquidity reforms. Similar to the LF, the NSFR provides a one-year projection of maturity profiles for both assets and liabilities under business-as-usual conditions. In particular, the NSFR improves on the LF by estimating the amount of stable funding that a bank requires to fund various assets and off-balance sheet items, depending on factors such as asset quality, transaction tenor, counterparty type, encumbrance period and the likelihood of honouring non-contractual obligations.

As understanding and familiarity with improved liquidity risk indicators such as the LCR and NSFR increases, these should provide a richer framework for conveying information on liquidity risks. The Bank will continuously enhance the data that it publishes on a regular basis to take these developments into account, with the aim to better inform markets.

### Liquidity Risk Management Practices

It is important that the use of liquidity risk indicators also be approached within the context of liquidity risk management practices of individual banks. This is the principal objective of enhanced liquidity risk management disclosures required as part of key information to be included in banks' financial statements.

Observations from a closer examination of the practices of Malaysian banks point to sustained improvements in their internal procedures, practices and systems over time as part of a broader effort to enhance their resilience against liquidity risk. These include refinements in the areas of governance, stress-testing, contingency funding plans and funds transfer pricing (FTP).

On governance, the board of directors and senior management of banks have taken an increasingly forward-looking and comprehensive approach towards managing liquidity risk. This includes establishing risk appetites and liquidity strategies that consider emerging liquidity concerns, inter-linkages of liquidity risk with other areas of risk (e.g. credit, market and reputational) and the potential impact of the bank's actions on broader systemic risk. This has improved the calibration and sensitivity of internal risk appetites, thus enhancing the agility of banks in responding to adverse market developments.

Compared to the previous decade, FTP is now common practice across the industry; contributing significantly to the integration of liquidity risk management within day-to-day banking operations. Based on supervisory observations, larger banks in particular have made substantial progress in improving the granularity and sensitivity of pricing methodologies. Best practices include highly differentiated pricing of liquidity according to various measures of funding stability and asset quality. On a whole, these practices have enabled banks to implement better incentive systems that reward business units which attract stable funding, and adequately charge those that generate illiquid assets.

Internal liquidity stress tests have also advanced considerably beyond the more rudimentary sensitivity analyses of the past. Banks have been moving towards an increasingly sophisticated approach in identifying potential liquidity risk events, particularly those that are unique to specific banking operations. These are typically events of low frequency, but high severity. Stress-testing by banks are also now modelled on a range of assumptions that incorporates idiosyncratic events, severe disruptions to markets that the bank is active in and other inter-linked markets, and the second-round effects of shocks. Banks have also improved their utilisation of stress test outcomes, particularly in formulating mitigating measures such as contingency funding plans, risk policies and quantitative limits to address identified vulnerabilities.

### Beyond Ratios and Minimum Requirements

An over-reliance on simplified indicators such as the LDR is likely to induce market reactions or behaviours that are disruptive, particularly where they fail to provide an accurate representation of evolving bank balance sheets and funding strategies. This was observed towards the end of 2015, where a year-end fixation on LDR was a significant contributory factor to deposit competition which ultimately saw the spread between the overnight policy rate (OPR) and KLIBOR rates diverge materially from historical averages. In a highly dynamic market environment, managing liquidity risk requires clear internal risk policies, a close and functioning relationship between various business and control functions and adequate investments in data systems and technical competencies. It is through these broader accomplishments, supported by effective regulatory compliance, that banks will ensure their resilience through the challenges posed by different business cycles over the years to come.

# Banking Sector

|           |                                                                                        |
|-----------|----------------------------------------------------------------------------------------|
| <b>53</b> | Performance of the Banking Sector                                                      |
| <b>55</b> | Developments in the Banking Sector                                                     |
| <b>58</b> | Regulatory and Supervisory Framework                                                   |
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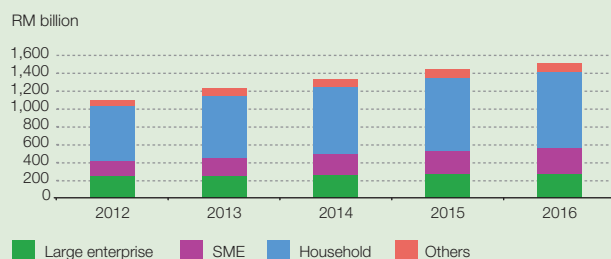
# Banking Sector

## PERFORMANCE OF THE BANKING SECTOR

Financing activity remained supportive of the economy during the year. Outstanding financing by the banking system expanded by 5.3% in 2016 to RM1,521.5 billion (2015: RM1,445.1 billion) (Chart 2.1).

Chart 2.1

### Outstanding Banking System Financing



Source: Bank Negara Malaysia

Financing growth was driven by financing to the household sector, which recorded a growth of 5.3%. The pace of growth continued to moderate (2015: 7.7%) in line with measures aimed at promoting responsible financing practices, which have in turn mitigated risks from the higher levels of household indebtedness. Overall business sector financing expanded by 4.9%, with growth largely driven by financing to small and medium enterprises (SMEs), which grew by 9.2%. Banking institutions remain

cautiously optimistic in lending to SMEs, despite continued uncertainties in the outlook for the global economy. The approval rate for SME financing by banking institutions remained healthy at 77.3% in 2016. Banking institutions and development financial institutions (DFIs) continue to work closely with the Credit Guarantee Corporation Berhad (CGC) and government agencies to develop financial products and provide technical assistance for SMEs, lending important support to the key role of SMEs as a growth driver of the economy. SMEs can also expect to benefit from additional fund allocations announced under the 2017 Budget.

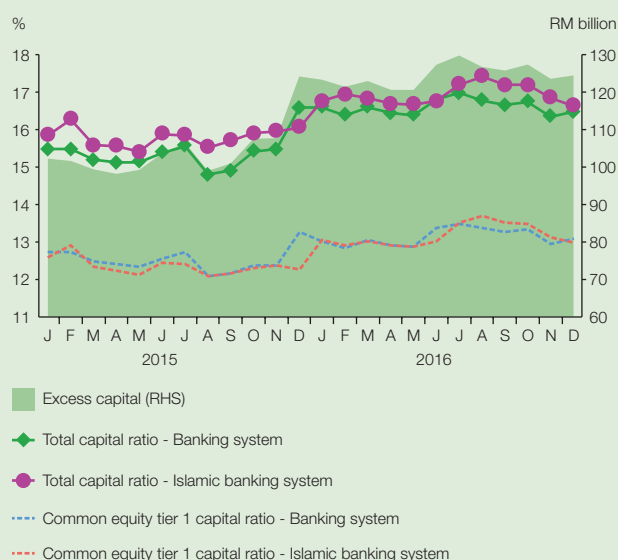
In line with slower financing activity, banking system assets grew at a more moderate pace by 3.8% in 2016 to RM2,443.6 billion (2015: 6.1%). The capacity of the banking sector to absorb losses remained strong, supported by high levels of capitalisation. Common equity tier 1 (CET1), tier 1 and total capital ratios of the banking system remained well above the minimum regulatory levels at 13.1%, 14.0% and 16.5%, respectively (2015: 13.3%, 14.2% and 16.6%, respectively). Banking institutions' capital in excess of minimum regulatory requirements increased slightly by 0.2% to RM124.5 billion as at end-2016 (Chart 2.2). A significant part (approximately 85.1%) of this continued to be represented by high quality loss-absorbing capital in the form of equity, retained earnings and reserves.

## 2017 Budget Allocation for SMEs

- RM500 million for Unit Peneraju Agenda Bumiputera (TERAJU) to assist in the expansion of Bumiputera companies.
- RM200 million for Perbadanan Usahawan Nasional Berhad (PUNB) to implement the Entrepreneurship and Business Premises Financing Programme.
- RM130 million for National Export Promotion Funds to support export promotion programmes by the Malaysian External Trade Development Corporation (MATRADE), Malaysian Investment Development Authority (MIDA) and SME Corporation Malaysia (SME Corp).
- RM100 million for an Export Fund under TERAJU to support Bumiputera companies venturing abroad, as part of the Government's wider effort to boost the contribution of SMEs to 25% of total exports by 2020.



Chart 2.2

**Banking System: Capital Adequacy Ratios and Excess Capital**

The strengthened capitalisation of banking institutions was observed amid largely stable levels of risk-weighted assets (RWA) which declined marginally to 63.1% as a share of total assets (2015: 64.4%), in line with slower financing growth. Increased holdings of high quality liquid assets by banking institutions to meet liquidity requirements also contributed to the decline. The leverage ratio of the banking system, which measures the tier 1 capital base relative to non-risk weighted assets, stood at 7.7% as reported by banking institutions during the observation period, more than double the suggested minimum level under Basel III. Although banking institutions are not required to comply with a leverage ratio requirement under domestic rules at this juncture, they remain in a comfortable position to do so. With the remaining design and calibration issues of the leverage ratio nearly finalised by the Basel Committee on Banking Supervision (Basel Committee), the Bank expects to consult the industry on the proposed leverage ratio standards for domestic application in the first half of 2017.

## The Malaysian banking sector remains strong and well-capitalised

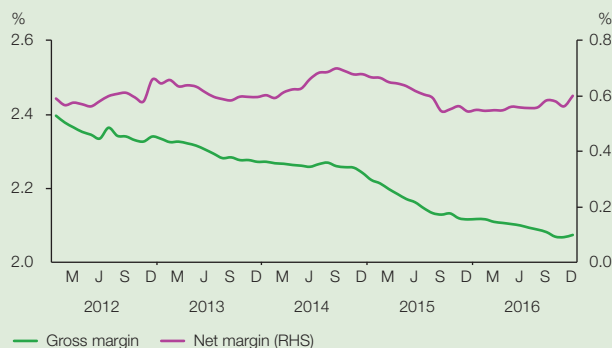
The banking system, including Islamic banking institutions, recorded higher pre-tax profits of RM32.2 billion (2015: RM29 billion) in 2016. Returns on assets and equity correspondingly increased marginally to 1.34%

and 12.5%, respectively (2015: 1.32% and 12.3%). The stronger earnings performance was driven by treasury activities amid more volatile financial market conditions. In particular, banking institutions recorded higher net gains of RM1.8 billion from sales of “available-for-sale” instruments and foreign exchange transactions. Earnings were further bolstered by higher dividend contributions from subsidiaries, which grew by 27.8% to account for 10.3% of pre-tax profits. These dividends were mainly contributed by Islamic banking operations on the back of strong financing growth (refer to ‘Performance of the Islamic Banking Sector’ in the Chapter on ‘Islamic Finance Development’ for further details). Higher net interest income from financing activities also supported earnings, contributed mainly by an increase in term financing for the purchase of property and working capital.

Gross interest/financing margins narrowed, reflecting the competitive financing rates offered by banking institutions amid moderating financing growth and a marginal increase in the average cost of funds (2016: 2 basis points). Notwithstanding this, net interest/financing margins after operating costs and loss provisions improved slightly (Chart 2.3), as banking institutions showed further efficiency gains. Much of this was driven by the adoption of new technologies to streamline operations and reduce overheads. Measures taken by some banking institutions to optimise their workforce in line with refocused business directions also helped to cap annual increases in staff costs. Overall, pre-tax profits per employee, an indicator for revenue efficiency, increased by 14.9% for the year.

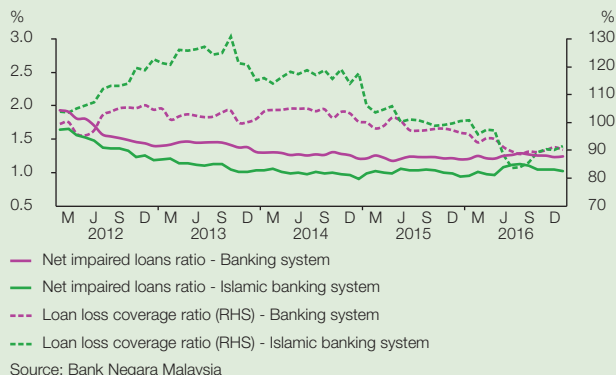
The asset quality of banking system loans deteriorated slightly, mostly on account of the anticipated weakening of loan performance in the oil and gas-related (O&G), automotive and real estate sectors (refer to ‘Managing Credit Risk Exposures to Businesses’ in the Chapter on ‘Risk Developments and Assessment of Financial Stability in 2016’ for further details). The share of impaired loans rose to 1.24% of total loans net of individual impairment provisions (2015: 1.20%) (Chart 2.4). A more broad-based deterioration in asset quality was not observed, owing to strengthened risk management practices in recent years, particularly for the household sector following the implementation of the Bank’s strengthened standards on responsible financing. Banking institutions continued to maintain prudent provisions for loans with a high loan loss coverage ratio of 90.2% (2015: 96.3%). This was further reinforced by collective impairment provisions and regulatory reserves held by individual banking institutions above the minimum required level of 1.2% of net loans.

Chart 2.3

**Banking System: Gross and Net Interest Margins**

Source: Bank Negara Malaysia

Chart 2.4

**Banking System: Net Impaired Loans Ratio and Loan Loss Coverage Ratio**

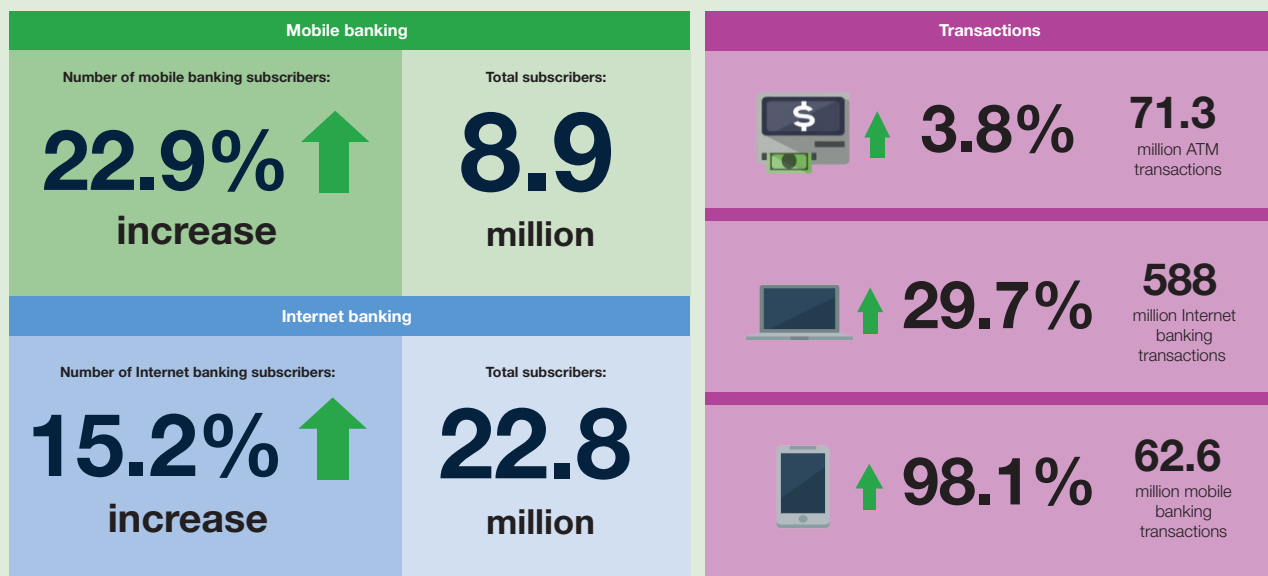
Source: Bank Negara Malaysia

**DEVELOPMENTS IN THE BANKING SECTOR**

In 2016, the Malaysian banking landscape continued to be shaped by technological advancements and greater internationalisation of the financial system. The use of technology to deliver financial services saw a significant take-up, with a wider range of banking transactions increasingly conducted through self-service terminals and digital channels such as mobile banking, online banking and mobile applications (Diagram 2.1). In particular, mobile banking transactions registered a sharp increase of 98.1%. At the same time, new innovations continue to rapidly

emerge with the proliferation of financial technology (FinTech) start-up companies. Such companies are smaller and more agile towards digital developments, but typically face challenges in penetrating the market due to a lack of familiarity and trust among financial consumers. To unlock potential synergies provided by more technologically focused service providers, banking institutions are exploring collaborative approaches in the pursuit of innovation. These include the creation of accelerator programmes, through which banking institutions provide FinTech companies with critical access to industry knowledge to refine their products for market validation. This in

Diagram 2.1

**Use of Self-Service Terminals and Digital Channels in 2016**

Source: Bank Negara Malaysia

turn increases the potential for nascent initiatives to be transformed into commercially viable solutions.

## Banking institutions continue to tap into the enormous potential of financial technologies

The Bank is highly supportive of these developments, which have enabled the application of cutting-edge technologies in various aspects of banking (refer to 'FinTech Innovation' in the Chapter on 'Cross-Sector Developments' for further details on developments across the financial sector). Notable innovations include simplified and more secure procedures for on-boarding and verification of new customers using biometric authentication methods. Banking institutions also increasingly tapped opportunities presented by the use of artificial intelligence to improve access to financial products and better support customer relationships. In the payments space, contactless payments, enabled by near field communication technology, continued to gain traction. These developments continue to lend support to efficiency gains and lower compliance risks for banking institutions under operating conditions that remain challenging. For DFIs in particular, technological progress has also advanced the financial inclusion agenda. Key initiatives include the digitisation of services through virtual teller machines and mobile automated teller machines (ATMs), which widen outreach and provide greater access to banking services for rural communities.

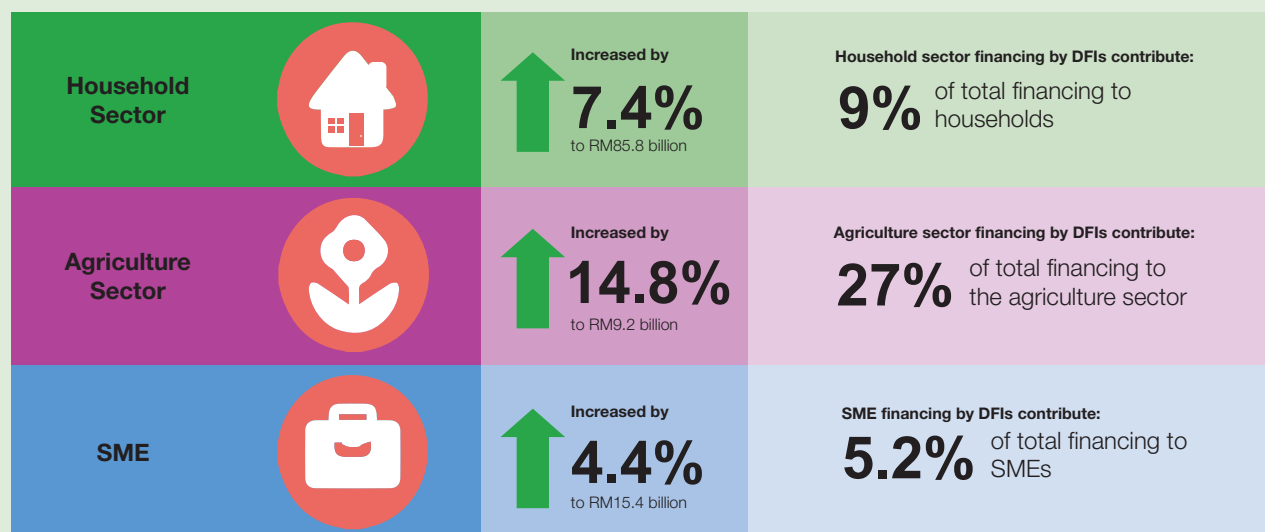
During the year, a commercial banking licence was granted to China Construction Bank (Malaysia) Berhad, further strengthening economic and financial interlinkages with one of Malaysia's key trading partners. Under the Financial Services Act 2013 and Islamic Financial Services Act 2013, a banking institution seeking entry into the domestic market is assessed against prudential criteria and the extent to which the entity will serve the best interest of Malaysia. The Bank has further refined its processes for evaluating the latter, which involves deeper engagements with applicants on their ability and commitment to deliver their value propositions. Such engagements also served to communicate development priorities for the banking sector, which include supporting growth in high value-added economic activities, fulfilling the needs of niche segments in the domestic market, and providing high-skilled employment opportunities in Malaysia. As at end-2016, the number of licensed banking institutions in Malaysia stood at 57, comprising 29 domestic banking institutions and 28 foreign-owned banking institutions.

## Inclusive growth

The Bank, in collaboration with the banking industry, continued to direct efforts towards promoting inclusive access to affordable banking services for all segments of the Malaysian population. For the six DFIs under the purview of the Bank, total financing outstanding to the targeted growth sectors of these institutions

Diagram 2.2

### DFI's Financing to Targeted Growth Sectors



Source: Bank Negara Malaysia

expanded by 5.7% in 2016 to RM143.3 billion. While the growth was largely driven by financing to the household and agriculture sectors, a positive trend was reflected across lending to all key targeted sectors (Diagram 2.2).

As at end-2016, total financing outstanding for micro enterprises under the *Skim Pembiayaan Mikro* stood at RM921.8 million. In total, RM3.5 billion in financing has been approved, benefiting more than 200,000 micro enterprise accounts under the scheme to date since its inception in 2006.

### Accessibility to financial services by unserved and underserved communities remains a key priority

The outreach of banking services also made further headway during the year. The number of financial services access points nationwide increased from 10,166 to 11,248, providing 99% of Malaysians with convenient access to safe, reliable and affordable financial services. As at end-2016, 97% of sub-districts in Malaysia had at least one financial access point.

## Initiatives to Support Financing for Innovation and New Growth Areas

### • Lowering entry costs through enabling regulation

Two key regulatory initiatives were introduced to promote the adoption of technology within the financial sector, namely the Bank's Regulatory Sandbox and the Securities Commission Malaysia's regulatory framework on peer-to-peer (P2P) financing. These aim to provide a proportionate regulatory environment for innovative financial solutions that can enhance the effectiveness of existing financial services, or create new services that cater to unmet needs. In addition, the new market proposed by Bursa Malaysia in September 2016 will allow SMEs to be listed at a lower cost under a more flexible regulatory environment. This is expected to broaden the funding reach of SMEs, while serving as a springboard for a more formal listing on the ACE board.

### • Reducing information asymmetries by leveraging on new data sources

With the growing sophistication in data analytics, the use of non-financial information to support credit decision-making is gaining traction. For instance, e-commerce platforms have drawn on transactional and payment data of their users to establish credit profiles, which have enabled them to venture into small business lending. Similarly, data harvested through integrated e-services enables lenders to identify changes in borrowers' loan repayment capacity, thereby reducing delinquencies and defaults. Recognising the potential in these approaches, the Bank is encouraging banking institutions and DFIs to explore big data analytics (e.g. by using an individual's shopping history, utility bill records, home and work addresses) and psychometric assessments to evaluate the credit profiles of potential borrowers with little or no track record. The Bank will continue to closely monitor these developments to ensure that the regulatory environment remains accommodative to new approaches to credit evaluation.

### • Developing a seamless SME financing process

The Bank is working with the industry to develop an integrated online platform to make it easier for SMEs to source financing. The aim is to reduce the time taken by SMEs to identify the appropriate financing product and fulfil documentation requirements that may differ across banking institutions. The platform seeks to streamline financing applications of SMEs, while recommending a range of suitable financing packages based on the applicant's financing needs and risk profile. This will overcome the need for SMEs to approach individual banking institutions separately, and at the same time reduce banking institutions' costs associated with the credit assessment process and non-standardised documentation. The platform will also provide practical support to unsuccessful applicants by linking them to relevant advisory and capacity building channels by the Government.

### • Improving bankability through capacity building

The Bank in collaboration with the financial industry, organised several programmes during the year to elevate the fund raising capabilities of SMEs. To this end, the programmes sought to further develop entrepreneurs' financial management skills and knowledge. On the supply-side, measures continue to be pursued to address the preconditions for banking institutions to accept intangible assets (such as intellectual property, which tends to be the sole asset of innovative start-ups) as collateral. The recent establishment of a pool of appraisal experts is an important step in developing the capacity of both the banking sector and SMEs to value intellectual property rights which, in turn, should accelerate the acceptance and use of these assets as collateral for financing. In addition, the National Innovation Agency Malaysia and PlaTCOM Ventures Sdn. Bhd. have established the Tech Commercialisation Platform to provide businesses with end-to-end investor matching and advisory support, from product research to prototype development, and ultimately, commercialisation.

This was driven by the continued expansion of the agent banking network with the number of agent banks now exceeding 7,900 (2015: 6,902). Over 12,000 savings accounts were opened via the agent banking network in 2016 and the number of transactions performed through agent banks increased by 58.6% to 100.3 million, valued at approximately RM8.5 billion (end-2015: 63.2 million transactions; RM5.7 billion).

In November 2016, the Bank launched a Financial Inclusion microsite to further enhance access to information by members of the public and SMEs on various financial inclusion initiatives. The microsite provides a centralised platform for all financial inclusion related information, including the products and services offered by financial institutions in Malaysia. This complements measures that continue to be pursued by the Bank, in collaboration with the industry and key agencies, to improve financing conditions for businesses supporting innovation and in new growth areas.

Collaborative efforts to promote inclusive growth are also being undertaken by the banking industry. In September 2016, an industry working group was established to pursue a more coordinated approach to delivering corporate social responsibility initiatives by the financial sector, thereby increasing their impact. This seeks to tap on opportunities to expand available resources and improve administrative efficiencies by pooling industry efforts to empower communities. To this end, raising the level of literacy among the urban poor has been identified as an immediate priority.

### Professionalisation of the banking industry

Efforts to raise the bar for professional conduct, knowledge and competence of the banking industry gained further momentum during the year. In a joint declaration with the Asian Institute of Chartered Bankers (AICB), banking institutions committed to enrol board members and key employees in the Chartered Banker programme. This represents an important step in the professionalisation of the banking workforce. The Chartered Banker qualification provides a reputable development pathway for members of the banking profession that aims to create a highly-skilled and ethical workforce. This is achieved by holding individuals who obtain the Chartered Banker qualification to high standards of professional and ethical conduct in the provision of banking services, thereby strengthening public trust and confidence in the banking sector.

## REGULATORY AND SUPERVISORY FRAMEWORK

### Implementation of Basel III standards

The implementation of Basel III standards remained a key focus of the Bank's regulatory and supervisory activities in 2016. Banking institutions transitioned smoothly to the higher minimum Liquidity Coverage Ratio (LCR) requirements, which was raised to 80% in 2017, in line with global transition arrangements. Most banking institutions were already reporting LCR positions above 100% as at end-2016.

A thematic review of LCR practices concluded that the standards are being implemented effectively across banking institutions, supported by adequate board oversight and internal controls. Improvements were also observed in the quality of reporting and timeliness in generating key liquidity metrics following the enhancements to banking institutions' operating systems. This work is now well advanced for most banking institutions. To ensure greater consistency in the interpretation of key LCR parameters such as the definition of stable deposits and operational accounts, the Bank published additional guidance which addressed variations noted during the review. Overall, banking institutions have better integrated LCR compliance with wider governance and risk management processes. This in turn is expected to reinforce sound liquidity management practices across banking institutions.

### Greater integration between liquidity standards and banking institutions' risk management arrangements is expected

Complying with the planned Net Stable Funding Ratio (NSFR) requirement is expected to be more challenging, given its focus on longer-term funding to reduce maturity mismatches. For some institutions, meeting the requirements will entail a significant rebalancing of their balance sheets in favour of more stable and longer-term sources of funding, or assets that require less stable funding. It is important that this process does not have any unintended impact on financial intermediation by the banking sector. Industry engagements were intensified in 2016 to better understand the specific challenges of individual banking institutions, which will contribute to the calibration of the NSFR standards and relevant transition arrangements. From the engagements, banking institutions appear to be well-placed in their ability to extend maturity profiles and diversify sources of



funding to comply with the NSFR. Strategies that banking institutions are considering to pursue include the issuance of medium and long-term securities, as well as longer-term money market instruments for retail customers and SMEs, such as retail negotiable instruments of deposit (NIDs).

Based on observation data, the banking system NSFR stood at 103.2% as at end-2016, with more than half of banking institutions reporting positions above 100%. The Bank will continue to closely monitor these positions and may consult the industry on the proposed NSFR standards after the second quarter of 2017.

Going forward, the Bank will be undertaking a comprehensive review of liquidity risk management practices in the Malaysian banking sector aimed at elevating industry-wide standards. This will take into account underlying changes in the funding profiles of banking institutions as well as developments in key funding markets (refer to the box article 'Evolving Funding Dynamics of Banks' in the Chapter on 'Risk Developments and Assessment of Financial Stability in 2016' for further details). Areas to be covered under the review will include the governance, identification, measurement, monitoring and control of liquidity risk.

### The Bank's regulatory reform agenda will remain anchored by domestic priorities

The Basel Committee expects to finalise the remaining components of its post-crisis reforms in the first half of 2017. This will address further enhancements to the risk-based capital framework to make the requirements of the global standard simpler, more risk-sensitive and comparable across jurisdictions. In respect of these reforms, a key priority for the Bank in the medium-term will be to improve the risk capture of banking institutions'

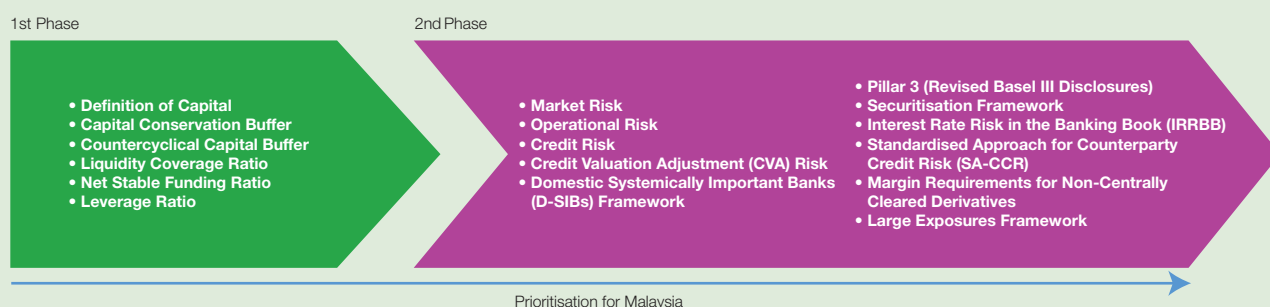
activities in the regulatory capital framework (refer to '2nd Phase' under Diagram 2.3), supported by an assessment of risks in the context of the domestic financial system. To this end, the Bank will commence a review of existing requirements for credit, market and operational risk in 2017, with a view to strengthen banking institutions' resilience against these risks. This will include strengthened capital requirements against counterparty credit risks for derivative exposures, in line with the increased activity of banking institutions in a more developed derivatives market. Overall, the sequencing of the reforms will consider the impact to the Malaysian economy, having regard to internationally agreed timelines and implementation progress globally.

### Recovery and resolution planning

The Basel standards are also complemented by broader international efforts to strengthen the resilience of the global financial system and address major shortcomings in the pre-crisis regulatory framework. These include reforms proposed by the Financial Stability Board to improve the recoverability and resolvability of financial institutions, particularly those that are systemically important. In this regard, the Bank and the Malaysia Deposit Insurance Corporation continued to advance work to develop the domestic recovery and resolution planning framework for Malaysia. The first phase of work focuses on the banking sector, which will be followed by an extension of the framework to insurers and takaful operators at a later stage. The Bank expects to conduct a pilot exercise with identified banking institutions to test the recovery planning framework in the second half of 2017. This will determine the final policy guidance to be issued to the industry.

Diagram 2.3

#### Implementation of Key BCBS Reforms



Source: Bank Negara Malaysia

## Key enhancements to credit risk management standards

- Strengthens requirements on credit risk measurement to promote greater sophistication in loss estimation approaches.
- Heightens governance expectations, with a focus on the involvement of the board and risk control function in the credit approval process.
- Expands requirements on the management of exceptional credits and the management of credit concentration, country and transfer risks.
- Introduces group-wide credit risk oversight expectations for risks arising from activities across entities within the group and jurisdictions.
- Promotes sound management of credit risk inherent in specific activities of insurers and takaful operators, such as the purchase of debt securities and ceding of risks to reinsurers or retakaful operators.

## Credit risk management

In January 2017, the Bank issued revised standards on credit risk management for public consultation. The revised standards aim to elevate credit risk management practices across the industry, taking into account developments in the size and diversity of product offerings, greater internationalisation of the financial system and the growing role of domestic capital markets as an alternative source of financing. The standards also address requirements that will support the effective implementation of the Malaysian Financial Reporting Standards 9: Financial Instruments (MFRS 9) by financial institutions, and promote alignment with prudential objectives.

## Stress testing

Regulatory expectations on stress testing were refined in 2016 to achieve more robust and forward-looking assessments of risks by banking institutions. Stress testing is a critical tool used to identify key vulnerabilities and material risks in banking institutions. It provides key input to the determination of the risk appetite and limits by banking institutions as well as capital, liquidity, recovery and resolution planning. The proposed changes were published in October 2016.

One new requirement is for banking institutions to conduct reverse stress testing, which seeks to uncover events or scenarios that could result in the banking institution becoming non-viable. Identifying such events or scenarios can help banking institutions develop a sharper focus on the risks that they are undertaking, whether the risks are within their risk appetite and the actions required to avert unacceptable risks. Such an exercise is expected to serve as input into the banking institution's risk management strategies and recovery plans to ensure that the banking institution is in a position to respond swiftly to the occurrence of any trigger event. Results of reverse stress tests (in addition to stress test results based on the Bank's prescribed scenarios and internally developed scenarios) are required to be periodically reported to the Bank. These submissions will supplement the Bank's financial stability and supervisory assessments.

## Managing conduct risks

Over the years, the Bank has intensified efforts to promote fair, responsible and professional business conduct amid continued competitive pressures and volatility in financial markets. In tandem with strengthened expectations, improvements continue to be

## Key enhancements to stress testing standards

- Promotes forward-looking assessments by requiring multi-year stress tests with a prescribed minimum time horizon of three years.
- Introduces expectations to account for spillover of risks from affiliates to the banking institution.
- Improves the quality of stress testing by requiring banking institutions to consider the interlinkages between different risk types during a stressed scenario.
- Strengthens banking institutions' risk mitigation strategies and recovery plans by requiring reverse stress testing to identify tail risks.



observed in the business conduct practices of banking institutions. Notably, the adoption of responsible financing practices has become more firmly entrenched. This is reflected in more consistent affordability assessments in the offering of financial products by banking institutions. Market conduct matters are also receiving greater attention from boards and senior management, and are more integrated within business plans of banking institutions. In addition, lower incidents of inaccurate or misleading advertisements flagged by the Bank during the year point to ongoing improvements in fair marketing practices by banking institutions.

### A greater emphasis on market conduct was observed across the banking sector

The Bank remains vigilant in monitoring and assessing conduct risks in the banking sector. In an era of more pervasive digital banking, the Bank has directed greater attention to the management of conduct risks associated with the wider adoption of technology by banking institutions, which can increase exposures to financial fraud (see also 'FinTech Innovation' in the Chapter on 'Cross-Sector Developments'). Banking institutions are taking steps to increase consumer awareness of precautionary measures that should be taken when accessing financial services through digital platforms. The increasing reliance on technology and digital channels for financial services also potentially increases the risk of unauthorised access to confidential customer information. During the year, banking institutions were required to conduct an independent review of the effectiveness of current controls in place to protect the confidentiality of customer information. The scope of the review examined the collection, use, storage and disposal of customer information. The review uncovered opportunities to further strengthen controls at several banking institutions, which are being acted upon by the banking institutions concerned. These relate mainly to improving system-based controls to prevent unauthorised access to confidential customer information and monitoring systems to detect unauthorised disclosures. More generally, banking institutions have been reminded to ensure that they maintain and regularly update internal training programmes that emphasise the responsibility of staff to strictly adhere to procedures for handling confidential customer information.

Supervisory actions were taken by the Bank against 24 banking institutions (including DFIs) in 2016 for

various non-compliances with conduct requirements issued by the Bank, as follows:

- Four banking institutions were directed to enhance control measures to prevent the unauthorised disclosure of customer information;
- One banking institution was directed to cease the imposition of prohibited fees;
- Six banking institutions were directed to modify and improve the level of disclosure in marketing materials to ensure product risks and pertinent information are clearly disclosed. The banking institutions were also required to revise the terms in contracts that were deemed unfair or detrimental to the customer's interests;
- 19 banking institutions were directed to ensure that basic banking services are offered as an option to all customers; and
- Seven banking institutions were directed to address gaps with respect to requirements in responsible and transparent financing policies.

Beyond regulatory efforts, industry-led initiatives continue to play a key role in building trust, enhancing operational efficiency and improving customer service. A joint effort between banking institutions and industry associations is currently under way to promote greater harmonisation of Customer Service Charters, which set out the fundamental principles and standards of customer service. This will serve as the basis for an industry-wide Customer Satisfaction Index survey, which is planned for 2017.

## REGIONAL AND INTERNATIONAL CO-OPERATION

The regional operations of domestic banking groups expanded (three-year compounded annual growth rate of total overseas assets: 17.1%) with prospects for future growth expected to improve further on the back of bilateral agreements facilitated by the ASEAN Banking Integration Framework (ABIF).

In 2016, the Bank entered into bilateral arrangements with Otoritas Jasa Keuangan, Bangko Sentral ng Pilipinas and the Bank of Thailand, paving the way for greater market access and operational flexibilities for qualified ASEAN banks in support of intra-regional trade and investment activities. Regional integration is expected to intensify over the next decade, aided by regional arrangements for financial stability that were established by ASEAN governors and finance ministers in April 2016, to promote greater regulatory transparency, capacity building and co-operation within the region.

## The Role of Alternative Finance to Fund the Needs of a New Economy

By Zarina Abd Rahman and Samuel Lee

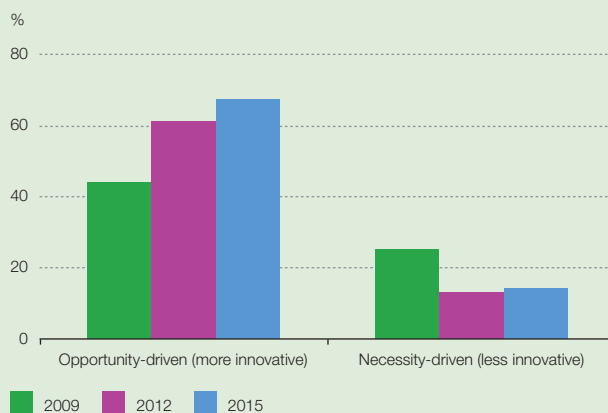
Business financing in Malaysia has evolved over the past decade. Among the more significant developments is the increasing prominence of capital market financing of business activity, which correspondingly reduces the concentration on bank financing. More recently, financing demand has also reflected broader shifts in economic activity towards those that are more knowledge-based with higher deployment of technology. This has spurred new sources of financing to meet changing demand drivers and novel lending approaches and programmes by traditional lenders. While the banking sector continues to be the predominant provider of financing, there has also been a gradual expansion in alternative finance (for the purposes of this article, alternative finance refers to financing methods outside of traditional bank-led debt finance, and includes leasing and factoring). This article explores the potential for alternative finance to complement bank-led debt financing in meeting the financing needs of increasingly diverse and innovative businesses.

### Alternative Finance as a Complementary Source of Funds

In recent years, Malaysian businesses, including SMEs, have increasingly adopted Information and Communication Technology (ICT) in their operations. Start-ups are also increasingly opportunity-driven, and as such, are more likely to adopt and deploy innovation to capitalise on new trends (Chart 1). This has led to the emergence of the sharing economy and e-marketplaces. A core premise of the sharing economy is the ability to generate economic value by maximising existing asset utilisation (uptime) and enabling convenient and cost-efficient access to resources without the need for ownership. E-marketplaces, meanwhile, leverage on virtual platforms to more efficiently match the supply and demand of goods and services, thus minimising holding costs. Underpinning these propositions is a growing trend of businesses that are inventory-light and intellectual property-centric.

Chart 1

#### Nature of Businesses for Start-ups



Source: SME Corporation Malaysia

Such businesses face challenges in accessing bank-based financing, largely due to the characteristics of bank financing, which are often incompatible with the financing of innovative and new growth ventures:

- The credit evaluation process of banks is heavily reliant on collecting and analysing large volumes of historical and quantitative data. The proliferation of credit scoring models used by banks may also accentuate cyclicalities in bank lending, resulting in new growth businesses facing greater difficulty in accessing bank financing during economic downturns.

- Credit evaluations are sometimes supplemented with relationship data, which relies on information collected over the course of a long-standing banking relationship. These include knowledge of a borrower's character and integrity, trusted references, or standing in the local community. However, such relationship-based assessments have decreased in significance as banks move towards more centralised systems for credit assessments and decision-making, which is commensurate with their growing size and complexity.
- Collateral, mainly in the form of commercial and residential real estate, remains a key feature of lending to lesser-known businesses with a limited track record, and is used by banks as a buffer against credit losses. Such collateral is generally lacking among newer businesses, as noted above. The dependency on collateral also reflects a degree of organisational inertia, whereby banks have been relatively slow to develop domain expertise in new growth areas or adopt new approaches and technologies for managing risks (Chart 2).

Chart 2

### Key Challenges in Financing Innovative and New Growth Areas

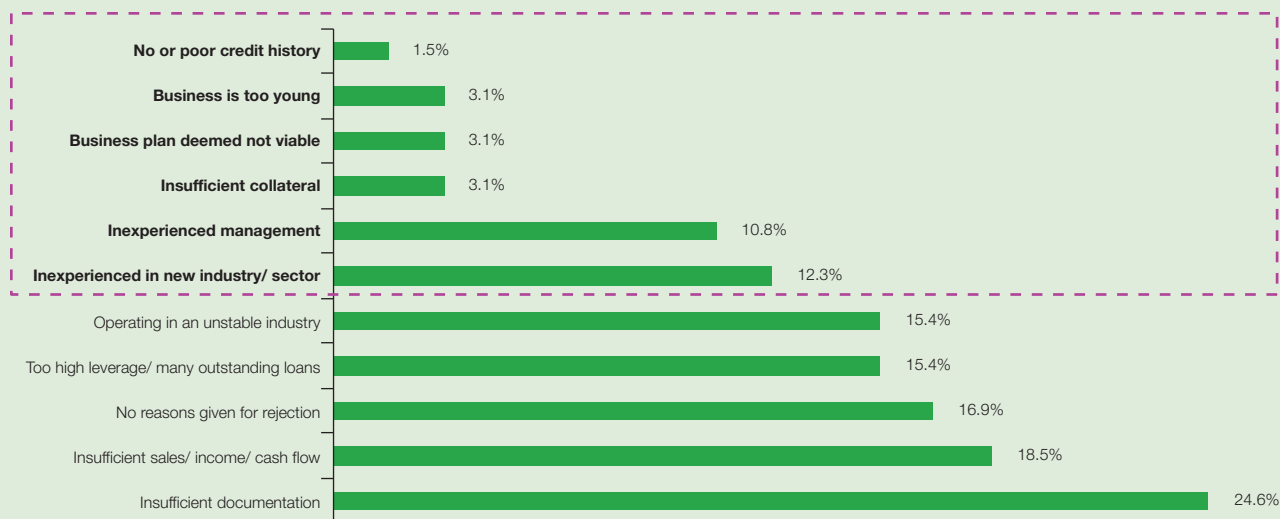


Source: Bank Negara Malaysia

The reasons for loan rejections commonly quoted by SMEs affirm these observations (Chart 3).

Chart 3

### Reasons for Bank Rejecting Loans, as Quoted by SMEs



Source: SME Corporation Malaysia Survey

To a large extent, bank behaviours reflect their obligations to protect depositors' interests. This restrains banks from undertaking excessive risks. Even if riskier businesses are adequately credit-screened, borrowers have strong incentives to use funds for more risky projects since all of the upside accrues to them, while banks and depositors largely bear the downside risks from defaults on interest and principle repayments.

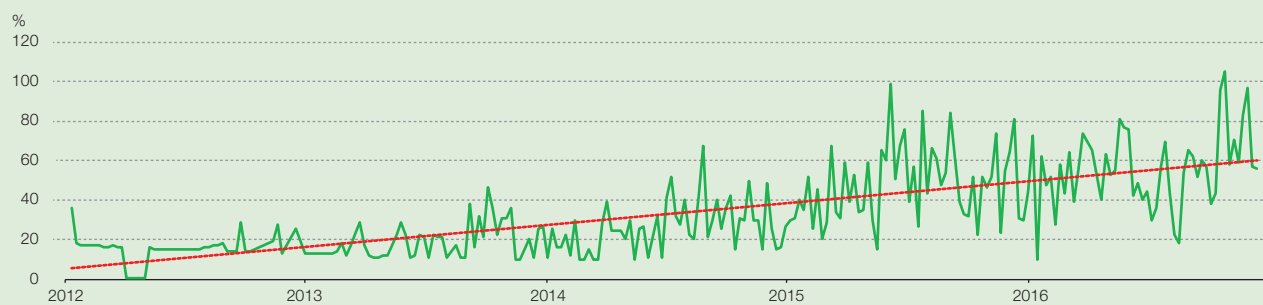
The development of alternative finance can help to bridge this gap by opening up new financing opportunities for innovative and early-stage businesses. Notable examples include:

- Crowdfunding and peer-to-peer lending, which lowers search costs for both lenders and borrowers;
- Private equity and venture capital, which allows for more aligned risk and return expectations of fund providers;
- Asset-based lending structures, which takes into account the value-generation capacity of reference assets; and
- Factoring, which enables less creditworthy borrowers to improve cash flows by substituting their credit risk with that of more established customers.

Alternative finance models are also increasingly leveraged on digital platforms, further increasing their efficiency and potential to address financing gaps in the economy. Data points suggest that the utilisation of alternative financing methods, though relatively small compared to traditional bank lending, have increased. Recently, six registered market operators have been licensed by the Securities Commission Malaysia to operate equity crowdfunding platforms. The platforms raised a total of RM6.2 million in funding for start-ups in 10 months. Public awareness on alternative financing avenues has also trended upwards (Chart 4) and businesses have increasingly reported using alternative financing methods (Chart 5), supported by the growth in non-bank financial intermediation.

Chart 4

#### Google Searches for "Crowdfunding" in Malaysia (index)



Source: Google trends

Chart 5

#### SMEs Reported Using Alternative Financing

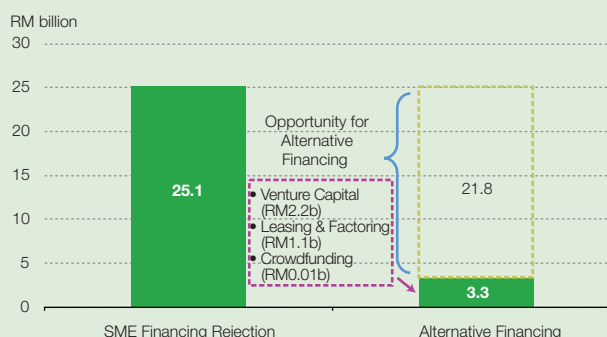


Source: SME Corporation Malaysia Survey

There remains significant room to support the development of alternative finance in Malaysia. In 2015, key outstanding alternative financing, which encompasses venture capital, leasing and factoring, and crowdfunding, amounted to RM3.3 billion compared against RM25.1 billion in total SME financing applications that were rejected by banks. This suggests an estimated financing gap of RM21.8 billion that could potentially be met by alternative finance (Chart 6). The gap between the current volume of factoring and leasing in Malaysia (at 0.64% and 0.69% of gross domestic product [GDP] respectively) and global average factoring and leasing volumes in more developed countries (at 4.55% and 1.55% of GDP<sup>1</sup> respectively) points to further opportunities for an additional RM48 billion in financing that could be raised for Malaysian SMEs through factoring and leasing facilities.

Chart 6

### SME Financing Gap as at 2015



Source: Bank Negara Malaysia

## Bank-intermediated Alternative Finance in Malaysia

Banking institutions themselves have had a role in encouraging the development of alternative finance in Malaysia. This is most evident in the Islamic banking sector, with the application of investment intermediation and value-based banking practices underpinned by Shariah contracts contributing to the growth of alternative finance. Notably, the innovative use of equity- and exchange-based financial instruments such as *musharakah* and *ijarah* offer differentiated value propositions, which allow risks to be shared between investors and business owners. This utilises investment account structures that are managed by Islamic banking institutions.

The provision of alternative finance that combines commercial and social objectives through *waqf* and other donation-based arrangements to deliver more direct benefits to society is also gaining traction within the Islamic banking sector. The application of cash *waqf* to eradicate poverty and improve access to education and health services for those in need is an example of a wider intermediation role that the Islamic banking sector is well-placed to perform (refer to Chapter on 'Islamic Finance Development' for further details on investment accounts and *waqf*).

A number of banks have also introduced invoice trading platforms, an electronic complement to traditional factoring, to support viable but cash-strapped businesses. The platform enables SMEs to convert their receivables into cash in a quick and efficient manner, and at more competitive rates, due to a transparent online bidding process for receivables on the platform. It also reduces fraud associated with multiple financing generated from the same invoice. Invoice trading is expected to grow, with electronic-based platforms playing a more important role in crowding-in sophisticated investors as well as institutional funders. The potential to tap into a wider, new consumer base has also seen the increasing participation of banks as institutional funders in bank-intermediated invoice trading platforms.

<sup>1</sup> Global Leasing Report 2016, White Clarke Group, 2016; Annual Review, Factor Chain International, 2016.

## Policy Priorities to Further Develop Alternative Finance

Priorities to further develop alternative finance as an important source of early-stage financing will need to encompass the following:

- Strengthening institutional arrangements to coordinate, align and drive developmental policies for alternative finance through a top-down approach. This requires detailed consideration of appropriate regulatory and legal frameworks, and the supporting financial infrastructure to provide efficient access to, and delivery of, alternative financing solutions.
- Improving the quality, coverage and integrity of data on alternative financing to inform both public policy and private credit decisions. Standards should be established for alternative finance providers to report accurate and timely data to oversight authorities. Economic data should also be segmented to provide visibility on innovative and new growth industries.
- Establishing a unified collateral registry for movable assets. Such a registry can substantially expand the collateral base for financing by enhancing transparency and preventing fraud. This will benefit SMEs in particular, through the ability to unlock the value of movable assets such as machinery and inventory, which often account for the majority of SMEs' capital stock.
- Promoting the development of open application programme interfaces (APIs) that enable third-party developers to leverage on the database of financial institutions to deliver faster, cheaper and customised solutions. This will need to be supported by common standards for data sharing by financial institutions as well as requirements on information security, data exchange and other data-related policies.
- Intensifying public engagement and education initiatives to raise awareness among SMEs on available alternative financing avenues. Efforts to encourage fund providers (including angel investors) to participate more actively in alternative finance markets are also important.

# Insurance and Takaful Sector

|           |                                                                                          |
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# Insurance and Takaful Sector

## PERFORMANCE OF THE INSURANCE AND TAKAFUL SECTOR

The insurance and takaful sector continued to show positive growth in 2016. Total premiums and contributions increased by 4.4% to RM61.3 billion (2015: +4% to RM58.7 billion), while combined insurance and takaful assets expanded by 5% to RM277 billion (2015: +5.7% to RM263.8 billion). Growth has continued to be supported by strong overall capitalisation. The industry's aggregate capital adequacy ratio (CAR) stood at 243.9% as at end-2016, with surplus capital above the regulatory minimum of 130% increasing further to RM37.9 billion (2015: RM36.4 billion).

Total premiums and contributions of the insurance and takaful sector increased by 4.4% while assets expanded by 5%

There were 55 insurers and takaful operators, including reinsurers and retakaful operators, in the industry as at end-2016 (Table 3.1 and Table 3.2). Over the past five years, this number has reduced from 60 as a result of mergers and acquisitions, mostly among general insurers, to improve resilience and gain efficiencies in scale. The total number of

Table 3.1

| Number of Insurers and Takaful Operators |        |
|------------------------------------------|--------|
| Categories                               | Number |
| Life insurer                             | 10     |
| General insurer                          | 19     |
| Composite insurer                        | 4      |
| Family takaful operator                  | 3      |
| Composite takaful operator               | 8      |

Source: Bank Negara Malaysia

Table 3.2

### Number of Reinsurers and Retakaful Operators

| Categories          | Number |
|---------------------|--------|
| Life reinsurer      | 1      |
| General reinsurer   | 5      |
| Composite reinsurer | 1      |
| Retakaful operator  | 4      |

Source: Bank Negara Malaysia

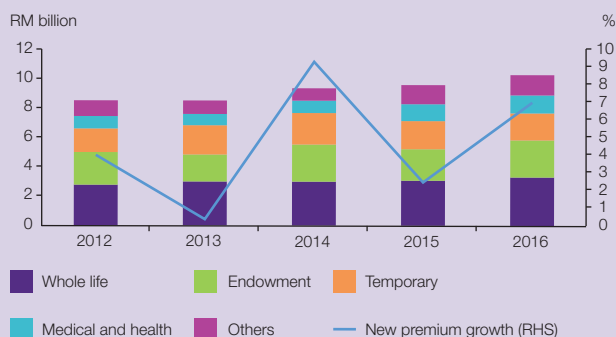
approved insurance and takaful brokers and financial advisers stood at 56. A further 54 loss adjusters are registered under the Financial Services Act 2013, mainly active in assessments of motor and fire-related claims.

## Premiums and contributions

Drivers of growth continue to be different for the life insurance and family takaful sectors (Chart 3.1 and Chart 3.2). In the life insurance sector, new business growth has been mainly supported by higher growth in regular premium endowment policies that combine protection with savings and investments. In contrast, new business in the family takaful sector

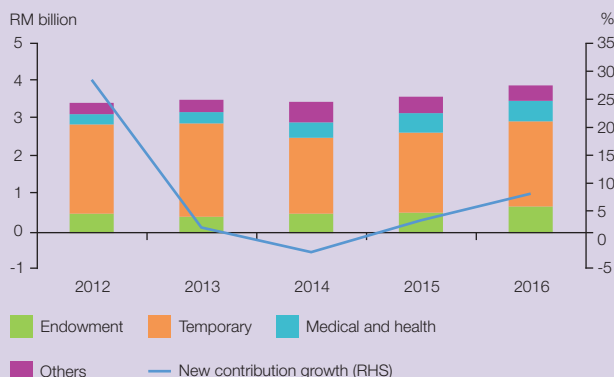
Chart 3.1

### Life Insurance Sector: New Premium Growth and Product Composition



Source: Bank Negara Malaysia

Chart 3.2

**Family Takaful Sector: New Contribution Growth and Product Composition**

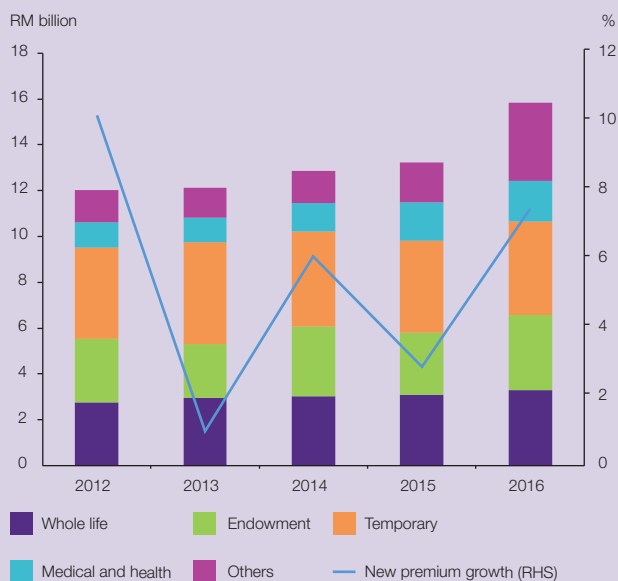
Source: Bank Negara Malaysia

remains largely driven by group term policies, including credit-related term policies, which provide relatively higher protection benefits but do not include any savings or investment component.

### The share of medical and health insurance/takaful business has increased, mainly reflecting higher group employee benefits

Since 2006, a significant share of new business growth has been attributed to investment-linked insurance and takaful policies. Greater flexibility, provided under such policies for policyholders to adjust their premiums in response to changes in investment appetite or financial circumstances, has made such policies particularly attractive for those with higher variability in income or seeking to take advantage of investment opportunities. Between 2012 and 2016, investment-linked business increased at an average rate of 8.1% to account for 32.9% of total life insurance and family takaful business. More volatile financial markets over the past two years, however, have had a dampening effect on growth in this segment given its higher sensitivity to changes in market conditions as noted above. The composition of life insurance and family takaful business has remained broadly unchanged, with the notable exception of medical and health insurance/takaful business which increased as a share of total business from 8.7% to 12.4% in the last four years (Chart 3.3). Much of this growth has been associated with the higher group employee benefits provided by corporations in line with rising health financing costs.

Chart 3.3

**Life Insurance and Family Takaful Sector: New Premium and Contribution Growth and Product Composition**

Source: Bank Negara Malaysia

### Insurance take-up expanded but the penetration rate has been stagnant over the last five years and a significant protection gap remains

Insurance penetration rate, measured by the ratio of total number of life insurance and family takaful policies in force to the total population, has remained fairly static within the range of 54% to 56% over the last five years. However, this has been against higher total sums insured which rose to RM1,964.8 billion in 2016 (2015: RM1,852 billion). This is still believed to be inadequate even for the insured population, with industry studies<sup>1</sup> estimating an average protection gap<sup>2</sup> in Malaysia of between RM553,000 for families whose primary wage earner has some form of life insurance, to RM723,000 for families without any form of life insurance taken by the primary wage earner. Affordability and access required to service policies in underserved market segments remain key barriers to higher levels of penetration. Several important initiatives taken in recent years to improve transparency, encourage product

<sup>1</sup> 2012 Underinsurance Study in Malaysia by Life Insurance Association of Malaysia and Universiti Kebangsaan Malaysia.

<sup>2</sup> A measure of the extent to which families are underinsured following the death of primary wage earner.

innovations and expand channels for delivering insurance and takaful products and services (further elaborated in this Chapter) are expected to reduce these barriers and improve prospects for achieving the 75% penetration target set under the Economic Transformation Programme.

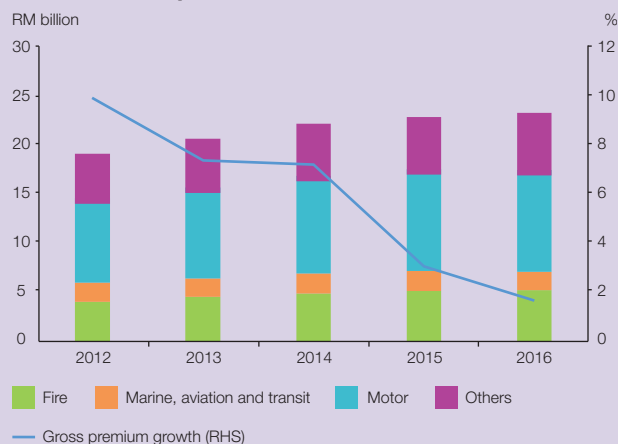
### General insurance and takaful growth was supported by fire business, offsetting the impact from slower motor vehicle sales and vessel charter utilisation

In the general insurance and takaful sector, gross premiums and contributions moderated in line with economic conditions (Chart 3.4). Slower sales of motor vehicles impacted the motor insurance and takaful segment which continues to represent a dominant (43.4%) share of general insurance and takaful business. Lower oil prices and vessel charter utilisation also posed a drag on business growth with sharply lower premiums recorded in the offshore oil-related (-14.9%) and marine hull (-12.6%) business segments. Growth, however, continued to be supported by sustained demand for fire insurance and takaful, both by businesses and individual property owners. Overall, gross premium and contribution growth remained marginally positive at 1.7% (2015: +3.1%).

About 90.4% of insurance premiums and takaful contributions underwritten domestically are retained in the country, broadly unchanged over the past 10 years

Chart 3.4

#### General Insurance and General Takaful Sector: Gross Premium and Contribution Growth and Business Composition



Source: Bank Negara Malaysia

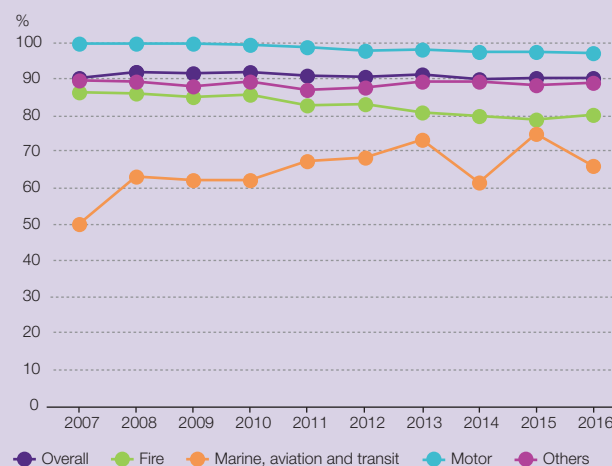
(Chart 3.5). The relatively high retention level is largely influenced by the dominant share of personal business lines (motor, medical and health, and personal accident insurance/takaful) which have smaller exposures per policy and less complex policy features. Domestic insurers and takaful operators have also been able to underwrite and retain a majority of risks in some corporate lines, such as workmen's compensation and employers' liability insurance/takaful, which exhibit lower volatility in loss experience and are supported by reasonably diversified risk pools. Domestic capacity to underwrite and retain larger and more complex risks, however, remains underdeveloped resulting in such risks being largely insured abroad. This is more pronounced in the marine, aviation, liabilities, performance bonds and energy segments of business where retention levels have generally remained below 75% over the last five years. This accounted for the bulk of reinsurance premium outflows which amounted to RM1.9 billion for all risks combined in 2016. In line with the development of the economy and its changing structure, it is important for the industry to strengthen its capacity to support more complex and non-traditional risks, both at a technical as well as financial level.

### Profitability

Profitability improved for the year. In the life insurance and family takaful sector, excess income over outgo increased by 10.3% to RM13.3 billion (Chart 3.6). This was mainly driven by higher growth in premium and contribution income. The surplus

Chart 3.5

#### General Insurance and General Takaful Sector: Retention Ratio



Source: Bank Negara Malaysia

Chart 3.6

### Life Insurance and Family Takaful Sector: Composition of Excess Income over Outgo

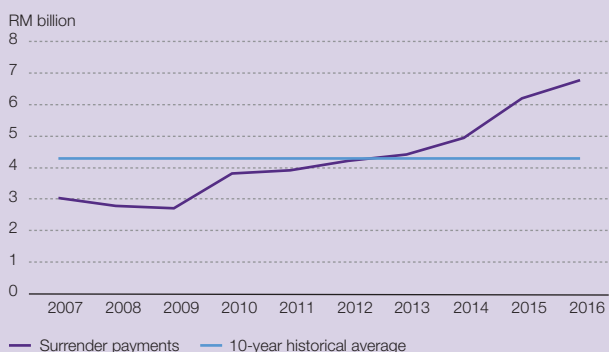


Source: Bank Negara Malaysia

arising<sup>3</sup> for combined life insurance and family takaful funds was, however, lower on account of adjustments to policy liabilities to reflect the extended period of lower yields that continued to prevail. This offset a deceleration in payments of net policy benefits following lower maturity payouts in 2016. Surrender payments over the past four years have remained higher than historical average (Chart 3.7), rising sharply since 2014. This is a concern given the loss of value to and protection for policyholders. The Bank has increased its

Chart 3.7

### Life Insurance and Family Takaful Sector: Surrender Payments

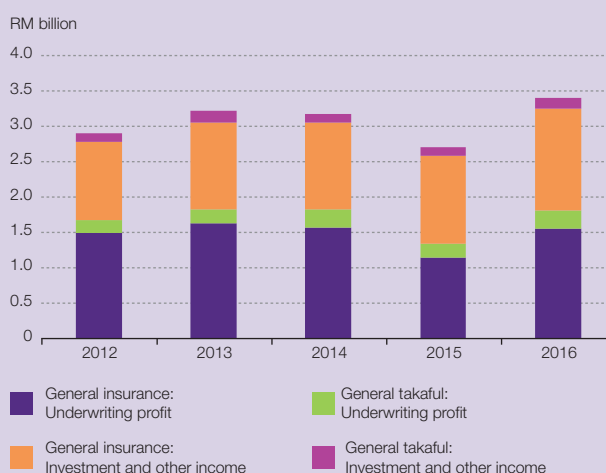


Source: Bank Negara Malaysia

<sup>3</sup> After payment of interim bonus but excluding surplus brought forward from the preceding year and transfers from shareholders.

Chart 3.8

### General Insurance and General Takaful Sector: Profitability



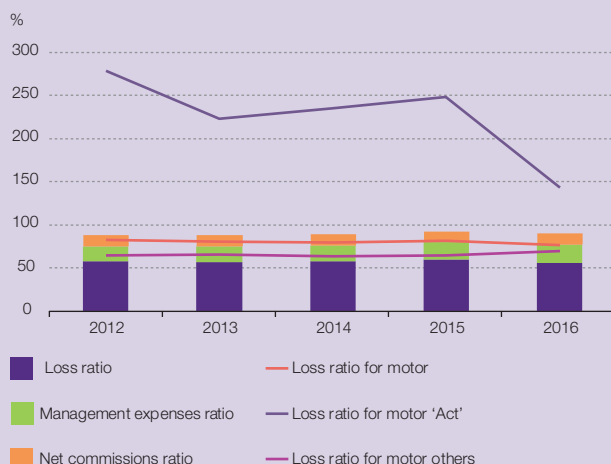
Source: Bank Negara Malaysia

scrutiny of sales practices by life insurers and family takaful operators and directed them to strengthen measures to conserve policies. Such measures have included providing options for policyholders to convert their policies into fully paid-up policies with adjusted sums insured and reviewing incentive systems for agents and intermediaries.

General insurers and takaful operators posted significantly stronger results compared to the previous year, with operating profits increasing 26.4% in 2016 (2015: -15.1%) (Chart 3.8). This was largely attributed to improved underwriting results for motor business following a release of claims reserves, including reserves held against risks underwritten through the Malaysian Motor Insurance Pool (MMIP), due to more stable claims development patterns. This was further supported by lower vehicle theft losses which have fallen steadily to almost half of its peak in 2013. These conditions, however, only partially mitigated losses on motor Third Party Bodily Injury and Death claims (Chart 3.9) which have continued to exceed premium levels by a significant margin, underlining the importance of persevering with broader reforms that are being implemented in the motor sector. This is to achieve pricing that is more aligned to risk and drive improvements required to stabilise and reduce losses. The reforms will also promote more equitable pricing, thereby reducing the need for cross-subsidies between lines of business or customer segments.

Chart 3.9

### General Insurance and General Takaful Sector: Combined Ratio and Loss Ratio of Selected Business Classes



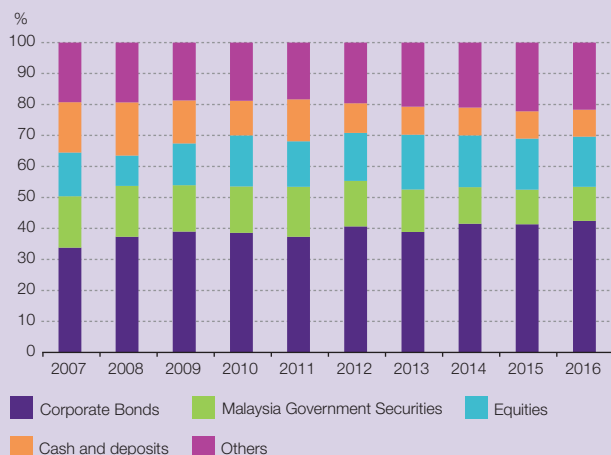
Source: Bank Negara Malaysia

While operating profits for general insurance and takaful improved, motor business continued to suffer significant losses in Third Party Bodily Injury and Death

Over the years, insurers and takaful operators have progressively shifted into higher yielding corporate bonds to improve risk-adjusted returns

Chart 3.10

### Insurance and Takaful Sector: Asset Composition



Source: Bank Negara Malaysia

on capital (Chart 3.10). Most of this substitution has been from holdings of cash and deposits and government securities. The industry's share of assets in government securities has declined over the past 10 years to 11% in 2016 (2007: 16.6%), while the share of assets in corporate bonds has correspondingly increased to 42.8% (2007: 33.8%). Insurers and takaful operators' appetite for credit risk remains generally conservative, with most firms maintaining a target portfolio minimum credit rating of AA and above. In an extended low yield environment, further adjustments in asset allocations are expected, particularly among life insurers and family takaful operators, to improve diversification and achieve more efficient asset-liability matching. This will likely continue to be balanced with strategies that improve resilience to greater credit volatility in the current economic climate.

## REGULATORY AND SUPERVISORY POLICIES AND DEVELOPMENTS

Policies and initiatives implemented in 2016 continued to build on and further strengthen foundations for the development of a more resilient, competitive and inclusive insurance and takaful industry. In line with the Bank's mandate to promote the fair treatment of financial consumers, regulatory and supervisory activities were also directed at managing key conduct risks assessed by the Bank and to reinforce high standards of professional conduct and fair dealings in the industry.

### Phased liberalisation of motor and fire tariffs

As foreshadowed by measures under the New Motor Cover Framework to improve efficiency in motor claims settlements and gradually bring tariff premiums closer to sustainable levels, the industry moved into the first phase of liberalisation of the motor and fire tariffs beginning 1 July 2016. The phased liberalisation will provide flexibility for more equitable pricing of risk which will incentivise better risk management in the form of responsible driving habits and adoption of road safety measures. The healthy competition generated will also be a catalyst for a wider array of motor and fire products, along with improved levels of service. The industry is well-placed to make this transition, with stronger financial and risk management capacity underpinning the transition.

The progressive liberalisation of tariff rates will take place over a three-year period to allow for orderly market adjustments. Under Phase I of the liberalisation, new motor and fire products may be offered at market-based prices while existing motor products under the tariff will continue to be available to the public at prevailing tariff rates. Under Phase II, which will commence on 1 July 2017, tariffs will be removed for all existing motor products except for motor third party products where tariff rates will be gradually adjusted. Further liberalisation of the tariff for motor third party products will be reviewed in 2019, taking into account market developments observed under Phases I and II.

### Beginning 1 July 2017, existing motor tariffs will be removed except for motor third party products

To allow room for insurers and takaful operators to moderate any motor premium increases, particularly where large numbers of policies are affected, premium rates for existing fire products will continue to be regulated with gradual adjustment. A review of the fire tariff will be undertaken together with remaining tariff for motor third party products as a clearer picture of the transitioning process emerges over the next three years.

A number of risks require attention. A disorderly price war among firms to maintain or gain market share may lead to the inadequate pricing of risks, in turn exposing the industry to significant losses and a retrenchment of underwriting capacity in the future. In addition to capital risk charges that are in place to counteract a race to the bottom in rates, insurers and takaful operators are required to submit rates that fall below specified thresholds for the Bank's review to mitigate this risk. Risks of motor insurance and takaful policies becoming unaffordable for some segments under market-based pricing are also being managed through appropriate transitioning arrangements by ensuring adequate transparency and educating vehicle owners on ways to improve their risk profile. It is additionally important to minimise public confusion regarding terms of cover as more varied products are introduced in the market. While these risks warrant close attention, they do not diminish the need for reform in the longer-term interests of ensuring a sustainable and more equitable motor insurance and takaful market, and strengthening incentives that will improve risk management and road safety.

As an important precondition for subsequent phases of liberalisation, work continues to progress on improving the availability of adequate and reliable data for the assessment of risks and claims. This includes improving the quality of data submissions by insurers and takaful operators to the Insurance Services Malaysia Berhad (ISM) which maintains a database and provides analytical support for the effective implementation of the phased liberalisation of the tariffs. This shared database is expected to complement product development, pricing and reserving activities by individual insurers and takaful operators through the pooling of industry data. ISM is also expected to roll out a fraud intelligence system in the second half of 2017 which will enable the identification of fraud patterns based on data collated from insurers and takaful operators on suspected fraudulent claims.

Measures are also being taken to enhance the coverage and granularity of reference data maintained by Motordata Research Consortium Sdn. Bhd. (MRC) which are used by insurers and takaful operators for claims assessments. This is further supported by the implementation of higher qualification and professional standards that will be introduced for loss adjusters.

### Life Insurance and Family Takaful Framework (Framework)

The Framework, issued in November 2015, sets out a three-pronged strategy aimed at encouraging greater innovation in the life insurance and family takaful sector to meet the protection needs of the Malaysian population. The Framework introduces greater flexibility for insurers and takaful operators to control distribution and management costs, promotes the development of alternative distribution channels and strengthens incentives for improving the quality of service provided by intermediaries. Key developments in the implementation of the Framework in 2016 are described below.

#### (i) **Implementation of a balanced scorecard for life insurance and family takaful intermediaries**

An over-emphasis on premium growth without adequate regard to policyholders' interests has led to more than a few instances in which firms were called out by the Bank for mis-selling products that were ill-suited to a policyholder's needs and financial circumstances. As noted earlier, this has also resulted in higher surrenders of policies in more recent years. The balanced scorecard (BSC) will introduce changes to the remuneration structures of intermediaries effective from 2018 with the view to better align



rewards with the overall quality of service and policies sold. The changes will improve incentives for intermediaries to observe higher standards of professionalism and service in providing advice and product recommendations, as well as ongoing customer support to policyholders throughout the duration of a policy. With over 95% of insurance and takaful business currently acquired through agents and intermediaries, this is expected to enhance the level of trust and confidence of financial consumers in the industry. To complement the BSC, life insurers and family takaful operators have also been required to provide all customers with a service guide detailing the areas of advice and service that customers can expect from insurance and takaful intermediaries.

Industry members have agreed on the key performance indicators (KPIs) under the BSC based on principles laid out by the Bank in the Framework. A pilot run of the BSC is currently in progress prior to its effective implementation in 2018.

Basic pure protection products will be available on direct distribution channels, starting with term products in 2017 followed by critical illness and medical and health products in 2018

**(ii) Availability of products through non-advisory direct distribution channels**

In October 2016, the Bank finalised requirements for all life insurers and family takaful operators to make basic pure protection products available, commission-free, on a non-advisory direct distribution channel. This will first begin with term products in 2017, followed by critical illness and medical and health products in 2018. Direct distribution channels include distribution through the premises of an insurer/takaful operator or an online platform. Customers will also be provided with tools to facilitate self-assessments of the suitability and affordability of a product to support informed, non-advised decisions. This is expected to increase the take-up of insurance, while reducing the cost of basic protection products.

**(iii) Introduction of online accounts for policyholders**

As part of measures under the Framework to improve the persistency of life insurance and family takaful policies, most life insurers and family takaful operators have, since July 2016, started providing policyholders with information on their policy details online. This

includes information on the status of policies and premiums to enable policyholders to keep track of and maintain their policies. Documents for filing claims and changes to details of the policyholder or nominations under the policy are also accessible online. From 2017 onwards, these online accounts will be extended to include information on investment-linked plans, policy loan balances, surrender values, bonuses for participating policies and details on trustees, assignees and nominees. This initiative will provide a practical and convenient means for policyholders to better manage their policies and ensure that they will continue to enjoy the intended protection accorded under the policies.

## Microinsurance and microtakaful

Among lower income groups, only 4% of households currently have some form of life insurance or family takaful cover. In line with the Bank's mandate to promote an inclusive financial system, encouraging broader microinsurance and microtakaful product offerings has therefore been an important priority of the Bank to address this protection gap. Focus has mainly been directed at lowering distribution costs and simplifying product design and delivery, while ensuring meaningful protection for policyholders.

Only 4% of lower income households are protected by life insurance or family takaful

In 2016, the Bank issued a discussion paper outlining regulatory parameters that are adjusted for lower risks inherent in microinsurance and microtakaful products. This is intended to encourage insurers and takaful operators to offer such products more widely. At the same time, increased efforts were made by the Bank and industry to educate the public on the importance of insurance and takaful protection, particularly among the underserved segments.

Since the publication of the discussion paper, a number of insurers and takaful operators have indicated their interest to introduce simple and affordable products targeted at lower income groups which will leverage on alternative delivery channels including the postal system, agent banking, government agencies and non-governmental organisations. Lessons learnt from these early movers are expected to increase traction from more firms in the industry to offer microinsurance and microtakaful products going forward.

## Insurance contract accounting standards

After many years in development, the International Accounting Standards Board (IASB) has announced that the revised International Financial Reporting Standards for insurance contracts (IFRS 17) will be published in 2017 with the full implementation of the standards coming into effect on 1 January 2021. The standards, which aim to improve the comparability and transparency of financial reporting for insurance contracts, will be adopted under the Malaysian Financial Reporting Standards, thus making them applicable to all licensed insurers and takaful operators. As it is expected to introduce fundamental changes to current valuation practices, the Bank will be reviewing current prudential settings and the extent of variability in insurance contracts that are prevalent in the industry in order to identify issues on which additional regulatory guidance may be required. This may also entail changes to current regulatory prescriptions to align prudential and accounting requirements. In the first phase of review, expected to be completed in 2017, focus will be given to the requirements that relate to the determination of fulfilment cash flows (cash flows needed to fulfil obligations of an insurance contract), the grouping of insurance contracts and the valuation of current service margins (expected accounting profits in an insurance contract).

## Global insurance capital standard

The International Association of Insurance Supervisors (IAIS) is developing a Risk-Based Global Insurance Capital Standard (ICS), which aims to establish a common methodology for supervisors across different jurisdictions to assess the capital adequacy of internationally-active insurance groups (IAIGs). An initial version of the ICS which will be used as a basis for confidential reporting is expected to be issued in the second half of 2017. This will inform further refinements to the ICS before its finalisation for adoption in 2019. While the ICS will be applicable at the group level, group-wide changes in valuation and capital management practices will inevitably impact individual entities within the group that are present in Malaysia. This development is timely, given the Bank's own plans to review the Risk-Based Capital Frameworks for Insurers and Takaful Operators to ensure that they remain relevant and effective in promoting the industry's resilience. The Bank is

currently working to develop a quantitative survey of valuation methodologies in the industry and their impact on capital and the measurement of risks under ICS. Where relevant, these assessments will be coordinated with the assessment of IFRS 17 requirements.

## Life insurance and family takaful policy surrenders

As noted earlier, surrenders of life insurance and family takaful policies have increased in recent years. A survey by the Bank showed that a common reason for policy lapses which is wholly avoidable, is the omission by policyholders to make regular premium payments. The introduction of online insurance and takaful accounts, coupled with stronger incentives under the BSC for intermediaries to continue servicing policies over their duration, are expected to reduce such lapses.

## Surrender payments have increased in recent years

Other key reasons identified for surrenders were financial pressures faced by policyholders which affect the affordability of insurance and takaful. This is further compounded by high pressure sales practices that induce policyholders to replace their policies, or to buy policies that they are unlikely to maintain given their financial circumstances and needs. These reasons have led the Bank to maintain a strong focus on addressing mis-selling risks in the industry.

With increasing intensity of the Bank's supervisory activities over the years and reforms introduced under the Framework gathering pace, the Bank has observed greater attention accorded by the board and senior management of insurers and takaful operators to the effective supervision of the conduct of agents. However, reviews of intermediary sales practices by the Bank continued to reveal weaknesses among some firms which increased the risk of unsuitable product recommendations being made to prospective customers.

During the year, the Bank directed several insurers and takaful operators to strengthen the administration of the customer fact find process and improve the quality of agency training. In addition, supervisory actions were taken against 11 insurers and five takaful

operators for various non-compliance with conduct requirements issued by the Bank, as set out below:

- Seven insurers and four takaful operators were directed to modify and improve the level of disclosures in product marketing materials;
- One insurer and one takaful operator were directed to refund premiums and contributions (including interest where applicable) amounting to RM1 million to 152 affected policyholders, for mis-selling life insurance and family takaful products to the policyholders;
- Three insurers and one takaful operator were directed to provide restitution amounting to RM6.6 million to 9,752 affected policyholders due to failures to properly supervise their agents, resulting in fraudulent activities; and
- Two insurers were directed to refund/transfer a total of RM10.9 million to 13,899 affected policyholders to rectify computational errors resulting in incorrect payments to and charges levied on policyholders.

### Supervisory actions were taken against several insurers and takaful operators for various non-compliance with conduct requirements

#### Repricing of medical and health insurance/takaful (MHIT) products

Escalating healthcare costs have contributed to increased repricing activity for MHIT products by insurers and takaful operators. To ensure that this is managed with due regard to the reasonable protection of policyholders, the Bank took steps during the year to promote greater discipline and transparency in policies and practices around repricing. Insurers and takaful operators were required to clearly address the frequency of repricing, level of cross-subsidisation and appropriate communications to policyholders within their repricing policies. In addition, they must provide options for policyholders to continue receiving MHIT protection by offering options to switch plans, reduce room and board limits or upgrade to enhanced features without additional medical underwriting. At the same time, the Bank is also in discussions with the Ministry of Health and other stakeholders on broader measures to address medical inflation, in particular among private healthcare providers. Further developments on this front will be communicated by the Government.

#### Revisions in bonuses for participating life insurance products

The policy document on Management of Participating Life Business, issued by the Bank in 2015, came into effect on 1 July 2016. It promotes more equitable outcomes for policyholders when insurers undertake bonus revisions by setting standards that must be observed by insurers in assessing the sustainability of insurance funds. Insurers are also required to take reasonable steps to manage policyholders' expectations and provide support to customers affected by bonus revisions.

In line with the strengthened expectations under the policy document, insurers have taken a more gradual approach to bonus revisions in order to moderate the immediate impact on affected policyholders. In addition, insurers have also improved their communications of bonus revisions to affected policyholders, with clear explanations of reasons for the revisions and the impact on policy benefits. In the current volatile financial market environment, the Bank will continue to closely review industry practices in determining bonus revisions to ensure revisions made are equitable and justified.

#### Plain language insurance and takaful policies

Following the issuance of the Guidelines on Product Transparency and Disclosure in early 2011, insurers and takaful operators have started to draft standard terms in insurance and takaful policies in plain and intelligible language. The shift to plain language aims to help consumers better understand the benefits, exclusions and obligations under policies that they have purchased and compare products. A key function of plain language documents is also to prompt important actions and behaviours by policyholders, such as notification of changes in health status or a claim event, or factors that should be considered in determining if a product will meet their specific needs.

#### The shift to plain language for insurance and takaful policies aims to help consumers better understand policy benefits, exclusions and obligations

About one-third of personal line insurance and takaful policies issued in 2016 used plain language policies, spanning a wide range of products including motor, houseowner and householder, personal accident and critical illness policies. With the full adoption of

plain language for private car and motorcycle policies issued beginning 1 November 2016, more than three quarters of personal line policies are expected to be presented in plain language in 2017. The Bank will be undertaking more intensive reviews of sample policies used by insurers and takaful operators to ensure that the plain language objectives are being effectively met.

## REGIONAL AND INTERNATIONAL CO-OPERATION

The Bank continued to participate actively in regional and international forums that promote supervisory co-operation across borders and global standards for sound insurance markets.

The Bank is a member of the Financial Stability and Technical Committee as well as the Capital Solvency and Field Testing Working Group of the IAIS, through which it contributes to international standard setting, including the ICS which will serve as a minimum measure of capital adequacy for IAIGs and global systemically important insurers. The Bank will also be hosting the 24th IAIS Annual Conference in November 2017 with the theme 'Insurance Supervision: Looking Beyond'. This will be the first time in 14 years that the IAIS Annual Conference is being held in an ASEAN country, with around 500 participants expected from 140 jurisdictions that make up the membership of IAIS.

On the regional front, the Bank participates in advancing co-operation and coordination through the Asian Forum of Insurance Regulators (AFIR) and the ASEAN Insurance Regulators' Meeting (AIRM). AFIR achieved significant progress as a platform for supervisory co-operation with the endorsement of AFIR's key action plans for

information exchange, regional co-operation and capacity building at the 11th Annual Conference of AFIR held in Taipei in April 2016.

The AIRM meanwhile serves as an important platform for dialogue and co-operation on developments and issues affecting ASEAN insurance markets. Improving insurance penetration and enhancing supervisory capacity continued to be key priority areas for member countries. The ASEAN Insurance Training and Research Institute (AITRI) which was established by the ASEAN member states in 2000, continued to play an important role in capacity building for ASEAN insurance regulators. During the year, four regulator training programmes were conducted in the areas of inclusive insurance, corporate governance and enterprise risk management, reinsurance supervision as well as supervisory co-operation, cross-border collaboration and crisis management. AITRI is also envisaged to play a greater role towards enhancing the readiness of ASEAN Member States for regional insurance integration. The year also witnessed the inaugural meeting of the ASEAN Insurance Forum (AIFo), which brought together ASEAN insurance regulators and trade negotiators to develop a roadmap for regional insurance integration to support trade, investment and economic linkages in line with the objectives of the ASEAN Economic Community. Regional insurance integration progressed a step further during the year with the conclusion of the Seventh Package of Commitments under the ASEAN Framework Agreement on Services. Under the Seventh Package, Malaysia has committed to liberalise the cross-border supply of marine, aviation and transit insurance and insurance broking services with effect from 20 December 2016.

## Evolution of Life Insurance and Family Takaful Distribution Channels

By Tang Khai Sheng

Effective and professional distribution channels are important to ensure that all segments of the population have access to life insurance and family takaful products and are able to make informed decisions for their financial protection needs. This box article explores the changes in the distribution channel landscape of the life insurance and family takaful industry and the deeper transformation needed for the industry to achieve this vision.

### From an Agency-Dominated System to a Dual-Channel System

During the early decades, the agency channel acted as the main driver of growth for the life insurance and family takaful industry as the population was still largely uninsured. Personal contacts and relationships were key strengths that were used very effectively by the agency channel to increase access to insurance and takaful products at a time when financial literacy was still low. As rising household incomes increased demand for financial services, the industry evolved into a dual-channel system during the 1990s, with the introduction of bancassurance to leverage on the branch networks and customer base of banks. From the first bancassurance arrangement in 1994, bancassurance sales have charted impressive growth, achieving more than half the market share of life insurance at its peak in 2004 (Chart 1). This transition to a dual-channel system was accompanied by a higher level of insurance take-up as evidenced by the average annual new business growth of 16% and increase in the insurance and takaful penetration rate from 13% to 51%<sup>1</sup> from 1990 to 2010 (Chart 2).

While new channels have subsequently been introduced to the market, in particular internet insurance in 2000 and financial advisers in 2001, their share remains small. These channels have not gained traction as companies have continued to prioritise the agency and bancassurance channels over investments to develop these new channels. This is in part out of concern for channel conflict. To date, direct and online distribution accounts for only 5% of life insurance and family takaful sales, compared with significantly higher shares of up to 25% observed in advanced markets<sup>2</sup>.

Chart 1

**Life Insurance and Family Takaful Sector:  
New Premium and Contribution Market Share by  
Distribution Channel**

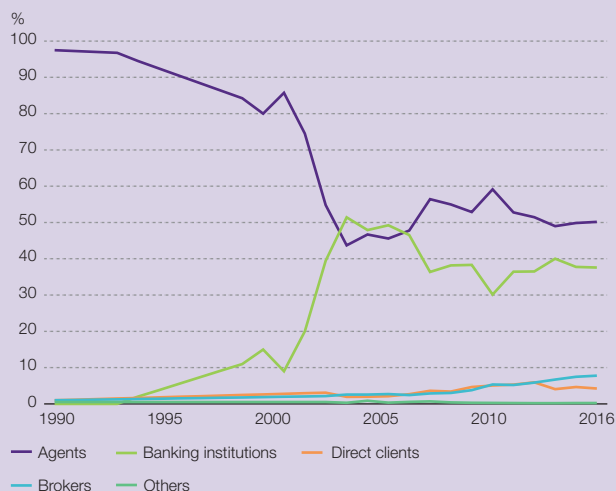


Chart 2

**Life Insurance and Family Takaful Sector:  
New Premium and Contribution by Distribution  
Channel and Penetration Rate**



<sup>1</sup> Defined as the ratio of total number of life insurance and family takaful policies in force to the total population.

<sup>2</sup> Swiss Re *sigma* No.2/2014 'Digital Distribution in Insurance: A Quiet Revolution' Report.

## Overall Growth Moderated while Certain Segments Remain Underserved

In the past five years, the incremental impact of the predominant agency and bancassurance channels appears to be diminishing. Similarly, growth of the life insurance and family takaful industry has moderated significantly compared with previous decades, with new business growth averaging 5.5% per annum between 2011 and 2016. Life insurance and family takaful penetration hovered at about 55% over the past five years (Chart 2). Eliminating multiple ownership of policies by the same policyholder, the proportion of the population that owns at least one life insurance or family takaful policy is only 35% (2015). Among the bottom 40% household income group, only 4% have some form of life insurance or family takaful cover according to the Financial Capability and Inclusion Demand Side Survey conducted by the Bank in 2015.

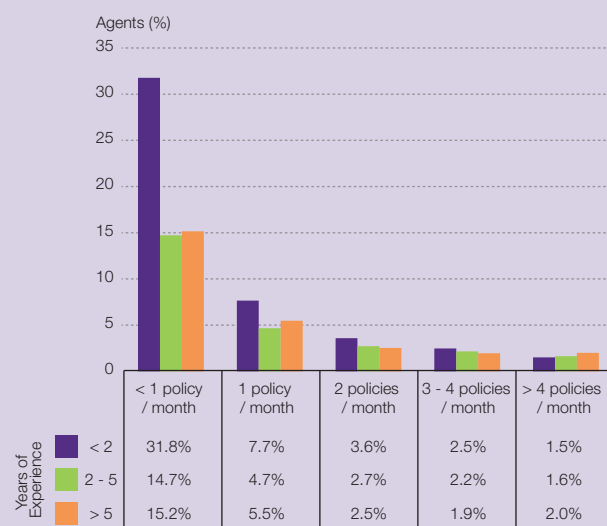
The plateauing insurance penetration rate and low take-up by the underserved population may be explained by several factors:

- **Agency productivity has been declining**

The number of policies generated per agent has been declining. 80% of agents today sell less than two policies per month and even among the more experienced agents, more than half sell less than one policy per month (Chart 3). A significant factor to note is that 60% of agents operate on a part-time basis, mainly to supplement other forms of employment. This constrains efforts to professionalise the agency force, which in turn makes it less attractive as a career of choice, thereby reinforcing a vicious cycle. There have been challenges faced in attracting and retaining agents and the number of agents has been declining since 2012, with only three out of 10 remaining in the industry after three years.

Chart 3

### Life Insurance Sector: Composition of Agents by Level of Productivity and Experience



Source: Life Insurance Association of Malaysia

- **Products have become less affordable to the mass market**

The average premium per policy has accelerated at an annual rate of 8% in the recent five years, compared with an average of 3% over the last 10 years. Unaffordability had also been cited by consumers as the main reason for not purchasing or lapsing life insurance/family takaful policies<sup>3</sup>. This trend coincides with a discernible shift towards more investment-linked products sold by agents. Such products account for two-thirds of new business generated by agents and typically have higher premiums due to a higher investment element. Consumers searching for yield

<sup>3</sup> 2015 Financial Capability and Inclusion Demand Side Survey.



in a low interest rate environment have bolstered demand for investment-linked products, which offer an upside potential on returns during periods of more buoyant financial markets. On the supply side, the lower levels of guarantees inherent in investment-linked products have also made them relatively more capital efficient for insurers and takaful operators to underwrite. This is evidenced by the change in overall product composition, with investment-linked products comprising 33% of new business market share in 2016 (2009: 25%). In addition, products have increased in complexity, with more product features leading to higher premiums. The confluence of these factors, combined with a commission-based remuneration structure that incentivises the agency channel to focus on products with larger premium sizes and more affluent consumers, have further contributed to lower affordability.

- **Bancassurance channels have focused on investment-linked and credit-related products**

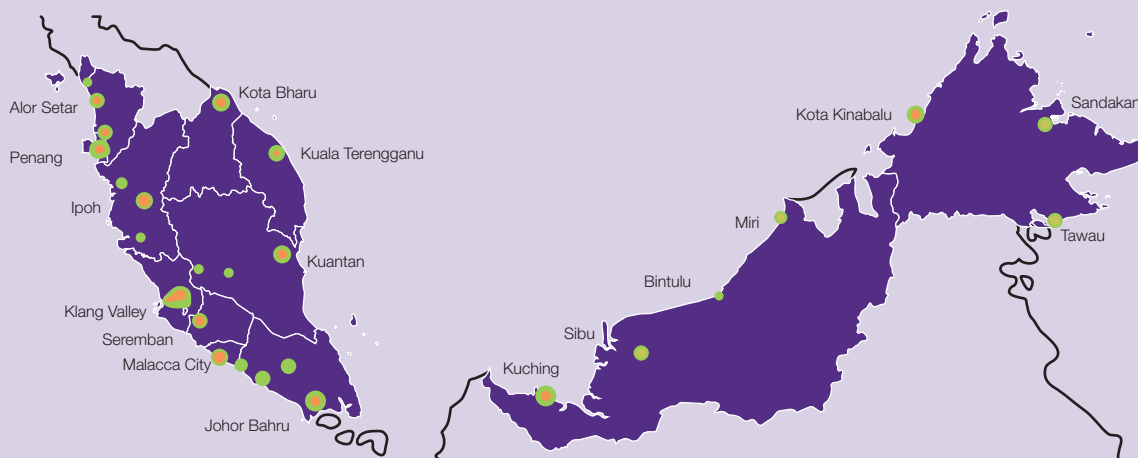
The growth of the bancassurance channel has been centred mostly on single premium credit-related and investment-linked products that are more familiar to sales staff at banks and banking customers. Significant fees paid by insurers and takaful operators to banks under exclusive bancassurance agreements have also driven the preference for higher premium products and more affluent customer segments. As a result, insurance penetration among banking customers is significantly below the industry penetration level, at only 5% as at 2014, with low-income customer segments generally under-represented.

- **Limited reach of agency support outside urban centres**

In terms of geographical reach of the agency force, there is significant disparity between locations as more than 60% of agents serve Klang Valley, Johor and Penang. As agents generally depend on branches of insurers and takaful operators for administrative, compliance and training support, the reach of agents is limited to urban centres where branches are mostly located (Diagram 1). This further concentrates the target customer segments of agents to those who are more likely to already have some form of life insurance or family takaful cover, while excluding the lower income and rural population.

Diagram 1

#### Life Insurance and Family Takaful Sector: Heat Map on Branch Network



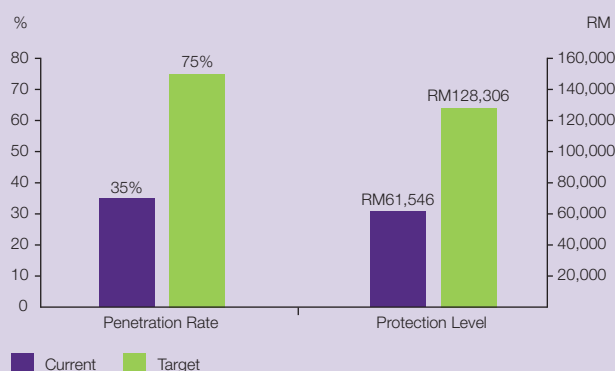
Source: Bank Negara Malaysia

The above factors suggest considerable scope for alternative distribution channels to address underinsurance among a relatively large segment of the population. This gap remains significant, whether viewed in terms of increasing the penetration rate, narrowing the life and medical protection gap or improving the adequacy of cover (Chart 4).



Chart 4

### Life Insurance and Family Takaful Sector: Penetration Rate and Protection Level<sup>4</sup>



<sup>4</sup> Defined as sums insured per capita

Source: Bank Negara Malaysia, Economic Transformation Programme Target (PEMANDU), 2012 Underinsurance Study in Malaysia (Universiti Kebangsaan Malaysia and Life Insurance Association of Malaysia)

## The Future Evolution of Distribution Channels

Increasingly complex and unaffordable product offerings have limited the access of insurance/takaful products to large segments of the population. Efforts to reduce complexity and cost will need to go hand-in-hand towards achieving a larger share of simple life insurance and family takaful products that are distributed through alternative delivery channels and include the following strategies:

- **Simplifying and aligning products to deepen penetration**

Simplifying product designs will make insurance and takaful more affordable and accessible to the underserved segments. This is in line with the product principles and features as outlined in the Microinsurance and Microtakaful Discussion Paper issued in April 2016. The Starter Pack initiative as proposed by the industry is a significant step in the right direction, providing basic term cover at low levels of premium with minimal underwriting. The product which is expected to be launched in the second quarter of 2017 will serve as a basis for insurers and takaful operators to proliferate more targeted products catering to the underserved segments.

- **Leveraging technology with online and mobile channels**

The Life Insurance and Family Takaful Framework introduces key elements to spur this transition including requiring pure protection products to be made available through direct channels and introducing online product aggregators to enable consumers to make informed choices. With the high levels of internet and smartphone penetration in Malaysia, combined with advancements in payment technology, online platforms and mobile insurance hold much promise for expansion of outreach to the underserved segments. The large efficiency gains that these channels bring due to process automation open up new possibilities for making products simple and affordable. In particular, mobile insurance that combines simple product designs and efficient payment mechanisms (e.g. deduction of airtime or credit) has greatly increased insurance inclusion in many markets.

- **Increasing consumer touch points through partnerships**

Insurers and takaful operators should also explore partnerships with businesses and organisations with large and established distribution networks including co-operatives, community-based organisations, retail chains and agent banks. These offer a multitude of consumer touch points and many have payment facilities for convenient premium collection.

In-person sales of life insurance and family takaful products with financial advice will continue to be a fundamental pillar for outreach and financial literacy promotion. Agents, bank staff and financial advisers who have direct access to consumers are better positioned to understand the specific needs of consumers and to enhance understanding of how insurance and takaful products work. However, insurers and takaful operators will need to continually assess how these channels can serve consumers better, including through the following:

- **Up-skilling and equipping intermediaries**

Support tools and analytics will help intermediaries to better match product recommendations with the needs of consumers. This needs to be reinforced by raising the standards of professionalism and overall quality of services, including through the continuous training and up-skilling of agents and bank staff.

- **Improving incentive structures**

Insurers and takaful operators need to re-examine how incentive structures affect the behaviour of intermediaries. The balanced scorecard introduced under the Life Insurance and Family Takaful Framework will complement these efforts by aligning the remuneration of intermediaries with a greater emphasis on the suitability of products for prospective customers and overall quality of service. Over time, it is important that these incentives continue to be reviewed to encourage desired behaviours towards closing the protection gap.

- **Deepening engagement through financial advisers**

As household income and wealth increase, so will demand for comprehensive and independent financial advice. To promote financial advisers as a viable distribution channel, the Bank has reduced the minimum paid-up capital from RM100,000 to RM50,000 and rationalised the qualifying requirements to become a financial adviser's representative. This will also support insurance/takaful agents scaling up to become financial advisers. Since the introduction of these measures in 2015, the number of financial adviser's representatives has increased to 574 (2014: 381). It remains important for insurers and takaful operators to have a dedicated product and distribution strategy, supported by adequate operational resources, to further develop the financial advisory channel.



# Islamic Finance Development

|           |                                                                 |
|-----------|-----------------------------------------------------------------|
| <b>87</b> | Islamic Financial Sector Intermediation                         |
| <b>87</b> | Islamic Banking                                                 |
| <b>93</b> | Takaful                                                         |
| <b>96</b> | Advancing the Positive Socio-economic Impact of Islamic Finance |
| <b>96</b> | Talent Development                                              |



# Islamic Finance Development

## ISLAMIC FINANCIAL SECTOR INTERMEDIATION

Since the implementation of the Financial Sector Masterplan in 2001, which outlined a comprehensive set of strategies to solidify the foundation of the Islamic financial sector, the Islamic finance ecosystem has grown in strength towards meeting the evolving needs of the Malaysian economy (Diagram 4.1). Amid a challenging economic environment, Islamic banking and takaful institutions have remained resilient, maintaining healthy financial buffers.

Total assets of the Islamic banking industry grew by 8.3% in 2016 (2015: 11.5%) to account for 28% of the overall banking system (2015: 26.8%). Intermediation activities expanded with encouraging growth in investment intermediation. The takaful industry also sustained its growth as reflected in higher net takaful contributions of RM7.5 billion in 2016 (2015: RM6.8 billion) to account for 14.6% of total industry premiums and contributions.

Over the next two years, the development of the Islamic finance industry will focus on enabling greater business diversification, driven by technology, to sustain its growth trajectory and deliver better value to customers. Towards this end, the Bank will intensify industry engagements to encourage more innovative applications of Shariah contracts in funding, financing and investment instruments. For the takaful industry, greater focus will be directed towards developing takaful protection and risk management solutions to support trade and business activities through collaborative initiatives involving selected institutions. In meeting the demand for Shariah-compliant financial products and services, Islamic financial institutions are expected to assume a larger role in value-based intermediation, beyond existing credit intermediation roles, to contribute more effectively towards the broader economic and social development. This vision

for the Islamic financial sector is also supported by the transformation of the Islamic finance education landscape to address the talent needs of the industry.

## ISLAMIC BANKING

### Performance of the Islamic banking sector

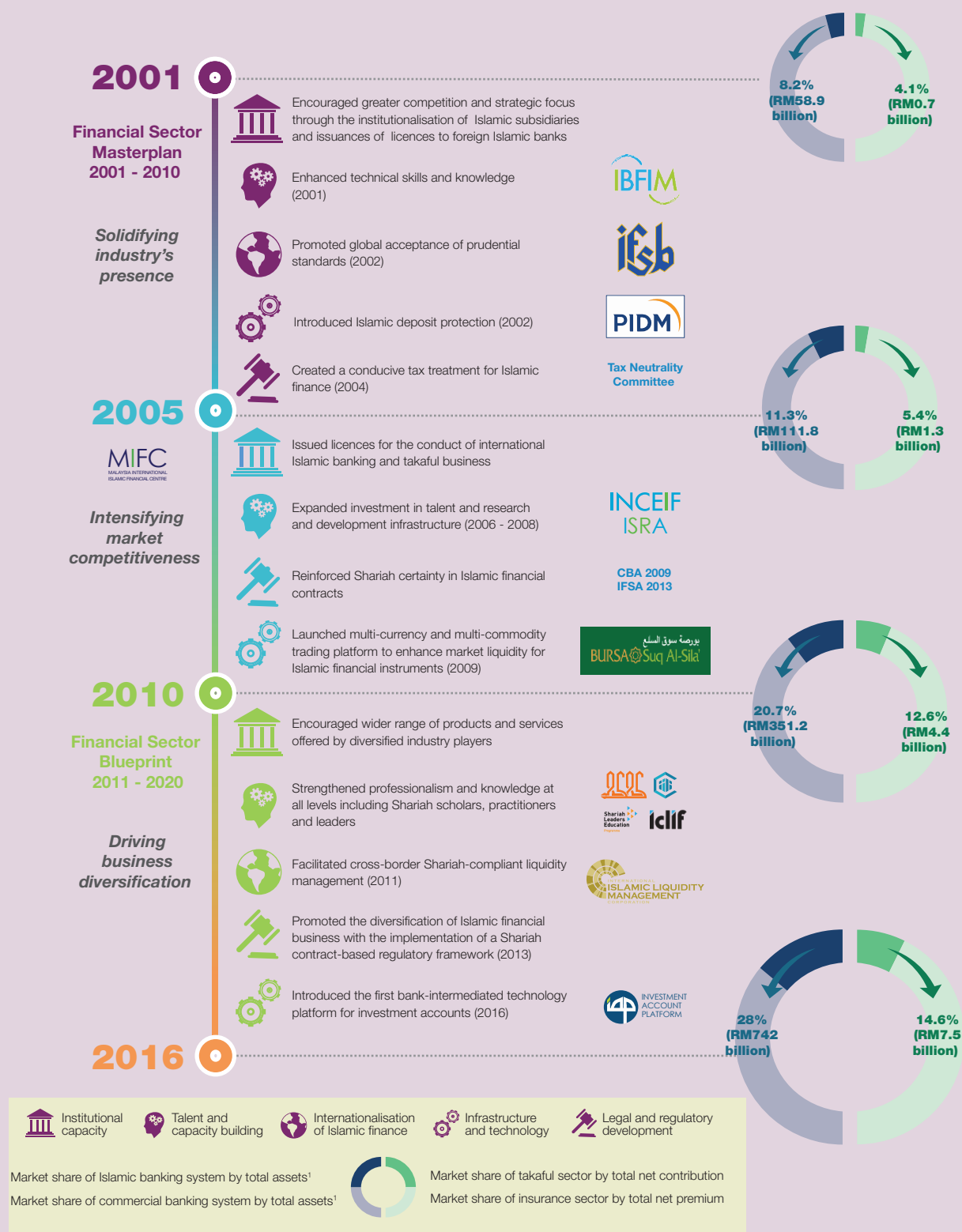
Financing by the Islamic banking industry grew by 11% to RM549.5 billion during the year, underpinned by sustained demand for Shariah-compliant financial solutions from the household sector. Almost 61% of the total financing disbursed by the Islamic banking industry was channelled to households (2015: 61.6%). Demand for Shariah-compliant financing from the retail segment is expected to continue driving the growth of the Islamic banking industry, given the growing consumer preference for the increasingly competitive Islamic financial products and services.

Despite a challenging economic environment for businesses, financing to the business sector grew 13.3%, surpassing the growth rate for financing to the household sector. Financing was broad-based, with 10.4% of total financing channelled to the education, health, manufacturing and agriculture sectors. By 2020, Shariah-compliant financing is expected to account for 40% of total financing in Malaysia.

Investment accounts (IA) expanded further during the year as a new source of funding for Islamic banks. The risk sharing features of IA are expected to support entrepreneurship, facilitated by more efficient arrangements for the intermediation of investments by the Islamic banking industry. IA managed by Islamic banks grew to RM73.7 billion to account for 12.2% of total Islamic deposits and IA within the Islamic banking system (2015: RM47.1 billion, 8.6%) (Chart 4.1). The growing acceptance by retail investors of the attractive value propositions of IA presents the Islamic banking sector with an opportunity to develop innovative products that can cater to this demand.

Diagram 4.1

## Islamic Banking and Takaful: At a Glance



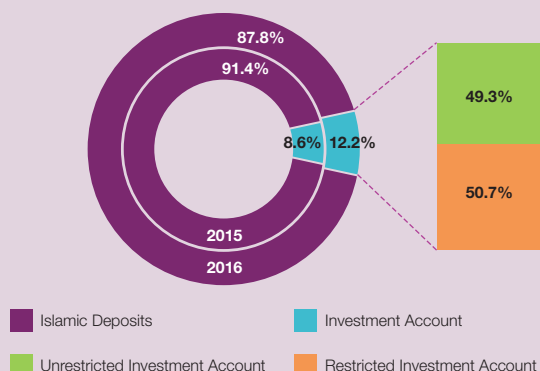
<sup>1</sup> including development financial institutions under the Development Financial Institutions Act 2002

Source: Bank Negara Malaysia



Chart 4.1

### Investment Accounts as a Proportion of Total Islamic Deposits and Investment Accounts (IDIA)



Source: Bank Negara Malaysia

### Investment accounts grew to account for 12.2% of total funding within the Islamic banking system

The Islamic banking industry remained well-capitalised throughout the year. As at end-2016, common equity tier 1 (CET1), tier 1 and total capital (TCR) ratios remained well above the minimum regulatory levels at 13%, 13% and 16.6% respectively (2015: 12.3%, 12.3%, 16.1%).

Diagram 4.2

### Key Elements and Intended Outcomes of Shariah Contracts

| Effective Date    | 1 January 2018                                                                                                                                          | 1 July 2018                                                                                                                                              | 31 July 2018                                                                                                                                                                         | 1 August 2018                                                                                                                                                                            |
|-------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Shariah Contract  | <i>Kafalah</i>                                                                                                                                          | <i>Wakalah</i>                                                                                                                                           | <i>Wadi'ah<br/>Hibah<br/>Qard</i>                                                                                                                                                    | <i>Ijarah</i>                                                                                                                                                                            |
| Application       | Bank guarantee, standby letter of credit and other forms of guarantee                                                                                   | Investment accounts, financing, letter of credit                                                                                                         | Islamic deposits, credit card-i and financing                                                                                                                                        | Financing                                                                                                                                                                                |
| Key Elements      | <ul style="list-style-type: none"> <li>Greater clarity on the distinction between the rights and obligations of guarantors and beneficiaries</li> </ul> | <ul style="list-style-type: none"> <li>Greater clarity on the Islamic banks' capacity as an agent for asset acquisition or investment manager</li> </ul> | <ul style="list-style-type: none"> <li>Prohibition of granting contractual benefits and disclosure of indicative <i>hibah</i> rate for <i>qard</i>-based Islamic deposits</li> </ul> | <ul style="list-style-type: none"> <li>Greater clarity on ownership of the asset during the leasing period and respective rights and liabilities under <i>ijarah</i> contract</li> </ul> |
| Intended Outcomes | <ul style="list-style-type: none"> <li>Strengthened protection for guarantors</li> </ul>                                                                | <ul style="list-style-type: none"> <li>Strengthened governance and fiduciary accountabilities of Islamic banks</li> </ul>                                | <ul style="list-style-type: none"> <li>Strengthened business and market practices of <i>qard</i> borrowers and lenders</li> </ul>                                                    | <ul style="list-style-type: none"> <li>Safeguard interest of lessee and lessor</li> </ul>                                                                                                |

Source: Bank Negara Malaysia

## Regulatory and supervisory framework

### Strengthening institutional resilience and system stability

During the year, regulatory developments in the area of Islamic finance were focused on: (i) finalising the issuance of six additional Shariah standards; (ii) initiating a review of the Shariah Governance Framework; (iii) implementing capital and liquidity standards for Islamic banks; and (iv) providing further guidance and clarity on the regulatory treatment of IA products.

### Shariah Standards and Operational Requirements

The Shariah Standards and Operational Requirements give effect to rulings by the Shariah Advisory Council of Bank Negara Malaysia (SAC) and serve to promote the effective management of risks in Islamic financial business. Since 2014, five Shariah Standards and Operational Requirements including *Murabahah*, *Mudarabah* and *Istisna'* have been implemented to guide the application of these Shariah contracts in Islamic financial products and services. Six additional Shariah Standards and Operational Requirements were issued in 2016 as outlined in Diagram 4.2.

The Bank will be issuing three further Shariah standards in 2017 namely *Wa'd*, *Rahn* and *Ba'i al-Sarf*, which will

complete the compendium of regulatory standards on Shariah contracts for Islamic financial business.

### **Shariah governance**

A review of the Shariah Governance Framework was initiated by the Bank in the first quarter of 2016 to take into account the more mature Islamic banking and takaful industry that has evolved in Malaysia. The review aims to capture Shariah governance considerations that are more integrated with the business and risk strategies of Islamic financial institutions, and further strengthen sound decision-making by the key organs responsible for Shariah governance.

The policy review focused on four key aspects:

- clarifying the accountabilities of the Board and its interactions with the Shariah Committee on matters concerning Shariah governance;
- enhancing the composition and decision-making process (such as methodology and quorum) of the Shariah Committee;
- strengthening the three lines of defenses in managing Shariah non-compliance risks and clarifying accountabilities for the implementation of Shariah rulings; and
- strengthening the supporting role of the internal Shariah functions, including enhancing the quality of Shariah research, to promote end-to-end Shariah-compliant business operations.

During the year, the Bank also issued for consultation proposed enhancements to the Shariah Committee's Report. The proposed enhancements seek to improve the quality of disclosures on the management of Shariah compliance risks by Islamic financial institutions, and include new requirements for the Shariah Committee to issue an opinion on the institution's compliance with Shariah. The Bank expects to issue a Concept Paper setting out these proposed changes to the Shariah Governance Framework in the first half of 2017.

### **Implementation of capital and liquidity standards**

Prudential and market conduct standards applicable to Islamic financial institutions are broadly aligned with global standards and best practices, including standards set by the Basel Committee on Banking Supervision (BCBS) and the Islamic Financial Services Board (IFSB). In developing standards that will apply to Islamic financial institutions, the Bank ensures that

the standards adequately address risks associated with the distinct underlying features of different Shariah contracts. This often entails expanded guidance and prescriptions within domestic standards. As an illustration, Diagram 4.3 describes the Shariah-related requirements in the capital and liquidity standards which are currently under review to reflect recently issued Shariah contracts.

### **Investment Account Framework**

The Investment Account Framework (IAF), introduced in 2014, supports investment intermediation by strengthening the entrepreneurial role of Islamic banks in optimising funds for productive uses in the economy. The IAF guides the operationalisation of IA, taking into account the distinct risk characteristics of IA as compared to Islamic deposits, which is principal guaranteed.

In response to the divergent practices observed in the operationalisation of IA, the Bank provided additional guidance to the industry on its expectations around product structuring, operational management and business conduct in the offering of IA. These expectations aim to more closely align IA product features (such as types of underlying assets and redemption flexibility) with the intended investment objectives. The guidance will also serve to strengthen the management of IA funds to better protect the interests of investors, specifically by requiring Islamic banks to improve processes for conducting assessments of the investment risk appetite of customers before any investment recommendations are made to potential IA holders.

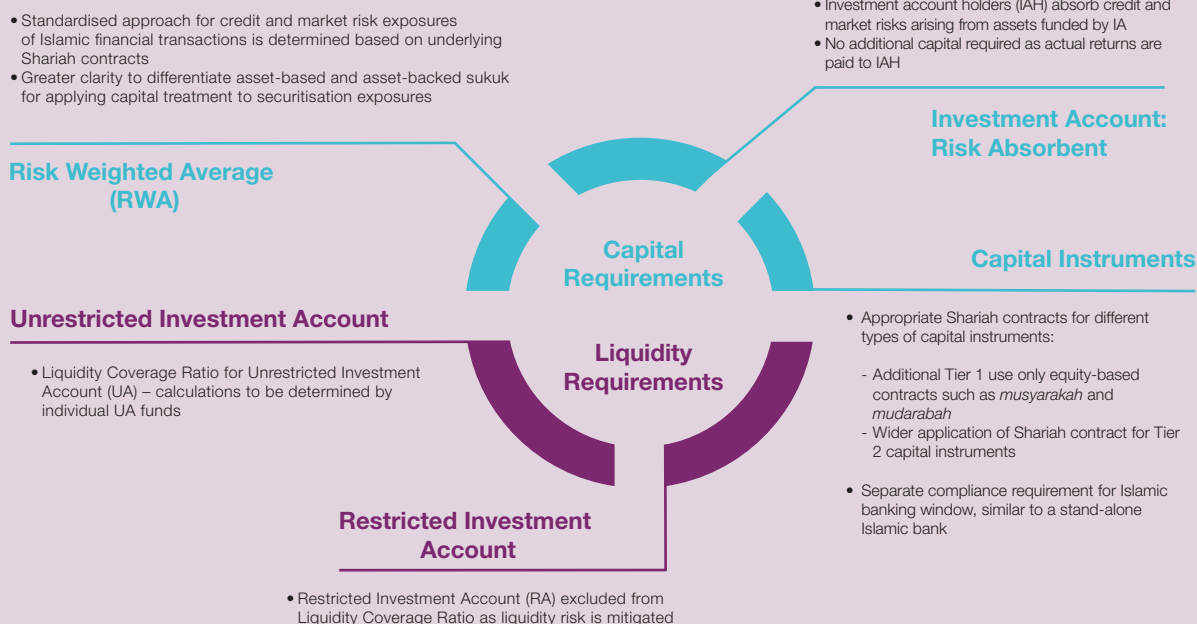
## **Developments in the Islamic banking sector**

### **Broadening the intermediation role of the Islamic banking sector**

A notable development in the application of Shariah contracts for financing by the Islamic banking industry is the increased application of *tawarruq* over the last three years (Chart 4.2). In 2016, *tawarruq* financing grew over 34% to account for 22.4% of total outstanding Shariah-compliant financing. The growth has been largely spurred by the commodity trading operation of Bursa Suq Al-Sila which has reduced costs and risks associated with *tawarruq*-based transactions. Islamic deposits based on *tawarruq* also increased by 7.5% this year, reflecting higher demand for fixed rates of return on deposits offered under *tawarruq* contracts.

Diagram 4.3

### Customisation of Capital and Liquidity Requirements in Islamic Banking



Source: Bank Negara Malaysia

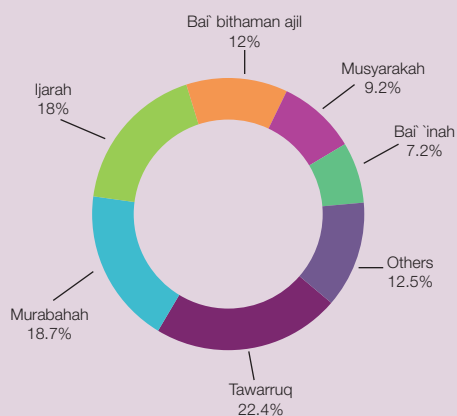
The increased use of *tawarruq* as the underlying contract for Islamic banking business has accelerated efforts to further strengthen capabilities within Islamic banking institutions to effectively manage credit and market risks emanating from trade transactions under the *tawarruq* arrangement. This would lay the foundation for more innovative applications of *tawarruq*

in combination with other Shariah contracts, as provided under the Shariah Standards and Operational Requirements on *Tawarruq* issued by the Bank which came into effect on 1 July 2016.

Greater traction in the innovative use of Shariah contracts, including risk-sharing contracts, to meet

Chart 4.2a

### Composition of Financing by Shariah Contracts

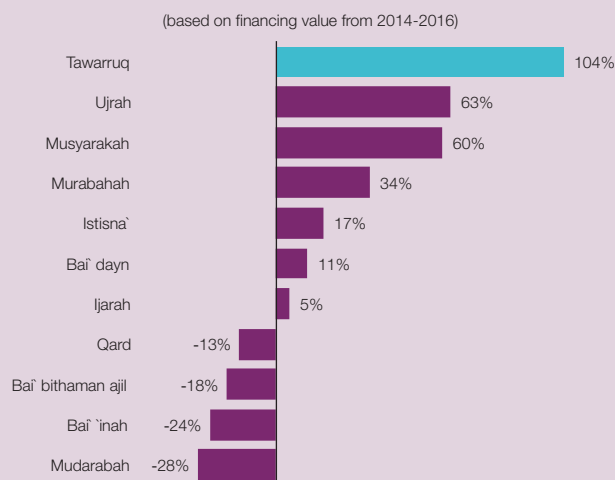


Note: "Others" include unspecified Islamic financing concepts, *bai' dayn*, *bai' salam*, *bai' al-sarf*, *istisna'*, *kafalah*, *mudharabah*, *qard*, *rahn*, *ujrah*, *wakalah*

Source: Bank Negara Malaysia

Chart 4.2b

### Change in Shariah Contract Application



Source: Bank Negara Malaysia

the diverse investment and funding needs of the economy remains important. To this end, the Bank continues to work with the industry and relevant authorities to facilitate the broader application of Shariah contracts. This includes addressing legal issues, clarifying tax as well as accounting treatments, and enhancing the operational and cost efficiency of exchange-based and risk sharing contracts. This needs to be complemented by appropriate operating models implemented within individual Islamic financial institutions, an area that will continue to be a key supervisory focus for the Bank to preserve the integrity of the Islamic financial system.

## Innovative use of a diverse set of Shariah contracts remains important to meet the needs of the economy

### Advancing the adoption of technology

This year saw further advancement in the use of technology by the Islamic banking industry to enhance the efficiency of intermediation activities, in particular through the operationalisation of the Investment Account Platform (IAP) in April 2016. Developed by a consortium of six Islamic banking institutions, the platform, which is currently in the pilot stage of implementation, facilitated fund-raising exercises of RM20 million in total during the year to support a variety of business ventures across different industries including transportation and education. Current funding and financing structures facilitated through the IAP mostly combine *wakalah* or *mudarabah* with debt-based contracts such as *tawarruq*. However, given the significant potential to achieve wider reach and increase efficiencies, more

diverse structures are expected to evolve under the IAP going forward.

In intermediating investments, Islamic banking institutions have an important role in supporting project viability assessments and the monitoring of project risks, thus increasing investor confidence. This in turn will serve to improve prospects for underserved segments of the economy, including small and medium enterprises (SMEs), to tap into broader funding sources while benefitting from stronger market discipline imposed by Islamic banks.

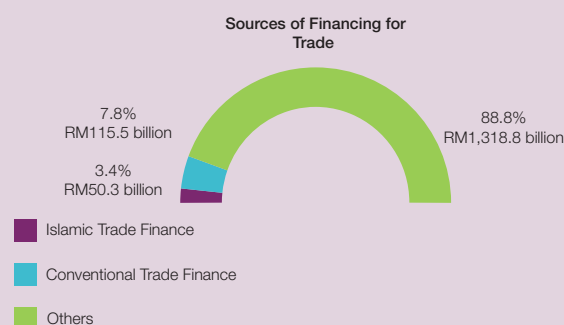
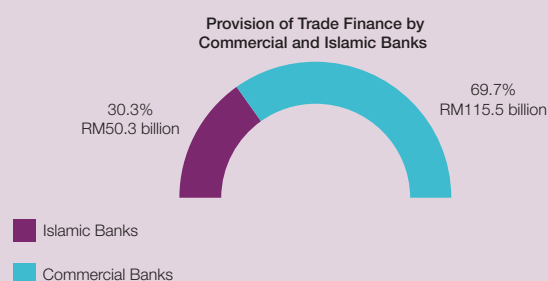
During the year, the Bank continued to collaborate with sponsoring banks and relevant agencies entrusted to develop business ventures such as Malaysian Technology Development Corporation (MTDC), BioEconomy Corporation and Malaysia Digital Economy Corporation (MDEC) to encourage a healthy pipeline of viable ventures for investment funding. At the same time, ongoing efforts by the Bank and industry to increase awareness and familiarity with the distinct features of IA as a new investment product were bolstered by the involvement of cornerstone investors in funding several business ventures floated on the IAP.

### Trade finance facilitation

Another important development priority is trade finance facilitation, where business opportunities have remained largely untapped by the Islamic banking industry. Drawing from the intrinsic principles of Shariah which encourages trade and entrepreneurship, the Islamic banking industry is particularly well-placed to support the sustainable growth of productive economic activities. There is significant growth potential for trade finance facilitation

Chart 4.3

#### Trade Financing by Islamic Banks in Malaysia



Source: Bank Negara Malaysia and Department of Statistics, Malaysia

to support halal exports which can be seen through the increasing participation of SMEs in the halal economy, initiated by the government, to meet the strong demand for halal products and services globally. The Islamic finance industry currently represents only 3.4% of total trade, and less than one third of overall trade finance from the banking system (Chart 4.3). The Bank aspires for Shariah-compliant trade financing to support 10% of total trade in the next three years.

## Trade finance facilitation is ripe for technological disruption

Process inefficiencies that contribute to higher operational risks continue to be a challenge for the banking industry as a whole. Banks, including Islamic banks, have increasingly applied technological solutions to streamline trade finance operations and reduce reliance on manual document-intensive business processes. Six Islamic banks have established a web-based platform supporting more efficient provision of trade finance and working capital management solutions. To encourage an expanded role of Islamic banks in facilitating trade finance, the Bank plans to consult the industry on a broad range of initiatives in the first half of 2017, including the integration and digitalisation of trade finance offerings as well as enhancing the availability of trade credit takaful as a risk mitigant. These initiatives aim to further improve the efficiencies in trade finance facilitation and connectivity with the trade community in Malaysia.

## TAKAFUL

### Performance of the takaful sector

Gross contribution of new family takaful business increased by 12.5% during the year to account for 76.2% of total takaful business in Malaysia (2015: 74.9%). Term products, comprising mainly financing-related products, remained the largest contributor to new family takaful business with a share of 57.8% of total gross family takaful contributions. This was largely driven by the active role of takaful operators in supporting government-introduced home financing schemes in addition to extensive bancatakaful partnerships. While demand for takaful solutions that complement Shariah-compliant financing remains a key driver of growth, other growth drivers have become more important

with the share of term business declining by 10.5% (2012: 68.3%) over the past five years. Some of this has also reflected the slower growth in household financing in recent years. In contrast, growth of investment-linked business accelerated, with contributions increasing by 13.1% in 2016.

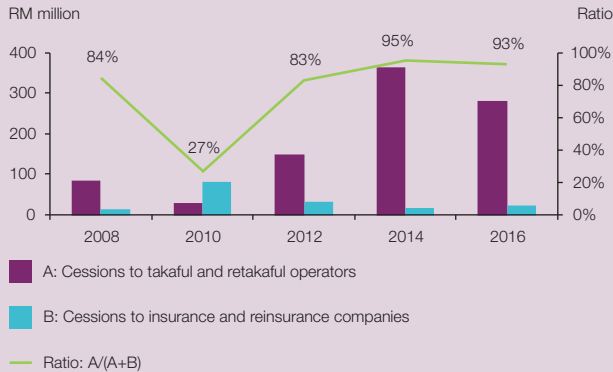
The number of new takaful products introduced into the market increased to 55 compared to 18 in 2015, pointing to an industry that is more responsive to changing demand conditions. Notably, demand for products that provide for bereavement (*khairat*), *haj* and education benefits have encouraged more takaful operators to grow these business segments in the more recent period.

In the general takaful sector, the motor, fire and personal accident business segments continue to account for 91.4% of total gross general takaful contributions. While the sector recorded an overall growth of 4.6% in 2016, certain product lines have contracted over the past few years reflecting measures by several takaful operators to consolidate the areas of business focus and strengthen underwriting practices for larger and more complex risks including liability and marine, aviation and transit risks. Over the medium-term, there is significant opportunity for further growth of takaful products supporting business activity, in particular catering to SMEs. Based on a survey conducted by the Bank in 2015, 59% of SME respondents indicated that they have either opted to use takaful solutions, or would seriously consider purchasing a takaful solution that meets their business needs at a competitive price. This represents significant market potential for the takaful industry to expand the scope of protection beyond traditional risks covered under the current motor and fire classes.

Retakaful business expanded further with total family and general takaful cessions underwritten by professional retakaful operators increasing, albeit at a lower rate, by 6% during the year (2015: 27.6%). Under the Takaful Operational Framework (TOF) implemented in 2012, takaful operators are required to utilise Shariah-compliant retakaful arrangements and can only cede business to conventional insurers or reinsurers in exceptional circumstances, including where existing retakaful capacity is scarce for specific risks (Chart 4.4). Retakaful operators have also steadily expanded the share of foreign business underwritten out of Malaysia to account for 28.5% and 32.6% of the total business underwritten in the family and general retakaful business respectively. This will improve the

Chart 4.4a

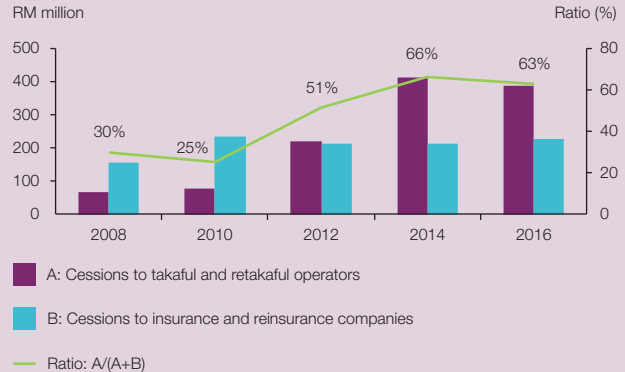
## Ceding Trend of Family Takaful Business



Source: Bank Negara Malaysia

Chart 4.4b

## Ceding Trend of General Takaful Business



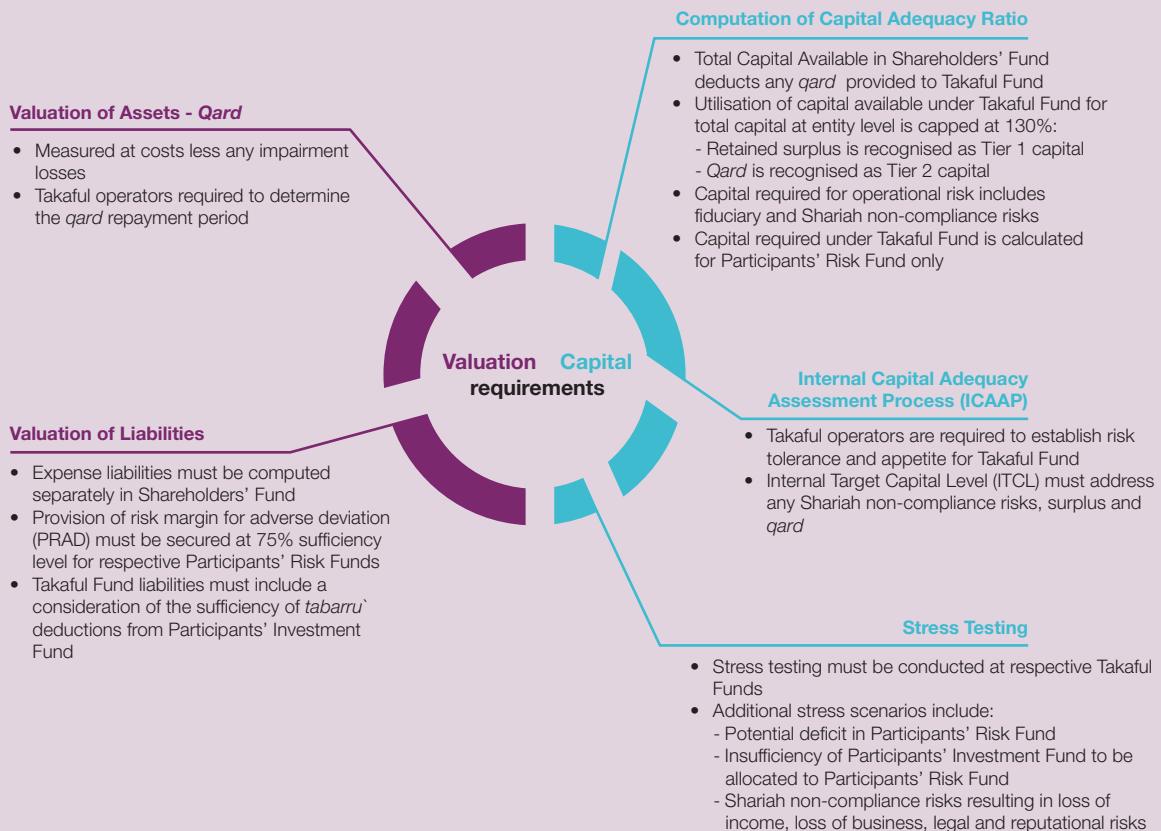
Source: Bank Negara Malaysia

diversification of risks, while enhancing efficiencies of scale to support future investments that will further strengthen the technical and financial underpinnings of the industry.

The capitalisation of the takaful industry remained sound with the aggregate capital adequacy ratio of 205.3% in 2016 (2015: 191.5%). This is comfortably above the minimum regulatory requirement of 130%.

Diagram 4.4

## Customisation of Valuation and Capital Requirements in Takaful



Source: Bank Negara Malaysia



## Regulatory and supervisory framework

### Implementation of prudential standards for takaful

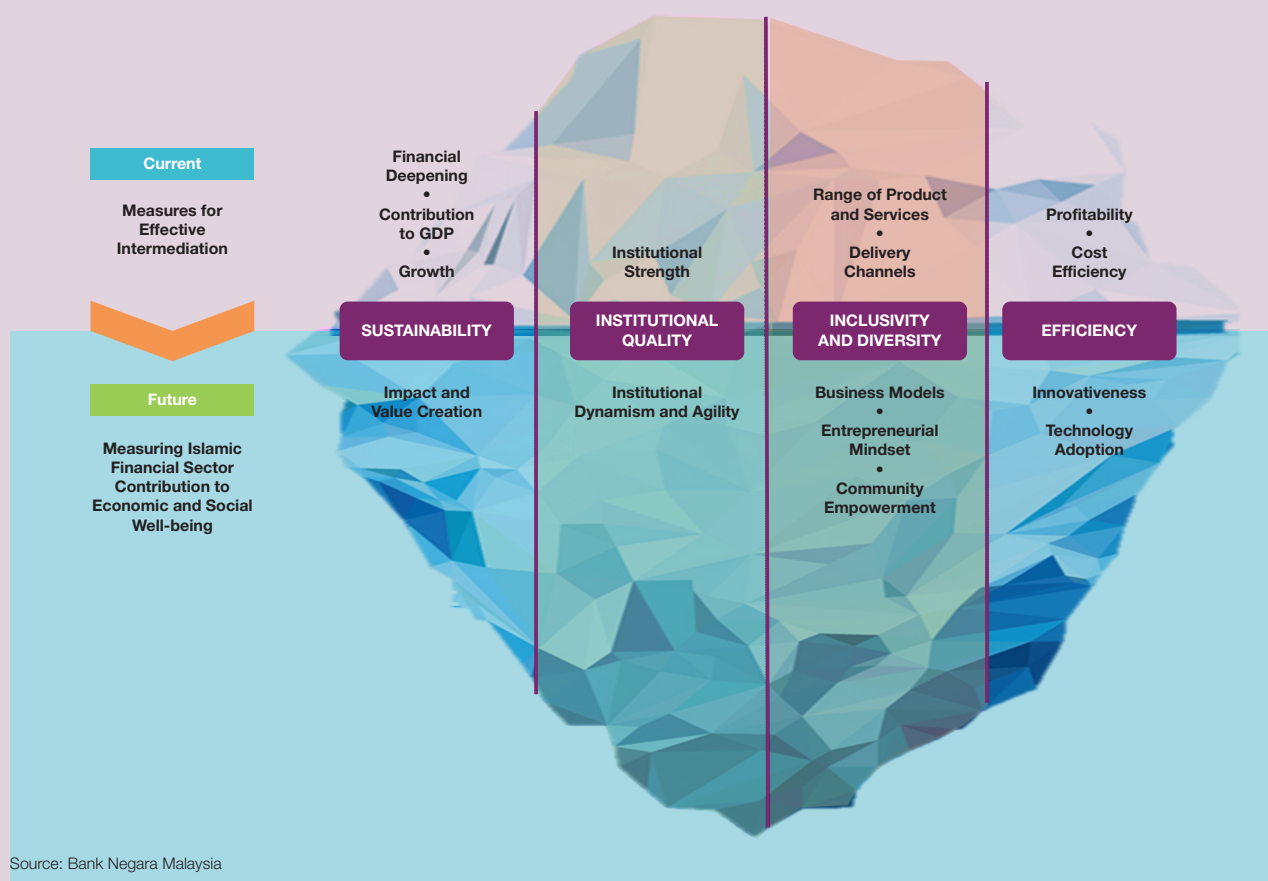
Similar to the approach for Islamic banks, prudential and market conduct standards applicable to takaful operators reflect distinct features of takaful operational models, while maintaining broad alignment with global standards issued by the IFSB and the International Association of Insurance Supervisors (IAIS). Since 2011, the Bank has issued specific takaful standards on valuation and capitalisation to capture the responsibility of takaful operators towards takaful funds, which are owned by the takaful participants (Diagram 4.4). In April 2016, the Bank issued requirements for takaful operators to put in place an Internal Capital Adequacy Assessment Process (ICAAP). These requirements supplement the minimum capital standards to ensure that takaful funds are adequately capitalised against their specific risk profiles, based on a robust capital management programme implemented by takaful operators.

As part of ongoing initiatives to promote the effective implementation of a Shariah contract-based regulatory framework, the Bank also initiated a review of the TOF to provide greater clarity around the application of Shariah standards (including the recently issued *Wakalah*, *Qard* and *Hibah* standards) by takaful operators in their product offerings and operational framework. This, in turn, is expected to encourage greater differentiation of takaful products to meet different risk and demand profiles of takaful participants. Areas under review include regulatory requirements relating to the segregation of takaful funds, remuneration of takaful operators and their fiduciary responsibilities in the management of takaful funds. The Concept Paper on proposed revisions to the TOF is expected to be issued in the second quarter of 2017.

Greater differentiation of takaful products is needed to meet different risk and demand profiles of takaful participants

Diagram 4.5

### Future Measures of Effective Intermediation to Realise the Intended Socio-economic Impact of Islamic Finance





## ADVANCING THE POSITIVE SOCIO-ECONOMIC IMPACT OF ISLAMIC FINANCE

Islamic finance, underpinned by Shariah principles, has the potential to create significant value for economic and social development. The Bank, in collaboration with the industry, continues to pursue strategies aimed at unlocking this value. Measures have broadly focused on four dimensions: promoting sustainability, institutional quality, inclusivity and diversity, and efficiency in Islamic financial intermediation. Going forward, greater focus will be given to assessing the economic and societal impact of Islamic finance along each of these dimensions in order to inform developmental and regulatory priorities (Diagram 4.5).

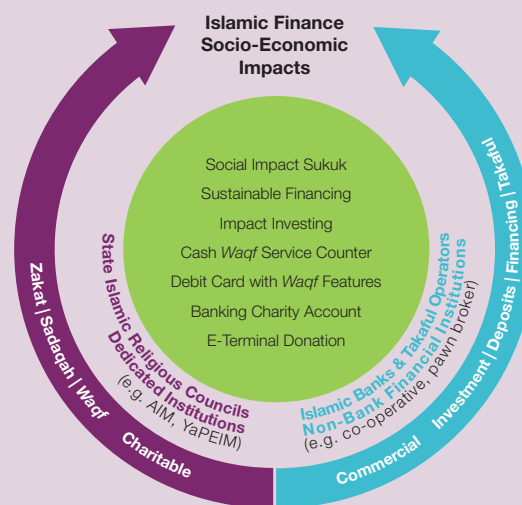
### Measures to assess the economic and societal impact of Islamic finance are being developed by the Bank, in collaboration with the industry

In 2016, the Bank drove and supported a number of initiatives to encourage a stronger focus on value-based intermediation as a core premise for Islamic financial solutions and to facilitate greater innovation in Islamic product offerings.

- In line with expectations for Islamic financial institutions to evaluate and manage the impact of their activities on the economy and society, the Bank is working with the industry and key stakeholders to develop a Corporate Value Intent (CVI) framework as a tool to assist Islamic banks to embrace and adopt value-based practices, premised on the objectives of Shariah. The framework aims to promote high quality disclosures by Islamic financial institutions on the intent, strategy and performance of their business, focusing specifically on how Islamic banks generate value for both shareholders and the wider community. Engagements with the industry are well advanced toward the issuance of a CVI Strategy Paper in the first half of 2017.
- At the state level, a number of initiatives have been spearheaded by Islamic financial institutions in collaboration with the respective State Islamic Religious Councils (SIRC), including the introduction of cash *waqf* to finance *waqf* activities while allowing *waqf* assets to be beneficially utilised. A cash *waqf* master agreement is currently being

Diagram 4.6

### The Social Finance Dimension of Islamic Finance in Malaysia



Source: Bank Negara Malaysia

developed with five Islamic financial institutions and SIRC to serve as a template for operationalising cash *waqf* arrangements. This year also saw the introduction of a new Islamic debit card with a *waqf* feature and a crowdfunding platform which facilitates donations to charitable organisations with increased transparency, traceability and efficiency. *Waqf* is also being reviewed as a new growth area for developing sustainable funding for social welfare purposes (Diagram 4.6).

- The Islamic Finance Innovation Festival (IF InnoFest) was organised by the International Centre for Education in Islamic Finance (INCEIF) with the support of the Bank and industry associations in November 2016 to encourage greater collaboration between the industry and academia in bridging innovative ideas and practical industry solutions. The event provided a platform for businesses to pitch innovative ideas to Islamic financial institutions, with a view to identify solutions that could be further developed and implemented to create distinctive advantages in product offerings. Ideas pitched covered solutions that spanned the Islamic capital market, microfinance and financial technology.

## TALENT DEVELOPMENT

The development of high quality talent for Islamic finance remained a priority of the Bank. In November 2016, the Steering Committee for Transformation of the Education Landscape for Islamic Finance (Steering Committee) was formed to frame a clear industry-led strategic direction for talent service providers

in Malaysia. The current focus is on the Bank's affiliates, namely INCEIF, the International Shariah Research Academy (ISRA), the Islamic Banking and Finance Institute Malaysia (IBFIM), the Chartered Institute of Islamic Finance Professionals (CIIF) and the Association of Shariah Advisors (ASAS). These affiliates, each with their own mandate and focus, have important roles in driving talent development initiatives within the broader financial services education landscape.

The Steering Committee is charged to undertake an in-depth review of these institutions, with the view to identify gaps in the Islamic finance education landscape and develop strategic recommendations to strengthen the five institutions. Its scope includes strategies to ensure high quality offerings by the institutions, improvements to institutional arrangements for greater effectiveness, future positioning to strengthen institutional focus and harness synergies, and measures to achieve long-term financial sustainability. The Steering Committee is expected to outline a roadmap in the second quarter of 2017 charting the path forward to transform the Islamic finance education landscape.

During the year, the Bank also developed two dedicated training programmes for Shariah personnel and the top management in Islamic banks. The Shariah Leaders Education Programme, launched in March 2015 in collaboration with The Iclif Leadership and Governance Centre (ICLIF), is the first flagship programme designed for Shariah scholars to further complement their existing Shariah domain expertise. This programme will be offered internationally in 2017.

For the boards of Islamic financial institutions, work is almost complete to introduce a programme to provide board members with a solid foundation in Shariah knowledge and its business applications. The programme is expected to be rolled out in the first half of 2017.

In addition to the requisite talent within the Islamic banking and takaful industry, leaders in the professional ancillary services sector also have critical roles in advancing Islamic finance development. In the field of accounting for example, the Malaysian Institute of Accountants (MIA) has initiated a programme to develop accounting professionals with specialised expertise in Islamic finance. The Bank continues to lend its support, where relevant, to such efforts as part of the Bank's mandate to promote a sound and progressive dual financial system in Malaysia.

The Bank also published the first Educator's Manual on Shariah Standards and Operational Requirements in August 2016 to support the teaching of Islamic finance disciplines in higher learning institutions. The Educator's Manual is developed based on the Bank's Shariah Standards and Operational Requirements and serves as a ready source of practical learning reference for tertiary students on technical issues, market practices and industry developments. It is also intended to serve as a useful aid for academics to infuse Shariah contracts and their application in the existing academic syllabus. The first Educator's Manual covered the *Murabahah* Shariah Standard, with further plans to progressively develop similar manuals on other Shariah standards over the next three years.



# Cross-Sector Developments

|            |                                                                                                                     |
|------------|---------------------------------------------------------------------------------------------------------------------|
| <b>101</b> | Financial Markets                                                                                                   |
| <b>103</b> | Prudential Policy                                                                                                   |
| <b>104</b> | Financial System Integrity                                                                                          |
| <b>105</b> | Enforcement Actions                                                                                                 |
| <b>105</b> | Money Services Business                                                                                             |
| <b>105</b> | Consumer Protection Frameworks and Empowerment                                                                      |
| <b>108</b> | FinTech Innovation                                                                                                  |
| <b>111</b> | <i>Box Article: Mid-term Review of the Financial Sector Blueprint (2011 – 2020)</i>                                 |
| <b>118</b> | <i>Box Article: A New Model for Money Services Business –<br/>Towards Greater Modernisation and Professionalism</i> |



# Cross-Sector Developments

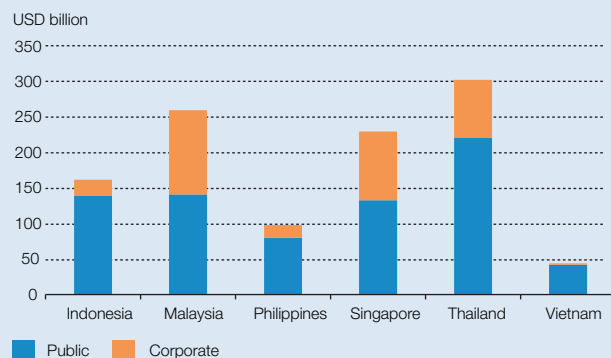
## FINANCIAL MARKETS

Malaysia's debt securities market continued to be a key source of financing for the public and corporate sector, and remains one of the largest in Southeast Asia (Chart 5.1) at 95.6% of gross domestic product. Outstanding long-term government bonds and corporate bonds grew by 6.1% to RM1.2 trillion in 2016, with issuances of corporate bonds led by the *finance, insurance and real estate; infrastructure; and electricity, gas and water supply* sectors. The share of corporate financing from the bond market rose marginally to 37.4% of total corporate financing as at end-2016 (2015: 36.8%). Sukuk continued to account for a higher proportion of total outstanding debt securities at 56.4% (Chart 5.2).

In the foreign exchange (FX) market, shifts in investor sentiment surrounding major global events in the second half of the year exerted downward pressure on most major and regional currencies, including the ringgit. This largely reflected uncertainties over policy adjustments in major economies following the United Kingdom's vote to

Chart 5.1

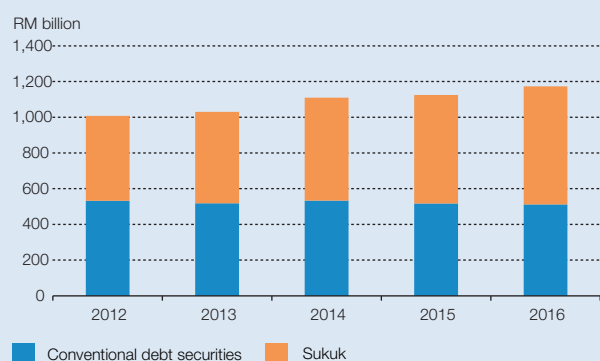
### ASEAN Outstanding Local Currency Debt Securities Market



Source: Asian Bonds Online

Chart 5.2

### Outstanding Debt Securities and Sukuk (Public and Corporate)



Source: Bank Negara Malaysia

exit the European Union and the outcome of the United States (US) presidential election, as further discussed in the Chapter on 'Risk Developments and Assessment of Financial Stability in 2016' under 'Managing Risks from Financial Market Volatility'.

Volatility in the ringgit was further exacerbated by uncertainty in the outlook for global crude oil prices and speculative activity in the non-deliverable forward (NDF) market, which resulted in a material divergence between the offshore ringgit rate and onshore-traded ringgit prices. The domestic FX market recorded a lower average daily turnover of USD8.1 billion, 20.6% lower than the previous year. Ringgit currency pairs traded at a daily average volume of USD4.4 billion, of which spot and forward transactions averaged USD1.9 billion daily. Liquidity in the domestic FX market also reflected rising supply and demand imbalances in FX flows (also discussed in the Chapter on 'Risk Developments and Assessment of Financial Stability in 2016'), which further contributed to ringgit volatility. For the year as a whole, the ringgit depreciated by 4.3%, ending at RM4.4860 against the US dollar.

In May 2016, the Bank established the Financial Markets Committee (FMC) comprising senior-level officers from the Bank, Securities Commission Malaysia, financial institutions and other key participants in the financial markets to provide a more inclusive forum to advance strategies in developing Malaysia's financial markets. The FMC announced several measures in December 2016 aimed to promote a deeper, more transparent and well-functioning onshore FX market, which includes providing flexibility to market participants in the ringgit hedging market. Financial institutions were also reminded to observe robust due diligence and Know-Your-Customer (KYC) processes to ensure that they do not facilitate speculative activities in the ringgit NDF market. The implementation of these measures supported greater liquidity in the domestic FX market, as evidenced by an increase in the onshore ringgit FX transaction volume to a daily average of USD5.9 billion, while transactions in the ringgit NDF market contracted to a daily average of USD1.3 billion as at end-2016.

During the year, the FMC also adopted a new methodology for the setting of USD/RM reference rates. The methodology which came into effect on 18 July 2016, is in line with global best practices and aims to improve market transparency by using daily market transaction data instead of quotes submitted by onshore banks in setting the reference rate. This further strengthens the credibility of the rate setting

mechanism and reduces opportunities for the exertion of undue influence on the reference rate setting process.

In October 2016, the Bank, in collaboration with the banking industry, launched the retail Negotiable Instrument of Deposit (NID) and Islamic Negotiable Instrument (INI) programme to broaden retail participation in the financial markets, thus further enhancing the depth and liquidity of the market. As retail NIDs and INIs have a lower investment threshold and can be traded over-the-counter in the secondary market, the programme will expand access for retail investors to money market instruments that are of relatively low risk. The development of the retail NID market is also expected to increase demand for ancillary services, such as alternative trading platforms and custodial services catering to retail investments provided by financial institutions and non-banking entities, such as financial technology (FinTech) companies.

**The retail NID and INI programme was launched by the Bank to promote the development of a dynamic financial market through greater retail participation**

Promoting high standards of conduct and transparency in the domestic wholesale financial

### Measures to Broaden and Develop the Onshore Financial Markets

- Liberalisation and deregulation of the onshore ringgit hedging market:
  - a. Residents (including fund managers) allowed to hedge US dollar and China Offshore Spot (CNH) exposures up to a limit of RM6 million per client per bank, supported with a one-off declaration for FX hedging intent. Hedging of FX exposure beyond this limit continues to be free provided that the transaction is supported with an underlying commitment;
  - b. Resident and non-resident fund managers allowed to actively manage their FX exposures up to 25% of their invested assets upon registration with the Bank, thus providing more flexibility for dynamic hedging; and
  - c. Non-resident financial institutions that are not part of the banking groups of licensed onshore banks also allowed to participate in the Appointed Overseas Office (AOO) framework. Under the AOO framework, additional flexibilities on ringgit transactions are provided to improve access by foreign investors and corporates to the onshore FX market. These flexibilities include FX hedging for the institution's own account or on behalf of clients for current and financial account commitments, and the offering of ringgit trade financing facilities.
- Streamlined treatment for investment in foreign currency assets of resident entities with domestic ringgit borrowing to invest in foreign currency assets in both the onshore and offshore market, up to a prudential limit of RM50 million per calendar year for each corporate group.
- Rebalancing the demand for ringgit by allowing exporters to retain up to 25% of export proceeds in foreign currency, with the balance converted into ringgit. Foreign currency amounts above the threshold may be retained through same rate reconversion to support foreign currency obligations up to the value of six months.



markets remains an important priority of the Bank to ensure fair, orderly and efficient markets. During the year, the Bank published an exposure draft on the Code of Conduct for the Malaysian Wholesale Financial Markets for consultation. The code formalises as binding obligations the Bank's expectations for market participants in the wholesale financial markets to adhere to professional and ethical standards of conduct, making any breaches of these standards sanctionable under the law. The draft standards address conduct requirements on dealing activities, including prohibited conduct and the responsibility of market participants to promote a reputable and fair market place. It also sets out the role of the ACI-Financial Markets Association of Malaysia in preserving orderly markets, which includes self-policing, conducting investigations on the misconduct of its members and referring misconduct cases involving violations of the code to the Bank for further investigation.

Efforts were pursued to further promote the use of local currencies for trade settlement between Malaysia and its neighbouring countries. Following the operationalisation of the Renminbi Liquidity Facility in 2013 and appointment of a renminbi clearing bank in Malaysia by the People's Bank of China in 2015, trade settlement in ringgit and renminbi has continued to gain traction at a compounded annual growth rate of 42.2%. The use of local currencies for trade settlement not only reduces trade transaction costs for businesses, but also promotes greater flexibility in managing FX risks for banking institutions and contributes to the development of regional financial markets. Local currency settlement arrangements were further expanded for ringgit and Thai baht settlements in March 2016 under a framework operationalised with the Bank of Thailand. This was followed by a Memorandum of Understanding entered into between the Bank and Bank Indonesia in December 2016 to establish a framework for bilateral trade settlements in ringgit and Indonesian rupiah. The arrangement with the Bank of Korea was also renewed in January 2017.

## PRUDENTIAL POLICY

The Bank issued the final standard for Corporate Governance in August 2016, after careful review of feedback received on the draft standard

and broader engagements with the industry on specific issues raised – mostly in relation to transitioning arrangements. The final standard provides for an extended transition period of up to 2021 for financial institutions to comply with strengthened requirements on board composition and remuneration. Banks and insurance/takaful companies have begun to actively engage the Bank on plans to comply with the requirements, and are making progress towards strengthening internal frameworks around compensation systems and organisational culture to reinforce professional and ethical conduct. Work has commenced to similarly review existing corporate governance standards for development financial institutions (DFIs), with draft changes expected to be published within the first half of 2017 for industry feedback. While aiming to similarly elevate the standards and practice of governance in DFIs, the draft standards for DFIs will continue to take into account the specific developmental mandates and unique ownership structures of DFIs.

Additionally, the Bank issued the revised standards on Operational Risk Management in May 2016. The revised standards require financial institutions to establish a robust operational risk management framework that is commensurate with the size and complexity of the institution's operations. A transition period of up to two years has been provided for financial institutions to meet the new requirements. Although progress remains uneven, the Bank has observed considerable improvements in financial institutions' operational risk management practices. Institutions are generally more proactive and holistic in managing operational risk, with an increasing use of forward-looking tools to forecast operational risk events and losses. Financial institutions are also employing clearer lines of accountability for operational risk management and more structured methods for operational risk data collection. In the first quarter of 2017, the Bank will begin publishing the Operational Risk Landscape Report based on submissions by financial institutions to the Bank's Operational Risk Integrated Online Network (ORION) system. The report, which will be published bi-annually, provides a system-level overview of operational risk losses to help financial institutions compare their own experience against industry norms, and support efforts by financial institutions to continuously strengthen internal controls and assess their exposures to operational risk.

## FINANCIAL SYSTEM INTEGRITY

The Bank and 15 other member agencies of the National Coordination Committee to Counter Money Laundering continued to implement action plans under the National Anti-Money Laundering and Countering Financing of Terrorism Strategic Plan (2015-2020) in 2016. A follow-up assessment by the Financial Action Task Force (FATF) in 2016 noted that Malaysia has made considerable progress in improving compliance with anti-money laundering/counter financing of terrorism (AML/CFT) international standards since the publication of the Mutual Evaluation Report on Malaysia's AML/CFT regime in 2015.

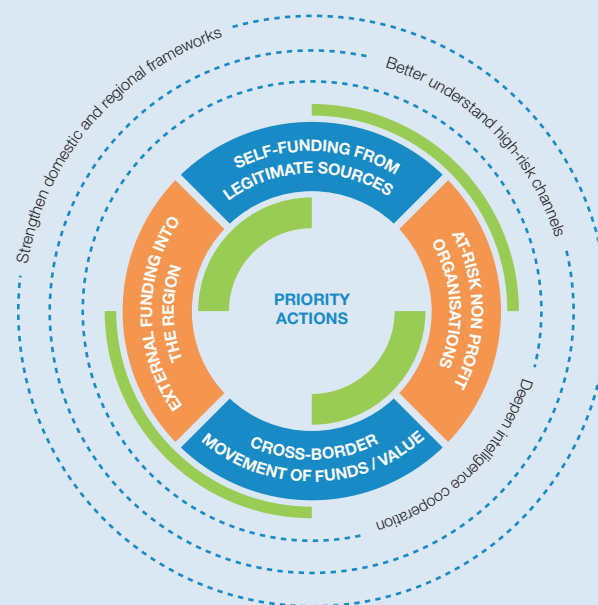
The Bank continues to build on and strengthen its collaboration with other agencies and organisations as part of efforts to maintain strong defences against money laundering/terrorism financing (ML/TF) risks, particularly among designated non-financial businesses and professions. This included working with several self-regulatory organisations such as the Kuala Lumpur Bar Committee and Malaysian Institute of Accountants throughout the year to jointly conduct outreach programmes and guide efforts by individual firms to improve the management of ML/TF risks.

**FATF recognises that Malaysia has made considerable progress in strengthening compliance with AML/CFT international standards since the publication of the Mutual Evaluation Report on Malaysia in 2015**

The Bank also co-operates closely with the Royal Malaysian Police (RMP) and foreign Financial Intelligence Units (FIUs) in its efforts to combat terrorism financing (TF). Vigilance over the use of the financial system to finance terrorism activities has heightened globally since the emergence of militant terrorist groups in the Gulf countries in 2014. During the year, the Bank shared 68 potential TF activities with the RMP and also made 11 requests for information from foreign FIUs under the Egmont Group of FIUs. At the international level, the Bank participated in the first regional risk assessment of TF in Southeast Asia, which was conducted by FIUs from Australia and Indonesia. The assessment focused on high-risk TF methods and channels,

Diagram 5.1

### Priority Actions Identified from the Regional Risk Assessment of Terrorism Financing in Southeast Asia



Source: Regional Risk Assessment on Terrorism Financing 2016 by Pusat Pelaporan dan Analisis Transaksi Keuangan (PPATK) and the Australian Transaction Reports and Analysis Centre (AUSTRAC), used under CC BY 4.0 license ([www.creativecommons.org/license](http://www.creativecommons.org/license))

including those that present joint-country or intra-regional risks (Diagram 5.1). Based on the assessment, recommendations were proposed for:

- (i) the development of a secured system for regional governments to share details of persons of interest related to TF activities;
- (ii) further study of patterns and trends in cross-border movements of funds/value; and
- (iii) enhanced assessments of high-risk non-profit organisations (NPOs).

Following the recommendations, the Bank is collaborating with foreign FIUs in the region to adopt a more rigorous risk assessment on NPOs which are susceptible to TF risks and to identify critical regional border points exposed to the illegal movement of funds to finance terrorist activities.

During the year, the Bank published three technical notes on reporting obligations by reporting institutions (RIs) with respect to countering TF risks, key highlights of which are summarised in Table 5.1. The technical notes provide more detailed guidance in specific areas to support the effective implementation of AML/CFT measures by RIs.

Table 5.1

**Technical Notes for Reporting Obligations on the Counter Financing of Terrorism**

| Technical Notes                                                   | Purpose                                                                                                                                                                                       |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Targeted Financial Sanctions on Terrorism and Terrorism Financing | Guides RIs in implementing targeted financial sanctions in relation to TF through a detailed mechanism, which includes a thorough screening of customers and in-depth reporting requirements. |
| Foreign Terrorist Fighters                                        | Assists financial institutions in identifying financial transactions which are highly likely to be linked to financing for foreign terrorist fighters.                                        |
| Terrorism Risk Indicators                                         | Provides risk indicators developed by the FATF to guide financial institutions in identifying and mitigating TF risks.                                                                        |

Source: Bank Negara Malaysia

**ENFORCEMENT ACTIONS**

To instil market discipline and deter future misconduct in the financial system, the Bank applies a range of enforcement tools, including administrative, civil and criminal enforcement actions, in dealing with statutory offences and non-compliances with standards issued by the Bank. In 2016, 13 entities and individuals were prosecuted for operating illegal activities and schemes, with nine convictions obtained. These were mainly for offences related to illegal money services and illegal deposit taking. The Bank also initiated 38 new investigations into suspected illegal activities and regulatory breaches by entities and individuals. Table 5.2 provides a summary of enforcement actions taken by the Bank in 2016.

The Bank also collaborated with other enforcement agencies to investigate and prosecute syndicated crimes. In 2016, the Bank, together with the National Revenue Recovery Enforcement Team of the Attorney General's Chambers, the RMP and the Royal Malaysian Customs jointly raided a syndicate of illegal money services business (MSB) operators, following 16 months of intelligence and ground surveillance on the syndicate, which was found to have illegally transferred funds from Malaysia into neighbouring countries. Investigations on the syndicate members are currently ongoing.

**MONEY SERVICES BUSINESS**

The retail and wholesale money-changing segments of the MSB industry continued to grow by 21.1% and 38.5% respectively in 2016 (2015: RM60.7 billion and RM7.7 billion respectively). This was

attributable to the strong demand for common currencies such as the US dollar, Singapore dollar, euro and regional currencies from both inbound and outbound travellers. Meanwhile, overall outward remittances declined slightly by 1.9% to RM34.3 billion (2015: RM34.9 billion), due to lower repatriation of salaries and remuneration through banking remittance channels. Non-bank remittance service providers, however, continued to register a modest growth of 4.6% in outward remittances by migrant workers, mainly to Indonesia, Bangladesh and India. Developments in the MSB industry are further elaborated in the box article 'A New Model for Money Services Business—Towards Greater Modernisation and Professionalism'.

**CONSUMER PROTECTION FRAMEWORKS AND EMPOWERMENT**

The Ombudsman for Financial Services (OFS) commenced operations on 1 October 2016, marking an important step forward in ensuring an effective framework for the protection of financial consumers in Malaysia. The OFS provides an independent alternative avenue for consumers to resolve disputes relating to financial services or products offered by its 175 member financial service providers (FSPs) covering banking institutions, DFIs, insurers, takaful operators, insurance and takaful brokers, payment instrument issuers and financial advisers. While largely evolved from the former Financial Mediation Bureau, key aspects of its governance and operations have been strengthened and enhanced to deliver greater efficiency in the handling of disputes and improve incentives for FSPs to engage more constructively with customers.

Table 5.2

**Enforcement Actions Taken in 2016**

| Area                                                             | Enforcement Actions                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Illegal deposit taking                                           | <ul style="list-style-type: none"> <li>A charge was pursued against an individual for illegal deposit taking under section 25(1) of the Banking and Financial Institutions Act 1989 (BAFIA).</li> <li>An individual was convicted for a charge under section 112(1)(c), read together with section 25(1) of the BAFIA, resulting in fines amounting to RM100,000 and imprisonment.</li> </ul>                                                                                                                                                                                                                      |
| Non-compliance with prudential requirements                      | <ul style="list-style-type: none"> <li>Compounds amounting to RM5.4 million were imposed on one Islamic bank for failure to comply with statistical reporting requirements under section 78 of the Central Bank of Malaysia Act 2009.</li> <li>Administrative monetary penalty amounting to RM1.4 million was imposed on a bank for failure to submit audit findings under section 48(1) of the Financial Services Act 2013 (FSA).</li> </ul>                                                                                                                                                                      |
| Unauthorised provision of money services                         | <ul style="list-style-type: none"> <li>12 charges were pursued against three entities and nine individuals for the unauthorised provision of money remittance services under section 4(1) of the Money Services Business Act 2011 (MSBA).</li> <li>Two entities and five individuals were convicted for eight charges of unauthorised provision of money remittance services under section 4 and section 23 of the MSBA, resulting in fines amounting to RM370,000 and imprisonment.</li> </ul>                                                                                                                    |
| Non-compliance with regulatory requirements                      | <ul style="list-style-type: none"> <li>Compounds amounting to RM39,000 were imposed on three MSB operators for failure to issue receipts to customers for exchange transactions under section 27 of the MSBA.</li> <li>Administrative monetary penalties amounting to RM12,000 were imposed on eight MSB operators for failure to maintain minimum capital funds under section 22 of the MSBA.</li> <li>Administrative monetary penalties amounting to RM20,500 were imposed on 13 MSB operators for failure to submit their audit reports within the specified period under section 31(9) of the MSBA.</li> </ul> |
| Non-compliance with foreign exchange administration requirements | <ul style="list-style-type: none"> <li>Compounds amounting to RM22.9 million were imposed on seven institutions for failure to comply with foreign exchange administration requirements under section 214 of the FSA and section 225 of the Islamic Financial Services Act 2013 (IFSA).</li> </ul>                                                                                                                                                                                                                                                                                                                 |
| Non-compliance with AML/CFT policies                             | <ul style="list-style-type: none"> <li>Compounds amounting to RM1.7 million were imposed on one bank for failure to comply with reporting obligations and record-keeping requirements under section 14(1)(b) and section 17(1) of the Anti-Money Laundering, Anti-Terrorism Financing and Proceeds of Unlawful Activities Act 2001 (AMLA).</li> <li>Compounds amounting to RM1.6 million were imposed on one bank for failure to comply with reporting obligations and AMLA Orders under section 14(1)(b) and section 50 of AMLA.</li> </ul>                                                                       |

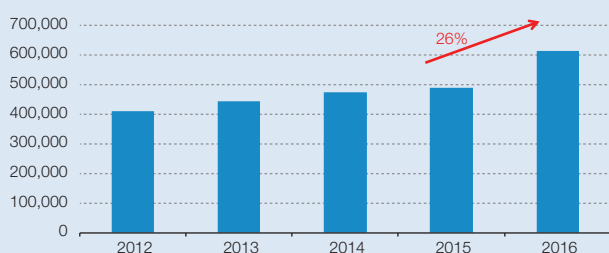
Source: Bank Negara Malaysia

Enquiries and advisory services handled through BNMLINK and TELELINK – the Bank's point of contact with the public – continued on an upward trend in 2016 (Chart 5.3). An average of 2,562 enquiries, advisory services and complaints were handled by the Bank per day, 27% higher from 2015. Conversely, fewer complaints were recorded against FSPs (Chart 5.4). The Bank's engagements with consumers and FSPs indicated that consumers are more aware of avenues available for them to address their enquiries and concerns. FSPs in turn are continuing to incorporate feedback shared by the Bank from its management of public complaints to improve the way that FSPs manage and respond

to customer issues. Such feedback has evolved to include not only individual concerns relating to a specific FSP, but also broader emerging issues observed within the financial industry in Malaysia.

Efforts by the Bank together with its partners to raise the level of financial literacy were further bolstered by the establishment of the Financial Education Network (FEN) in November 2016. Its initial members comprise the Bank, Securities Commission Malaysia, the Ministry of Education, Employees Provident Fund, Malaysia Deposit Insurance Corporation, Credit Counselling and Debt Management Agency and Permodalan Nasional Berhad, with membership expected to expand further as needed

Chart 5.3

**Enquiries and Advisory Services Handled by the Bank**

Source: Bank Negara Malaysia

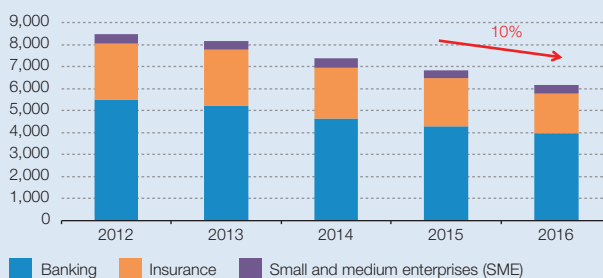
to drive targeted initiatives. The FEN aims to increase the impact of financial education initiatives and identify new opportunities to improve financial literacy through greater inter-agency alignment, closer collaboration as well as a strong focus on impact assessments. To this end, the FEN will work with relevant government ministries, industry associations and consumer groups to deliver, monitor and measure financial education initiatives under a coordinated national strategy. A current priority of the FEN is to improve public awareness and education on the need for long-term financial planning. This is reflective of inadequacy in retirement savings, which has also been highlighted by the Bank in previous reports, and a continuing concern over the lack of attention to long-term financial planning observed among a majority of Malaysians<sup>1</sup>.

### The Financial Education Network comprising regulators and key financial education stakeholders was established in November 2016 to coordinate and drive a national financial education strategy in Malaysia

The Bank also collaborated with the Department of Social Welfare to improve financial access for persons with disabilities (PWDs). Financial institutions were encouraged to provide more bespoke services which cater to the needs of the disabled, and to continue to improve physical infrastructure accessibility for PWDs at all their financial access points. To date, FSPs have trained more than 10,000 front liners to provide appropriate support for the special needs of PWDs. A DFI has also launched a special

<sup>1</sup> Based on the International Survey of Adult Financial Literacy Competencies conducted by the Organisation for Economic Co-operation and Development/International Network on Financial Education in 2016.

Chart 5.4

**Complaints Received by the Bank**

Source: Bank Negara Malaysia

financing programme dedicated to providing PWDs with working capital for agriculture and agro-based businesses. Promoting the responsible usage of financial services continues to be a focus of the Bank's outreach and education initiatives, in particular among the lower income and rural communities. These efforts have led to more affordable financial product offerings by FSPs that participated in the programmes, including insurance and takaful products that help provide financial protection against unexpected adverse events such as fire and flood disasters.

During the year, 56 new entities were added to the Financial Consumer Alerts (FCA) list of non-authorised or non-approved entities (available on the Bank's website), bringing the total number of entities on the list to 277. Many of the entities identified on the list are suspected to be carrying on activities which contain elements of deposit taking. It is important for the public to be aware of evolving fraud methods and to take precautionary steps to protect themselves from such schemes. These continued to be key themes in the Bank's education campaigns throughout the year. Important information is widely disseminated by the Bank through multiple channels, including social media and the Bank's MyBNM mobile application, which provides users with up-to-date information on consumer-related matters and financial crimes.

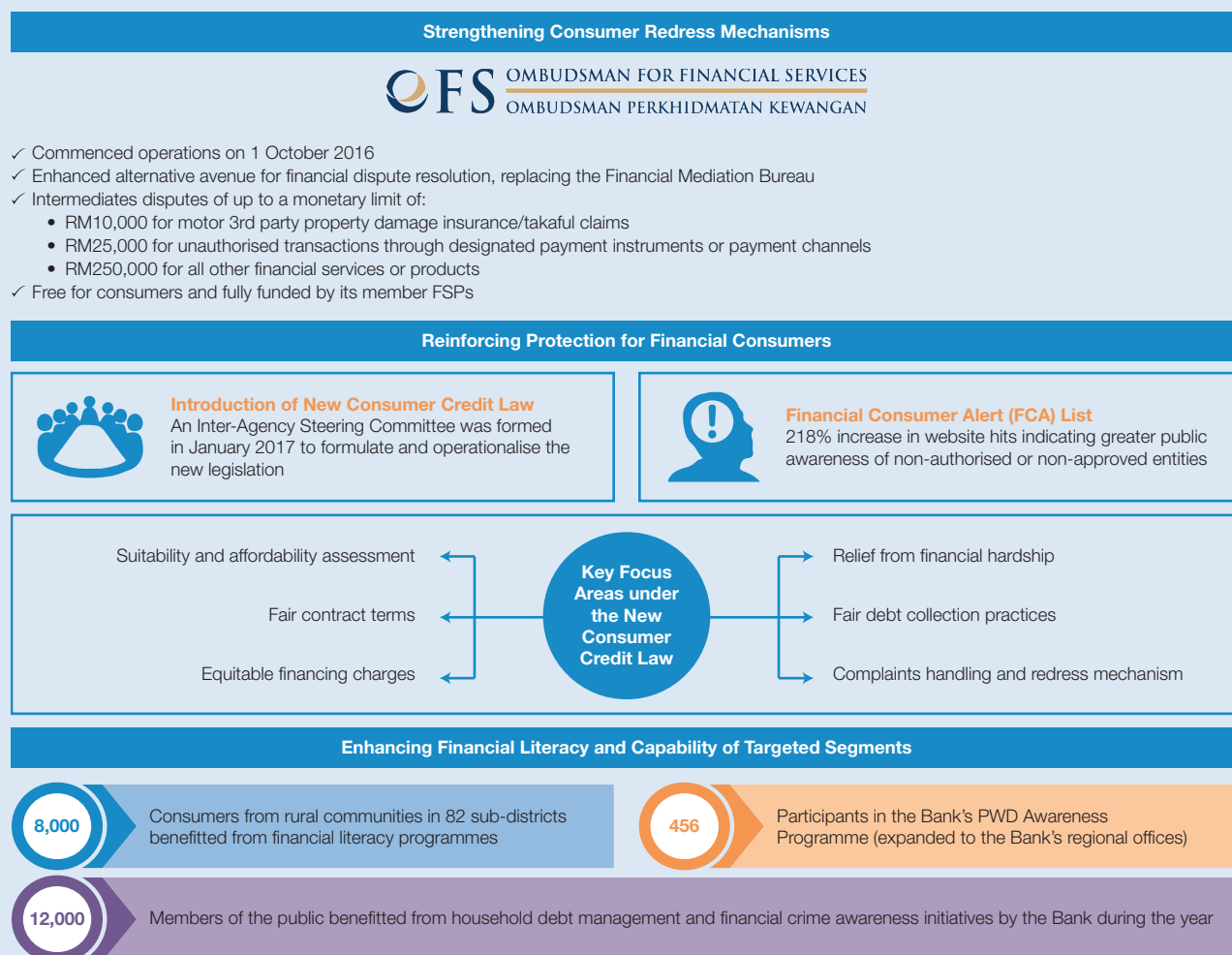
Work to develop a consumer credit law for Malaysia was advanced during the year to strengthen the legal protection of borrowers in their dealings with credit providers. Currently, consumer credit activities fall under the purview of several laws such as the FSA, IFSA, Hire Purchase Act 1967, Pawnbrokers Act 1972 and Moneylenders Act 1951. Provisions under these laws are not always aligned, resulting in the inconsistent protection of borrowers. Different approaches to regulation (e.g. by provider or product) have also given rise to gaps in the regulatory framework that can



undermine the objective of providing appropriate protection to borrowers. The Bank, Ministry of Domestic Trade, Co-operatives and Consumerism and Ministry of Urban Wellbeing, Housing and Local Government moved forward with plans to formulate and consult more widely with key stakeholders on a consolidated consumer credit law during the year. The law will, among other things, provide more comprehensive protection for borrowers, including in the areas of affordable financing, debt relief, disclosures and debt recoveries. The proposed law will also aim to improve inter-agency regulatory and supervisory coordination, and strengthen enforcement mechanisms in respect of consumer credit activities. Key highlights of the initiatives to enhance consumer protection and empowerment in 2016 are summarised in Diagram 5.2.

Diagram 5.2

## Key Initiatives to Enhance Consumer Protection and Empowerment in 2016



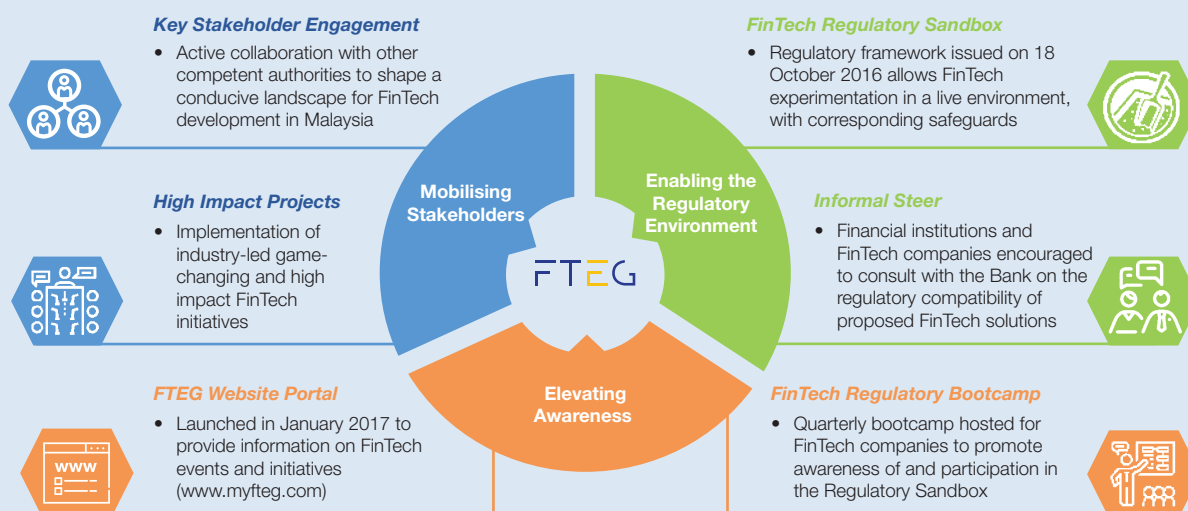
Source: Bank Negara Malaysia

## FINTECH INNOVATION

The recent advent of FinTech is increasingly redefining the provision, distribution and consumption of financial services. Innovative FinTech solutions are creating new opportunities to boost access to finance for businesses and consumers, and enhance the effectiveness and efficiency of financial services in supporting Malaysia's economic transformation. The Bank is committed to the development of a safe and supportive regulatory environment for FinTech innovations in Malaysia. In June 2016, the Bank established the Financial Technology Enabler Group (FTEG), tasked with formulating policy measures and strategies to facilitate the adoption of technological innovations by the industry. An overview of key initiatives and programmes that have been rolled out by the group is provided in Diagram 5.3.

Diagram 5.3

## Key Initiatives under the Financial Technology Enabler Group



Source: Bank Negara Malaysia

An important development in 2016 was the publication of finalised parameters for the Regulatory Sandbox (Sandbox) in October. The Sandbox allows for the experimentation of innovative FinTech solutions in a live market environment, where the proposed solutions have clear potential to:

- improve the accessibility, efficiency, security and quality of financial services;
- enhance the efficiency and effectiveness of financial institutions' risk management processes; or
- address gaps in, or open up new opportunities for, financing or investments in the Malaysian economy.

During the testing period for solutions accepted into the Sandbox, appropriate flexibilities will be granted under the Bank's existing regulatory policies. This may include prudential or market conduct requirements that are adapted in line with limited exposures created in a test environment. To date, one solution has commenced live testing, while the Bank has preliminarily accepted another five solutions for testing in the Sandbox. The solutions include new methods for delivering comparative insurance product information, peer-to-peer currency exchange models and electronic money remittance services. The commencement of live tests is conditional upon the ability of applicants to meet requirements specified by the Bank on a case-by-case basis.

To catalyse the development of a thriving FinTech ecosystem in Malaysia, the Bank will embark on several priority development areas moving forward. These are:

- adopting an open application programme interface (API) to enable data sharing with third parties without compromising data privacy and security;
- creating a common KYC utility to facilitate a more effective and efficient approach by financial institutions to manage compliance obligations. This also aims to reduce fraud and improve the delivery of personalised financial services;
- developing guidelines for cloud computing to harness operational efficiencies while protecting data integrity in financial services;
- examining applications of distributed ledger technology to evolve new infrastructure, arrangements and processes that will transform the way financial services are delivered; and
- enhancing cybersecurity resilience within the financial services sector.

It is envisaged that collaborative actions by the industry will play an important role to achieve scale, efficiency and cost-effectiveness in driving these priorities. Several industry working groups have been formed to develop more detailed proposals in the areas identified for implementation in the coming year, focusing initially on the establishment of a



centralised electronic KYC on-boarding process for the opening of bank accounts and the application of distributed ledger technology for trade financing. The Bank also continues to collaborate closely with key stakeholders and competent authorities such as Securities Commission Malaysia and Malaysia Digital Economy Corporation in ensuring a facilitative environment for FinTech innovations.

Collaboration between industry players is pivotal in advancing priority development areas identified, which will accelerate the development of a thriving FinTech ecosystem in Malaysia moving forward

The Bank is mindful that the more pervasive use of technology in the operations of financial institutions inherently increases exposures of the financial system to cyber threats that can undermine the seamless provision of critical financial services and threaten

financial system integrity. It is therefore imperative that in embracing innovation, close and careful attention is given to ensuring the financial system maintains strong and robust defences against cyber attacks, particularly around security infrastructure and operational controls. As part of broader ongoing efforts to strengthen the industry's resilience against cyber threats (also see the Chapter 'Payment and Settlement Systems'), the Bank established the Industry Cyber Working Group as a platform to encourage financial institutions to share best practices in technology risk management, coordinate efforts to mitigate cyber risks and allow confidential exchange of intelligence on cyber threats. To heighten the level of cyber preparedness and resilience of the industry to cyber threats, the Bank has required all banking institutions to undertake a comprehensive assessment of cyber threats and strengthen controls to address these threats. This includes regular updating of security standards and protocols for web services encryption, and clearly defining arrangements to ensure timely reporting of security incidents by third-party service providers.

## Mid-term Review of the Financial Sector Blueprint (2011 – 2020)

*By Ian Lee Wei Xiong and Kershia Tan Wei*

Launched on 21 December 2011, the Financial Sector Blueprint (Blueprint) sets out a 10-year strategic plan to increase the resilience, efficiency and competitiveness of Malaysia's financial sector. Building on strengthened foundations that followed the implementation of the Financial Sector Masterplan in the previous decade, the Blueprint encapsulates 69 recommendations and 214 initiatives to promote a financial sector that will continue to perform its role effectively in supporting the sustainable growth of the Malaysian economy.

The recommendations reflect a changing economic and financial landscape shaped by forces that include growing income inequality, demographic changes, post-crisis regulatory reforms, the increasing importance of the services sector in the economy, greater regional and global interconnectedness and technological advancements. Against this backdrop, nine key objectives are addressed in the Blueprint (Diagram 1).

Diagram 1

### Key Objectives Under The Blueprint



Source: Bank Negara Malaysia

This article reviews the progress and achievements under the Blueprint to date. It also reviews emerging trends and developments, as well as their implications for the prioritisation of initiatives under the Blueprint going forward.

### Progress and Achievements

Steady progress has been made towards realising the Blueprint's objectives, with 41% of the identified initiatives fully implemented and another 44% progressing as planned. Collectively, these initiatives cover most of the high-impact initiatives across all nine key objectives of the Blueprint (Diagram 2). In particular, measures to safeguard the stability of the financial system and strengthen key enablers for financial development have helped cultivate the necessary environment for greater innovation and growth of the financial sector. Further details of these measures are provided in Diagram 3.

Impact assessments of initiatives that have been implemented show encouraging results, with the longer-term benefits of certain measures expected to be realised over time, or in the case of prudential safeguards, during periods of financial stress.

Diagram 2

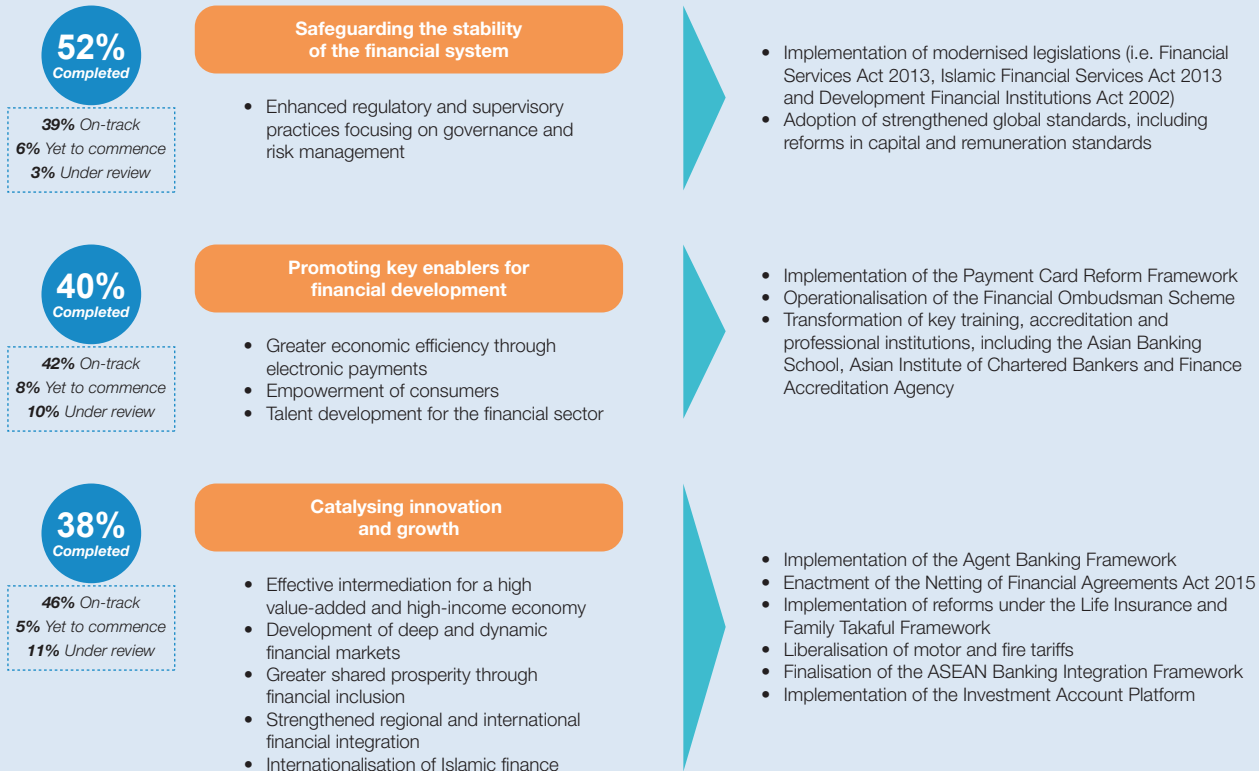
### Overall Progress of Blueprint Initiatives



Source: Bank Negara Malaysia

Diagram 3

### Highlights of Key Initiatives



Source: Bank Negara Malaysia

The positive impact of initiatives implemented under the Blueprint has been most notable in the areas of financial inclusion, regulation and supervision, regional financial integration and migration to electronic payments (Diagram 4). Financial inclusion has expanded significantly, mainly supported by the growing presence of agent banks. This has been accompanied by increased consumer awareness and the development of a stronger consumer protection framework. Furthermore, financial institutions in Malaysia have weathered episodes of financial turbulence, weaker growth and compressed margins in recent years with strong financial buffers and the continued observance of prudent risk-taking. Stronger regulatory and supervisory co-operation among authorities in the region - the closest in recent memory - have also provided conditions for enhanced regional growth and stability. Meanwhile, the growth in the usage of electronic payments has delivered further efficiency gains for the Malaysian economy through lower costs of handling cash and cheques.

Diagram 4

### Impact of Initiatives under the Blueprint

| KEY IMPACT                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>GREATER SHARED PROSPERITY THROUGH FINANCIAL INCLUSION</b> <ul style="list-style-type: none"> <li> <b>97%</b> of sub-districts<sup>1</sup> have access to financial services (2011: 46%)</li> <li> <b>92%</b> of customers have active deposit accounts (2011: 87%)</li> <li><b>98%</b> of customers have performing financing accounts (2011: 97%)</li> </ul>                                                                                                                                                                                                                                                                                                                                                              | <b>ENHANCED GOVERNANCE AND RISK MANAGEMENT PRACTICES</b> <ul style="list-style-type: none"> <li> <b>International endorsement</b> of Malaysia's regulatory and supervisory regime from the International Monetary Fund and Financial Action Task Force</li> <li> <b>Continued resilience</b> of domestic financial institutions during periods of heightened volatility and slower economic growth</li> </ul>                                                                                                                                                                                                  |
| <b>STRENGTHENED REGIONAL AND INTERNATIONAL FINANCIAL INTEGRATION</b> <ul style="list-style-type: none"> <li> <b>15</b> countries hosting the operations of Malaysian banking institutions</li> <li> Greater expansion of Malaysian banks into the ASEAN region through the ASEAN Banking Integration Framework</li> <li> Institutionalisation of an EMEAP<sup>2</sup>-level crisis management and resolution framework</li> <li> Establishment of seven new locally-incorporated foreign banks with strong value propositions since 2011</li> </ul> | <b>GREATER ECONOMIC EFFICIENCY THROUGH ELECTRONIC PAYMENTS</b> <ul style="list-style-type: none"> <li> <b>97</b> electronic payment transactions per capita in 2016 (2011: 49)</li> <li> <b>31%</b> growth in credit transfer transaction volume in 2016 (2011: 25%), accompanied by an accelerated decline in the number of cheques issued to 133 million in 2016 (2011: 205 million)</li> <li> <b>RM1.1 billion</b> investment commitment to enhance the payment card infrastructure between 2015 and 2020</li> </ul> |

<sup>1</sup> Population of at least 2,000

<sup>2</sup> The Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) is a co-operative organisation of central banks and monetary authorities in the East Asia and Pacific region

Source: Bank Negara Malaysia

Overall, greater financial development has been accompanied by positive economic spillover effects in relation to the participation of Malaysians in the financial sector. As at end-2016, the financial sector employed close to 164,592 people<sup>1</sup>, with 6,100 additional jobs created since the first quarter of 2013. This accounts for approximately 3% of total employed workers in Malaysia. As one of the higher-productivity, knowledge-based sectors, 74% of financial sector employees are high-skilled professionals. Reflecting this, average salaries in the financial sector grew by an average rate of 11.4% between 2013-2016, amounting to RM7,790 per month (per worker) in 2016

<sup>1</sup> Includes employees of commercial banks, Islamic banks, investment banks, international Islamic banks, development financial institutions, insurers and takaful operators.

(2013: RM5,661), while productivity increased at an average rate of 4%<sup>2</sup> over the same period. Nevertheless, while Malaysian financial institutions continue to restructure operations in line with the evolving financial landscape, vacancies remain ample (2016: 4,800 positions vacant), especially for high-skilled positions.

In addition, the financial sector has also contributed positively to the value of gross domestic product (GDP). The real value-added of financial services to GDP stood at over RM75.3 billion in 2016, accounting for 6.8% of real GDP. Over the 2011-2016 period, the value-added of the financial sector expanded at a compounded annual growth rate (CAGR) of 2.7%. Growth has, however, been more moderate in recent years, mainly due to the challenging economic environment, leading to lower growth in both lending and capital market activities, amid heightened competition.

While significant progress has been made, there remain several areas of sizeable untapped potential. Malaysia's insurance and takaful industry is still some way from saturation, reflecting its significant potential for growth. Though insurance penetration, as measured by life insurance and family takaful policies per population, has increased to 54.2% (2010: 51.1%), growth has remained subdued for the past five years. In the general insurance and takaful sector, domestic capacity for larger and more specialised risks is reaching its limits, which in turn has an impact on Malaysia's reinsurance outflows. Among the challenges faced by the industry are the lack of underwriting expertise for large and specialised risks, low levels of risk awareness and limited affordable products, particularly for small and medium enterprises (SMEs) as well as low-income groups.

As Malaysia transitions into a high value-added, high-income economy, an area for further development is financial intermediation for new growth areas that are more knowledge- and technology-intensive, and that have high innovation content. While such activities are expected to intensify going forward, bank financing remains heavily focused on more traditional sectors. For instance, less than 1% of SME financing approvals in 2016 were granted to new growth segments such as green technology, biotechnology and other innovative industries focusing on intellectual property as well as information and communications technology (ICT). The key constraints in traditional financing solutions for these industries are further discussed in the box article 'The Role of Alternative Finance to Fund the Needs of a New Economy'. These include the lack of collateral, limited credit history and high information asymmetries. Overriding concerns to protect deposits, which remain a key source of funding for banks, also underscore the need and opportunities to develop alternative financing solutions for new growth industries.

## Emerging Trends and Developments

To a large extent, the key considerations that underpinned the recommendations in the Blueprint continue to remain relevant (Diagram 5).

Nonetheless, developments over the past five years have prompted the consideration of new initiatives to achieve the objectives of the Blueprint, at the same time shifting certain existing initiatives into sharper focus.

One such development has been the rise of financial technology (FinTech). FinTech has extended the provision of financial services beyond the traditional purview of banks, and has the potential to fundamentally change the way financial services are delivered and consumed. This in turn could materially alter the competitive dynamics of the financial sector and the nature of financial intermediation. The Bank expects the growing adoption of FinTech to have wide-ranging implications for areas such as payments, financial inclusion, Islamic finance, consumer protection and money services business. Going forward, FinTech will also impact the composition and types of jobs that will be offered in the financial sector. In particular, labour-intensive tasks that are repetitive and predictable in nature are at high risk of being automated. While the net impact of FinTech on jobs is still inconclusive, it is imperative for the industry to re-skill and up-skill the current workforce with technology-complementing competencies in order to reap the gains from technological adoption, while mitigating its disruptive impact on the workforce.

<sup>2</sup> Productivity in the financial sector is proxied by the sum of net interest income, fee income and insurance/takaful premiums less claims, divided by the number of workers employed in the banking and insurance/takaful sectors.

Diagram 5

### Key Considerations and Strategies Underpinning the Blueprint

| CONSIDERATIONS                                 | STRATEGIES                                                                                                                                                                                                          |
|------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Maturing and urbanised population           | • Development of a more sustainable pension system for retirement                                                                                                                                                   |
| 2. Large and growing middle-income class       | • Enhanced coverage for medical and health insurance products and services, including long-term care and other forms of disability insurance                                                                        |
| 3. Growth of knowledge-intensive services      | • Development of a more diversified, vibrant and sustainable funding ecosystem beyond traditional bank financing                                                                                                    |
| 4. Strong base of dynamic and competitive SMEs | • Promotion of a holistic ecosystem and strategic partnerships between domestic and regional institutions to support increasing trade and investment activities                                                     |
| 5. Transition to higher value-added activities | • Development of intermediaries, financial markets and supporting infrastructure to facilitate the provision of large and long-term project financing, including enhancing the public-private partnership framework |
| 6. Greater global and regional integration     |                                                                                                                                                                                                                     |

Source: Bank Negara Malaysia

Another important development has been the moderating external and domestic macroeconomic assumptions over the medium-term horizon. While earlier targets under the Blueprint envisioned the financial system growing at an annual rate of 8-11%, this is now expected to moderate, in line with the average annual growth rate of around 6.8% achieved over the 2011-2016 period. This is likely to increase the pressure for financial institutions to re-examine existing business models and look beyond traditional business segments to harness new areas of growth. Additionally, these macroeconomic trends have also heightened the focus on the role of the financial sector in providing solutions to the socio-economic challenges associated with housing affordability, urban poverty and the resilience of households to financial shocks.

Greater volatility in the international and domestic financial markets also presents new challenges for the management of financial stability. This has been driven by uncertainties surrounding monetary policy in the United States, combined with global economic and political developments, including increased volatility in commodity prices. Given the openness of Malaysia's financial markets, enhancing the depth, breadth and overall resilience of financial markets, including the foreign exchange and derivatives markets, has become more important.

Globally, businesses and individuals are also increasingly reflecting sustainable development and growth considerations in economic decision-making. Examples of these include growing movements towards Sustainable, Responsible and Impact Investing (SRI) and the adoption of Environmental, Social and Governance (ESG) criteria in investment decisions. This presents important growth opportunities for Islamic finance, which emphasises the protection and improvement of social welfare as its core tenet. Currently, Islamic financial activities in Malaysia are already governed by a comprehensive Shariah contract-based regulatory framework, providing a strong foundation for the financial sector to undertake a larger role in sustainable development through the offering of SRI solutions.

### Priorities Moving Forward

With four years remaining to accomplish the aspirations of the Blueprint, an overview of the key priorities leading up to 2020 is outlined in Diagram 6. This takes into account developments discussed in the preceding section, which will entail a re-examination of regulatory settings and development strategies in several areas.

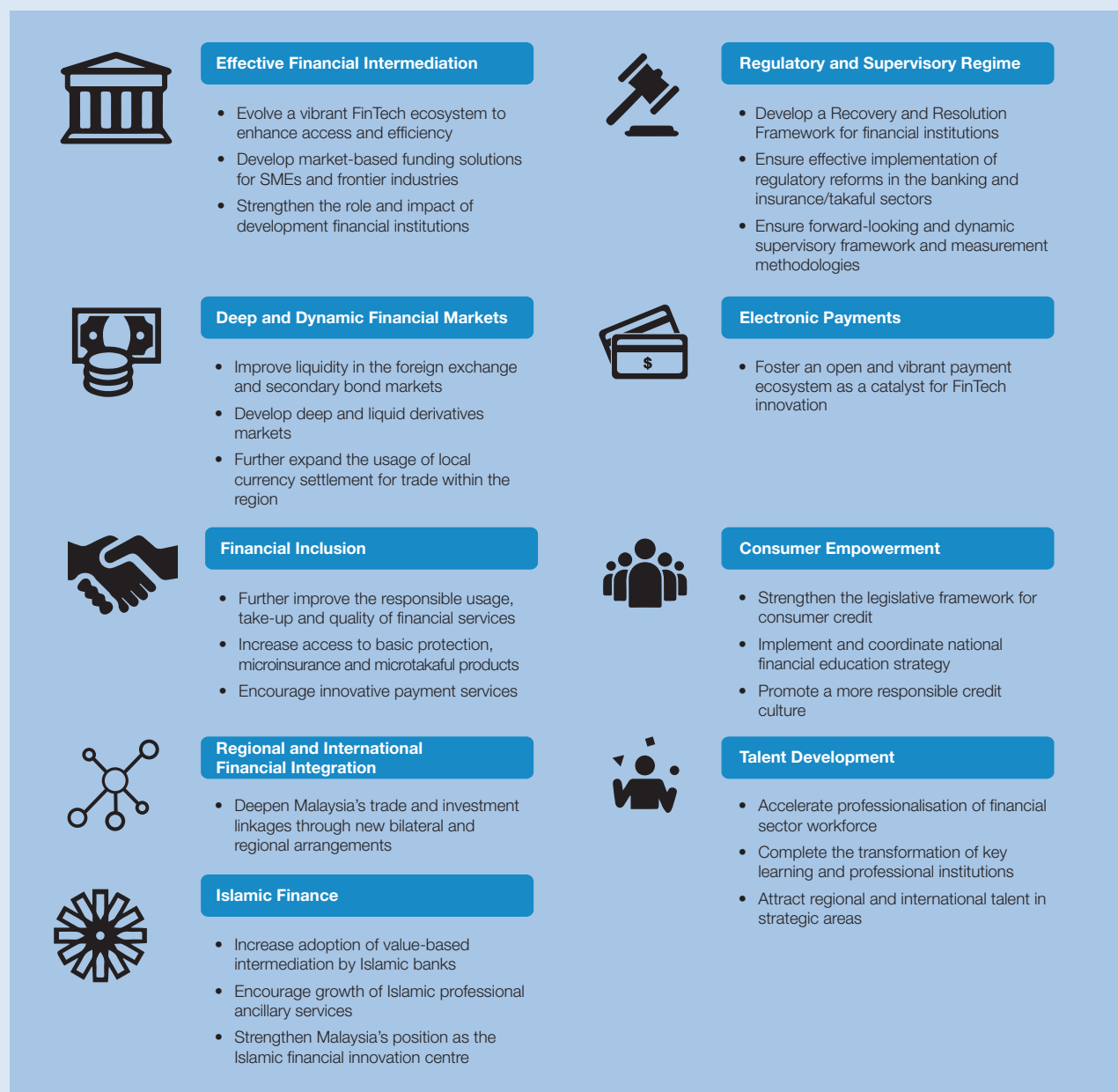
Among them is the evolution of a vibrant alternative financing and FinTech ecosystem to support future innovation and expand funding sources for SMEs. This includes the development of more market-based funding solutions

to diversify sources of financing and reduce reliance on bank-based funding. Greater focus will be accorded to financing frontier industries and early stage start-ups by improving the framework for alternative financing solutions such as factoring and leasing. The role of development financial institutions will also be reviewed to better serve and support the development of targeted socio-economic sectors.

The Bank seeks to encourage a larger role for the industry to lead initiatives that will improve the delivery of financial services through the adoption of FinTech. Recent examples of this are the initiation of two high-impact technology-based projects to be led by the industry, including the development of distributed ledger technology to drive greater efficiency in trade financing and simplifying the Know-Your-Customer process through digital means.

Diagram 6

### Priorities Moving Forward under the Blueprint



Source: Bank Negara Malaysia



To address the challenges and realities arising from greater financial market volatility, the Bank will continue to focus on developing deep and liquid financial markets, including ensuring the availability of cost-effective hedging instruments to manage risk exposures. Towards this end, the Bank, together with the Financial Markets Committee (FMC) have introduced several measures aimed at improving market stability and broadening the onshore hedging market. Further details on these measures and the role of the FMC are provided in this Chapter.

Increased emphasis will also be given to elevating the role of insurance and takaful to meet the protection and risk management needs of Malaysian households and businesses. Measures will be pursued to accelerate insurance penetration and reduce the protection gap by making basic protection, microinsurance and microtakaful products more widely available. This will be supported by the implementation of a proportionate regulatory approach for microinsurance and microtakaful to provide a conducive operating environment for the industry to develop products that are better catered to currently underinsured segments. Further diversification of insurance and takaful distribution channels is also expected to significantly improve the availability and take-up of protection products. In the general insurance and takaful sector, the Bank will continue to focus on wide-ranging reforms, including the phased liberalisation of the motor and fire tariffs as well as improving the quality of service and management of costs with respect to claims settlements. These initiatives will be pursued with due regard to the balance between domestic and foreign participation in the insurance and takaful sector, in line with interests that will best serve Malaysia.

## A New Model for Money Services Business – Towards Greater Modernisation and Professionalism

*By Mark Lee Kian Meng and Mohd Izwan Ali Mohd Long*

The transformation of the money services business (MSB) industry in Malaysia, which comprises the remittance, money changing and wholesale currency businesses, has evolved to become a more dynamic and efficient industry with significantly strengthened safeguards to prevent its use for financial crime. Over the last five years, the industry has registered double-digit growth in the remittance and currency exchange segments, averaging at 16.8% and 16.2% per annum respectively from 2012 to 2016. Approximately a quarter of this is estimated to be from the transactions previously conducted through informal channels. This was supported by a significant expansion in the number of access points to MSB services and more efficient competition which lowered remittance cost to less than 3%, below the World Bank's target of 5%. The quality of service also reflects higher standards of professional conduct by providers of money services, with greater protection accorded to consumers.

The transformation of the industry was the result of broad reforms undertaken by the Bank to enhance the regulatory and supervisory framework for money services, with the view to improve conditions for providing competitive, efficient and safe remittance and currency exchange services. This article provides an overview of this transformation over the period from 2011 to 2016 and priorities to further develop the MSB industry going forward, in line with the Bank's key roles in promoting financial inclusion and protecting the integrity of and confidence in the financial system.

### Industry Characteristics Prior to 2011

Prior to 2011, the money services industry faced multiple challenges. It was a highly fragmented industry with more than 1,000 licensed companies conducting MSB, which lacked the conditions for effective competition and sustainable growth. About 80% of the industry players were small in size, without the resources or capacity to meet regulatory requirements and observe professional standards of conduct necessary to support the effective monitoring and identification of risks. Given the cash-intensive nature of money services, the industry was increasingly exposed to the risk of being used as a conduit to facilitate money laundering and terrorism financing (ML/TF) activities. This was further compounded by the proliferation of unlicensed currency exchange and remittance providers that facilitated unrecorded transactions, including those by foreign workers in the country. These conditions underlined weak safeguards to prevent financial crimes, which in turn risked undermining the safety and integrity of the industry and the broader financial system.

### Passage of the Money Services Business Act 2011

The passage of the Money Services Business Act (MSBA) by the Parliament in 2011 paved the way for key legislative and regulatory reforms in the MSB industry. Prior to the MSBA, remittance, money changing and currency wholesale activities were governed under three separate pieces of legislation, namely the repealed Money-Changing Act 1998, the Payment Systems Act 2003 and the Exchange Control Act 1953. Bringing these fragmented pieces of legislation governing the industry together under a cohesive and streamlined regulatory framework served to provide a clear strategic focus for the development of the industry and promote greater clarity and consistency in the regulatory framework. This was also important to align the industry with the objectives of its transformation.

The introduction of the MSBA laid out a single, unified regulatory framework for MSB activities. It establishes requirements to observe minimum standards of professional conduct by MSB companies, provides for greater protection of consumers and strengthens safeguards against ML/TF activities. It also introduced strengthened licensing criteria to ensure that only credible businesses were permitted to operate in the industry.

## Key Strategies in the Transformation of the MSB Industry

### 1. Implementation of new operating model for money services

A key element of the MSBA was the implementation of a new model for MSB which ultimately became an important catalyst for structural change in the industry. The new model featured three key changes:

- The implementation of a proportionate regulatory regime which reflects regulatory settings that are commensurate with the scale, scope and complexity of business. This includes tiered regulatory requirements, which allow MSB companies to operate at a level commensurate with its financial and operational capacity, and the adoption of a risk-based approach for Anti Money Laundering/Counter Financing of Terrorism (AML/CFT) measures. These arrangements supported smaller companies in meeting appropriate regulatory requirements, while ensuring that heightened risks posed by larger companies or in specific business segments continue to be effectively managed;
- An expanded scope of business which allows a MSB company to operate remittance, money changing and wholesale currency businesses under a single entity, subject to the demonstration of strong compliance, governance and management standards. This has improved the viability of MSB companies and enabled investments to build stronger financial and operational capacity. Over the period from 2012 to 2015, the overall profitability of MSB companies improved significantly, averaging 47% per annum for the MSB industry as a whole; and
- The implementation of the principal-agent arrangement which allowed for larger MSB companies to appoint smaller companies as their agents. This arrangement improved conditions for effective monitoring and supervision of MSB activities, and were also instrumental in minimising dislocations arising from adjustments by smaller companies to significantly strengthen regulatory requirements. The new arrangement allowed smaller companies to continue serving local communities with the benefit of being able to leverage on operational systems and controls provided by principals to meet increased compliance obligations. For principals, this arrangement offered opportunities to expand and grow their businesses at lower costs.

Over a period of 18 months from the coming into force of the MSBA, all existing MSB companies were re-assessed against strengthened licensing criteria to affirm their eligibility for a licence to conduct MSB. This included an assessment of their capacity to meet compliance obligations and the integrity of those in control of and responsible for the business. Companies identified with involvement in unauthorised activities or conduct associated with the facilitation of financial crime were required to cease operations, and faced enforcement actions. Smaller companies with limited resources were encouraged to consider becoming agents to improve their ability to meet compliance obligations.

By the end of the review, 103 MSB companies were required to cease operations, while 67 companies became agents. Licensed MSB companies continue to be subjected to periodic reviews as part of the process for renewing their licences. As at end-2016, the number of licensed MSB companies had been reduced further to 354 as more companies elected to become agents or exited the industry due to material compliance failures or findings of involvement in illicit activities.

### 2. Promoting strong compliance

Raising compliance standards across the industry was a key priority of the transformation programme. The Bank adopted a two-pronged approach encompassing heightened supervisory activities and an intensive compliance education initiative. Observations from the Bank's on-site supervisory reviews of MSB operations are used to engage MSB companies on specific actions to improve the quality and effectiveness of management oversight and operational controls. Particular attention is given to record keeping controls and AML/CFT measures. More serious compliance failures are met with strong enforcement actions, including the revocation or non-renewal of a MSB licence and prosecution of key responsible persons.

To complement such supervisory engagements, the Bank also developed and delivered structured compliance education programmes designed to build understanding among MSB companies of their compliance obligations. Close to 100 education workshops were organised nationwide over a five-year period, with ongoing plans to repeat and update the programmes over time as needed.

### 3. Strengthening industry arrangements

The Bank encouraged and facilitated the establishment of the Malaysian Association of Money Services Business (MAMSB) in 2013. MAMSB plays a key role in capacity building through its training and education programmes for MSB companies which serve to improve performance and compliance, particularly in areas relating to AML/CFT compliance, financial reporting, operational controls and conduct towards consumers. In addition, it performs a key advocacy role to raise professional standards and provides an important channel for the Bank and the industry to engage on regulatory and consumer issues and developmental priorities for the industry.

Notable achievements of MAMSB include:

- Adoption of a professional code of conduct for MSB companies, supported by a disciplinary unit within MAMSB to enforce compliance with the code;
- Development of a five-year MSB Strategic Blueprint setting out priorities for implementation by the industry to support the modernisation objectives;
- Leading communications with the public and industry arrangements to provide information and assistance to the public in response to significant developments such as the withdrawal of Indian Rupee (INR) 500 and INR1000 notes in India and the surge in demand for United Kingdom Pound (GBP) following the Brexit vote; and
- Establishment of the MSB Group of Compliance Officers (GOCO) to support and facilitate initiatives to elevate the competence and effectiveness of compliance officers. With the support of GOCO, MAMSB introduced mandatory training requirements on AML/CFT compliance for all compliance officers and is in the process of facilitating the accreditation of all compliance officers in the industry to assure their competence.

### 4. Encouraging competition and raising consumer awareness

A major plank of the transformation programme also involved measures to encourage effective competition and educate the public on identifying and using formal channels, including non-bank channels, for remittance and currency exchange transactions. Based on findings of a survey conducted by the Bank, a key reason highlighted for the use of informal channels was low awareness of the availability of authorised non-bank channels that provide money services. Extensive consumer awareness and education programmes were mounted by the Bank in collaboration with the MSB industry. The Bank and industry worked with foreign embassies, relevant authorities and organisations in the private sector to raise awareness on access to authorised providers of MSB services, the advantages of dealing with authorised providers and the risks from using informal channels.

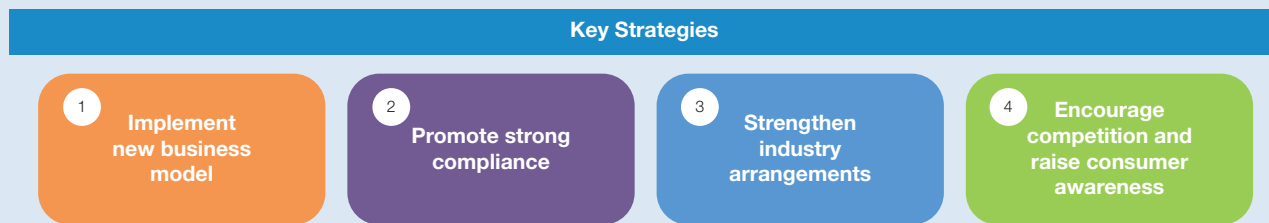
As part of efforts to further increase transparency and the effectiveness of outreach activities, the Bank collaborated with the World Bank in November 2015 to establish Johor Bahru as the first Greenback champion city in Asia. The Project Greenback 2.0 aims to increase efficiency in the market for remittances through an innovative approach, focusing on migrants. Given the growing share of cross-border remittances by small and medium enterprises (SMEs), the Bank also extended the project to SMEs, which is the first time that this has been included within the scope of a Project Greenback.

Initiatives implemented under the Project Greenback 2.0 included the introduction of the 'Pick Remit' mobile application which provides a convenient means for consumers to locate MSB companies and compare costs and services offered. New approaches to outreach and public engagements were also developed and tested with positive results. Plans are underway to replicate similar effective approaches in other parts of Malaysia.

In the wholesale currency segment, the Bank also issued new licences to companies undertaking wholesale currency business to promote efficient functioning of the market. This led to a more competitive market for wholesale currency operations which had been dominated by a small number of banking institutions with limited access for money services companies to source and clear foreign currency stocks. To date, six non-bank currency wholesalers have operations across the country, complementing banks to ensure the adequate supply of a wider range of currencies to retail MSB companies. This in turn has significantly reduced incentives for MSB companies to procure currencies from informal channels and unverified sources located outside Malaysia.

Diagram 1

## Summary of Key Strategies and Achievements in the Transformation of the MSB Industry



## Summary of Achievements

|                                                                   | Impact                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                          |                    |                          |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
|-------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------|--------------------------|--------------------|------------------|-------|-------|-------|-----------|-------|------|------|------|--------------------|--------------------------|--------------------|-------|------|------|------|-----|------|------|------|------|-----|------|------|------|------|-----|------|------|------|------|-----|------|------|------|------|-----|------|
| 1. Reduced fragmentation with improved viability of MSB companies | <ul style="list-style-type: none"><li>• Number of licensed MSB companies reduced from more than 1,000 as at end-2010 to 354 players in 2016.</li><li>• Small companies with turnover of less than RM30 million accounted for 27% of the total number of licensed MSB companies in 2016, compared to about 80% as at end-2010.</li><li>• Emergence of larger and stronger domestic MSB companies with viable regional aspirations.</li><li>• Stronger financial performance of MSB companies, with an overall average growth in profitability of 47% per annum between 2012 and 2015.</li></ul>                                                                                                                                                                                                                                                                                                                                                              |                          |                    |                          |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| 2. Wide access to services                                        | <ul style="list-style-type: none"><li>• 2,963 branches and agents of licensed MSB companies nationwide (2012: 2,518).</li><li>• 10 companies providing mobile and/or online remittance services (2012: 4).</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                          |                    |                          |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| 3. Growth in use of authorised remittance channels                | <table><tr><th>Growth</th><th>Outward Remittance</th><th>Retail Currency Exchange</th><th>Wholesale Currency</th></tr><tr><td>CAGR (2012-2016)</td><td>16.8%</td><td>14.5%</td><td>32.6%</td></tr><tr><td>2011-2012</td><td>17.3%</td><td>1.3%</td><td>n.a.</td></tr></table> <div><div>Chart 1</div><div>Steady Increases in MSB Transactions</div><div>(a) Value (RM billion)</div><div><table><thead><tr><th>Year</th><th>Outward remittance</th><th>Retail currency exchange</th><th>Wholesale currency</th><th>Total</th></tr></thead><tbody><tr><td>2016</td><td>34.3</td><td>48.1</td><td>1.7</td><td>84.1</td></tr><tr><td>2015</td><td>34.9</td><td>33.5</td><td>0.0</td><td>68.4</td></tr><tr><td>2014</td><td>28.5</td><td>30.2</td><td>0.0</td><td>58.7</td></tr><tr><td>2013</td><td>22.7</td><td>34.5</td><td>0.0</td><td>57.2</td></tr><tr><td>2012</td><td>18.4</td><td>27.8</td><td>0.0</td><td>46.2</td></tr></tbody></table></div></div> | Growth                   | Outward Remittance | Retail Currency Exchange | Wholesale Currency | CAGR (2012-2016) | 16.8% | 14.5% | 32.6% | 2011-2012 | 17.3% | 1.3% | n.a. | Year | Outward remittance | Retail currency exchange | Wholesale currency | Total | 2016 | 34.3 | 48.1 | 1.7 | 84.1 | 2015 | 34.9 | 33.5 | 0.0 | 68.4 | 2014 | 28.5 | 30.2 | 0.0 | 58.7 | 2013 | 22.7 | 34.5 | 0.0 | 57.2 | 2012 | 18.4 | 27.8 | 0.0 | 46.2 |
| Growth                                                            | Outward Remittance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Retail Currency Exchange | Wholesale Currency |                          |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| CAGR (2012-2016)                                                  | 16.8%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 14.5%                    | 32.6%              |                          |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| 2011-2012                                                         | 17.3%                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | 1.3%                     | n.a.               |                          |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| Year                                                              | Outward remittance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Retail currency exchange | Wholesale currency | Total                    |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| 2016                                                              | 34.3                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 48.1                     | 1.7                | 84.1                     |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| 2015                                                              | 34.9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 33.5                     | 0.0                | 68.4                     |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| 2014                                                              | 28.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 30.2                     | 0.0                | 58.7                     |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| 2013                                                              | 22.7                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 34.5                     | 0.0                | 57.2                     |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |
| 2012                                                              | 18.4                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | 27.8                     | 0.0                | 46.2                     |                    |                  |       |       |       |           |       |      |      |      |                    |                          |                    |       |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |      |      |      |     |      |

|                                               | <p>(b) Volume (million)</p> <table><tr><th>Year</th><th>Outward Remittance</th><th>Retail Currency Exchange</th></tr><tr><td>2012</td><td>9</td><td>18</td></tr><tr><td>2013</td><td>12</td><td>21</td></tr><tr><td>2014</td><td>15</td><td>22</td></tr><tr><td>2015</td><td>16</td><td>23</td></tr><tr><td>2016</td><td>16</td><td>25</td></tr></table> <p>Source: Bank Negara Malaysia</p> <ul style="list-style-type: none"><li>• Business remittance channelled through non-bank remittance service providers accelerated by approximately six-fold within a period of four years from RM100 million in 2013 to RM653 million in 2016 driven by higher remittances by SMEs.</li><li>• Under the Project Greenback 2.0 in Johor Bahru, approximately 170,000 new customers registered with licensed MSB companies within 13 months, and the average cost of remittances reduced to 2.02% in 2016 from 3.33% in 2015.</li></ul> | Year                     | Outward Remittance | Retail Currency Exchange | 2012 | 9 | 18 | 2013 | 12 | 21 | 2014 | 15 | 22 | 2015 | 16 | 23 | 2016 | 16 | 25 |
|-----------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|--------------------|--------------------------|------|---|----|------|----|----|------|----|----|------|----|----|------|----|----|
| Year                                          | Outward Remittance                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Retail Currency Exchange |                    |                          |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |
| 2012                                          | 9                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 18                       |                    |                          |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |
| 2013                                          | 12                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 21                       |                    |                          |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |
| 2014                                          | 15                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 22                       |                    |                          |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |
| 2015                                          | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 23                       |                    |                          |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |
| 2016                                          | 16                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | 25                       |                    |                          |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |
| 4. Improved regulatory compliance             | <ul style="list-style-type: none"><li>• Positive feedback on the MSB industry in the area of AML/CFT compliance, based on the Mutual Evaluation Exercise by the Asia/Pacific Group on Money Laundering in 2015. This reflected significant improvements in the industry’s observance of key AML/CFT measures, including proper record keeping, implementation of robust AML/CFT compliance programmes and industry-wide adoption of IT-based systems to support regulatory compliance.</li><li>• Continued progress has also been made in implementation of the risk-based approach for AML/CFT measures by MSB companies since January 2015.</li></ul>                                                                                                                                                                                                                                                                           |                          |                    |                          |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |
| 5. Improved efficiency and quality of service | <ul style="list-style-type: none"><li>• Average remittance cost reduced from 3.15% in 2012 to 2.85% in 2016, below the World Bank target of 5%.</li><li>• Positive results from a customer experience survey on MSB players conducted by the Bank in 2014, with notable improvements in the areas of overall image, service efficiency as well as information transparency and disclosures to customers.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                          |                    |                          |      |   |    |      |    |    |      |    |    |      |    |    |      |    |    |

## Moving Forward

The Bank will continue to work with the industry to further improve the efficiency of money services, promote conditions for an orderly currency exchange market especially during periods of heightened volatility, and encourage the use of authorised channels for money services. Specifically, future initiatives will focus on:

- **Enhancing take-up of the formal sector for remittances**

The Bank will continue to pursue efforts to increase the migration of remittances from informal to formal channels, particularly foreign worker remittances. A key strategy for this is the expansion of electronic remittance (e-remittance). This entails the delivery of end-to-end digital solutions to enable cashless and more convenient services to the users. Facilities for the payment of salaries of foreign workers through e-wallet or banking channels will also be developed to encourage e-remittance.

- **Encouraging the digitalisation of money services**

The Bank seeks to encourage the wider adoption of financial technology (FinTech) to enhance the convenience and efficiency of money services, thus further increasing the use of formal MSB channels. This will include providing an enabling environment for the digitalisation of MSB services using online and mobile channels to further lower costs and reduce the use of cash. The development of these channels also aims to overcome logistical barriers that currently discourage some segments of the foreign worker population from using authorised channels for remittances. The Bank is currently facilitating 2 companies seeking to provide digital MSB solutions through the Bank's Regulatory Sandbox. These include Peer-to-Peer (P2P) arrangements leveraging mobile application platforms that facilitate near real-time matching of customer transactions for currency exchange and money transfers.

The Bank is also undertaking a broader review of current regulations that require financial service providers including MSB companies to perform physical face-to-face customer verifications. The review aims to consider the use of biometric and other forms of digital customer identification methods to support digitalisation of money services, particularly for low risk transactions. This will take into account the feasibility of compensating arrangements needed to protect the integrity of MSB transactions, and global developments to promote consistency in AML/CFT regimes.

- **Enhancing approaches to surveillance, supervision and enforcement**

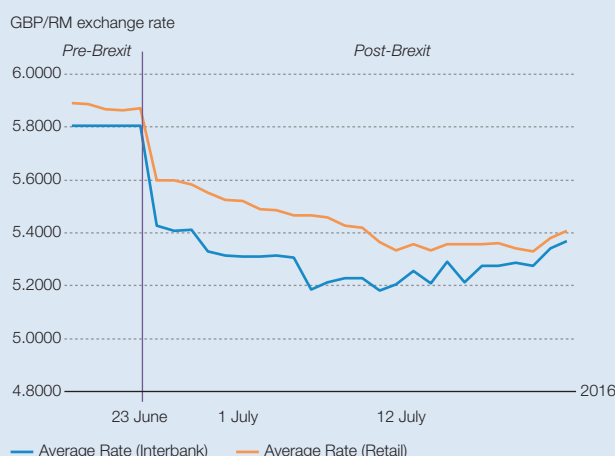
The Bank has rolled out an enhanced supervision and surveillance programme leveraging on data analytics to better support its identification and monitoring of risks in the industry. This will enable the Bank to perform more targeted supervision of licensed MSB companies and facilitate investigations into unauthorised activities. In addition, appropriate enhancements to the MSBA are being considered to improve the timeliness and effectiveness of enforcement actions against non-compliances and unauthorised MSB activities.

- **Facilitating efficient market arrangements for managing currency exposures**

The Bank will pursue initiatives to facilitate broader access by MSB companies to financial management solutions that will enable the industry to respond more effectively to changes in market conditions. This includes facilitating arrangements for MSB companies to hedge their currency exposures with banking institutions. The Bank will also review current arrangements between wholesalers and money changers for currency planning, sourcing and distribution to promote well-functioning market mechanisms at both the institution and industry levels for responding to demand for currencies and efficient pricing. This is particularly important during times of heightened volatility when market frictions can result in a misalignment between the retail and interbank exchange rates (as illustrated in Chart 2);

Chart 2

**Daily Movement of Retail Exchange Rate and Interbank Rate for GBP/RM Post-Brexit**



Source: Bank Negara Malaysia and Reuters



- **Intensifying education, awareness and professionalism**

The Bank in collaboration with MAMSB, will continue to maintain an aggressive education and awareness programme to encourage the use of authorised channels for money services and facilitate comparisons by consumers of MSB services, including for costs. The Bank and MAMSB will also consider an entrance examination for the industry players to ensure sufficient skills and knowledge. Continuous education for board members will be considered. The Bank will also seek to upscale the Project Greenback 2.0 to other cities across the country, in addition to undertaking nationwide awareness campaigns through traditional and social media and expanding collaborative partnerships with local councils, foreign embassies and regional and international bodies. This will be complemented by the wider use of aggregator applications to further improve transparency and convenient access to information on MSB services.

# Payment and Settlement Systems

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# Payment and Settlement Systems

## PROMOTING THE STABILITY OF PAYMENT AND SETTLEMENT SYSTEMS

### Oversight of RENTAS

The Real-time Electronic Transfer of Funds and Securities System (RENTAS) is a real-time gross settlement system that facilitates the transfer and settlement of high-value interbank payments and securities transactions. In 2016, RENTAS settled 4.4 million transactions valued at RM51.5 trillion, which was 41.9 times of Malaysia's gross domestic product (GDP). The daily average volume of transactions settled via RENTAS increased marginally to 18,013 transactions, while the daily average value of transactions was lower at RM208.7 billion (2015: 17,900 transactions, RM217.8 billion). The growth in the daily average volume had moderated over the last two years with an average growth of 0.7% per annum compared to an average of 8.7% per annum between 2011 and 2014. This mainly reflected a slower growth in third-party funds transfers via RENTAS (Chart 6.1), following the increasing use of lower cost retail payment systems, such as the

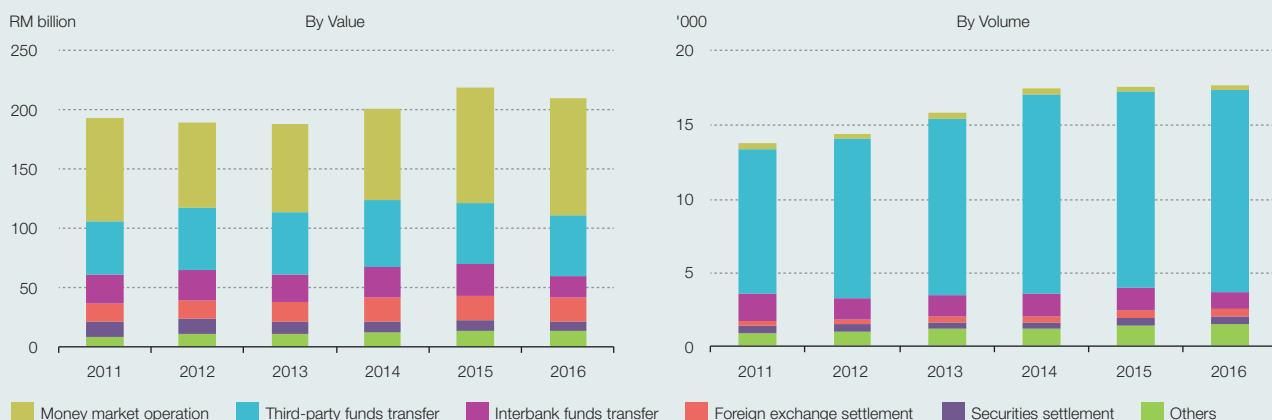
Interbank GIRO (IBG), for lower value transfers. Third-party funds transfers accounted for 77% of the daily average volume of RENTAS transactions.

Throughout the year, RENTAS remained resilient and maintained high system availability of 99.9%. This was achieved amid major planned enhancements to RENTAS undertaken during the year. The Bank has also commenced work to establish a third site to host Mini RENTAS, a smaller scale application of RENTAS, as an added measure to improve resilience against operational disruptions. The third site will serve as a second-level backup facility in the event that both the primary site and the disaster recovery centre are down simultaneously.

The implementation of the New RENTAS on 19 September 2016 completed another important phase in the Bank's continuing efforts to elevate the performance of RENTAS. The industry-wide collaboration project began in 2013 and involved 67 RENTAS participants. Key features introduced in the New RENTAS include: (i) multi-currency settlement functionalities to facilitate foreign currency settlements;

Chart 6.1

### RENTAS: Daily Average Transactions



(ii) the adoption of the Society for Worldwide Interbank Financial Telecommunication (SWIFT) messaging standards to improve operational efficiency; and  
(iii) a gridlock resolution mechanism to enable net settlement of pending transactions at specified intervals. Collectively, the enhancements augment the Bank's existing initiatives to improve risk management and cross-border payment services. The enhancements will also facilitate the integration of RENTAS with other regional financial market infrastructures in the future.

The Bank plans to conduct a detailed review of RENTAS in 2017 to affirm its continued compliance with the Principles for Financial Market Infrastructures (PFMI) following the enhancements that have been undertaken. The PFMI represents an international standard of high-level principles against which a country's systemically important payment and settlement system is benchmarked and assessed. RENTAS and its operator, Malaysian Electronic Clearing Corporation Sdn. Bhd. (MyClear) were assessed to have observed all the 19 applicable principles by the International Monetary Fund (IMF) and the World Bank under the Financial Sector Assessment Programme (FSAP) in 2012.

The effective management of cyber risks remains a key focus of the Bank amid the growing global threat of cyberattacks. In June 2016, the Committee on Payments and Market Infrastructures (CPMI) and the International Organisation of Securities Commissions (IOSCO) issued the Guidance on Cyber Resilience for Financial Market Infrastructures, while SWIFT published recommendations in March 2016 on the adoption of IT risk management and security controls to better protect banking infrastructures from being compromised. A comprehensive review of the payment system infrastructures and access channels against these standards was undertaken at the Bank's directive during the year, involving internal reviews by MyClear, Malaysian Electronic Payment System Sdn. Bhd. (MEPS) and their participants. Following the review, the industry has taken steps to further strengthen the current security controls.

## Oversight of retail payments

### ***eSPICK and major retail payment systems***

The retail payment systems<sup>1</sup> functioned smoothly during the year without any major disruptions to system operations. In 2016, all the retail payment systems, except

<sup>1</sup> The National Electronic Cheque Information Clearing System (eSPICK), Financial Process Exchange (FPX), the National Electronic Bill Payment Scheme (JomPAY), Direct Debit (DD), IBG and Instant Transfer (formerly known as the Interbank Fund Transfer or IBFT).

eSPICK and FPX, achieved system availability above the target level of 99.90%. The eSPICK and FPX achieved system availability of 99.85% and 99.89% respectively.

During the year, several technical configurations were implemented for FPX alongside a technology refresh exercise which was initiated to achieve longer term optimal system performance. Concurrently, a comprehensive review of the operational processes and IT infrastructure of eSPICK is also in progress. Both initiatives are expected to be completed by the end of 2017 and will contribute towards maintaining high system availability of these systems going forward.

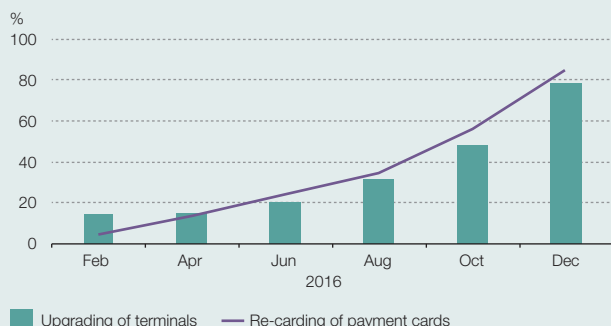
In line with the rapid increase in Instant Transfer transactions over the past four years which grew at an average annual rate of 90.4% in value and 71.9% in volume, further measures were taken to manage interbank credit risks arising from timing differences between the crediting of customers' accounts and interbank settlements. In March 2016, MEPS, the operator of Instant Transfer, introduced an additional settlement window, which significantly reduced the highest daily net debit exposures by 41.9% from RM261.8 million to RM152 million.

### ***Migration to Chip and PIN and Malaysian Chip Card Specification***

The industry is making notable progress in the implementation of a two-pronged approach in the enhancements to the payment card infrastructure in Malaysia. This involves: (i) migrating from signature to Personal Identification Number (PIN) verification (Chip and PIN), where cardholders enter a 6-digit PIN for payment card transactions conducted at point-of-sale (POS) terminals; and (ii) the Malaysian Chip Card Specification (MCCS) initiative to enhance the interoperability and efficiency of the domestic brand debit cards using the Europay-MasterCard-Visa (EMV) standard and contactless functionality.

The issuance of PIN-enabled payment cards to replace the existing signature-based payment cards and the upgrading of POS terminals commenced in July 2014 and August 2014 respectively. As at end-2016, 84.7% of payment cards had been replaced and 78.6% of POS terminals had been upgraded (Chart 6.2). The remaining payment cards and POS terminals, including the Outdoor Payment Terminals (OPTs) at self-service petrol stations, are expected to be replaced in the near term. In tandem

Chart 6.2

**Progress of Implementation of Chip and PIN**

Source: Bank Negara Malaysia

with these initiatives, the Chip and PIN liability shift rules have been implemented for domestic payment card transactions with effect from 1 January 2017. Under the new rules, liability for unauthorised transactions due to lost or stolen payment cards will be borne by issuers that have not replaced their payment cards or acquirers that have not upgraded their POS terminals.

Cardholders are given a six-month transition period starting from 1 January 2017 to familiarise themselves with PIN usage before PIN verification is made mandatory with effect from 1 July 2017. Supporting this transition period is an intensive public awareness and education initiative undertaken by the Bank and the banking industry to encourage the use of PIN prior to 1 July 2017.

**Payments fraud**

Fraud losses related to payment cards have remained relatively low since the migration to chip-based payment cards in 2005 (Chart 6.3). Total fraud losses declined further in 2016 to account for 0.019% and 0.034% of total transaction volume and value respectively (2015: 0.025%, 0.041%). The most common type of payment card fraud continued to be associated with unauthorised online transactions, accounting for 70% of total fraud cases and 58% of total fraud losses. Almost all (97%) of these losses were borne by entities located abroad which have yet to implement a strong authentication method. This is in line with the rules implemented by the operators of the international payment card networks which require the party with the weaker security measures to bear the losses arising from fraud. This has served to protect Malaysian cardholders due to the strong authentication method implemented in Malaysia since 2012, which requires cardholders to enter a one-time password to authorise any online transaction.

Chart 6.3

**Payment Card<sup>1</sup> Fraud Value and Volume, % of Total Transaction Value and Volume**<sup>1</sup> Payment card consists of credit card, debit card and charge card

Source: Bank Negara Malaysia

Following the migration to stronger security measures through PIN-enabled transactions, the Bank in December 2016 revised the requirements dealing with cardholders' liability for unauthorised transactions due to lost and stolen payment cards. Under the revised requirements, cardholders cannot be made liable for unauthorised transactions at POS terminals unless they have acted fraudulently or failed to take reasonable steps<sup>2</sup> to safeguard their payment cards and PIN, or delayed in notifying their payment card issuers upon discovering the loss or unauthorised use of their payment cards.

**Fraud losses related to the use of payment cards and online banking remained low in 2016, at 0.034% of total payment card transaction value and 0.0001% of total online banking transaction value respectively**

Online banking fraud cases in Malaysia remained negligible in 2016, amounting to 0.0003% and 0.0001% (2015: 0.0008%, 0.0002%) of total transaction volume

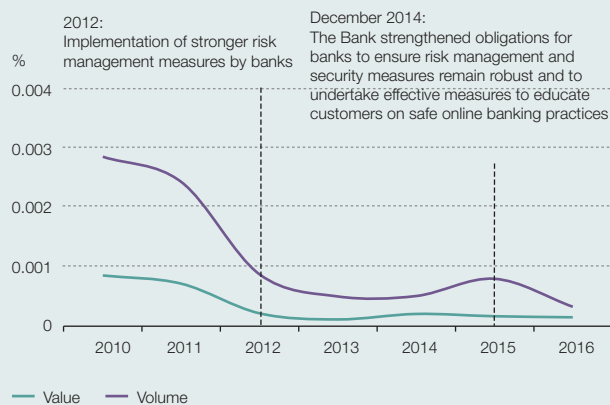
<sup>2</sup> Cardholders should safeguard their payment cards and PIN and should not:

- disclose the PIN to another person;
- record the PIN on the payment card or on anything kept in proximity with the payment card which could be lost or stolen with the payment card;
- leave the payment card or an item containing the payment card unattended, in places visible and accessible to others; or
- allow another person to use the payment card.

and value respectively (Chart 6.4). In particular, fraud cases for retail transactions maintained a notable downward trend, accounting for 0.0004% and 0.0016% of total retail transaction volume and value respectively (2015: 0.0011%, 0.0022%). Phishing, an act where fraudsters deceive online banking users into disclosing their confidential banking information (e.g. login ID and password) by posing as a regulatory authority or a bank over the phone or e-mail, remained the most prevalent *modus operandi*. Such cases accounted for 86.1% of total online banking fraud cases reported during the year. The number of cases however declined significantly from 3,089 cases in 2015 to 1,635 cases in 2016, with the Bank and the industry maintaining a heightened focus on educating the public on safe online banking practices.

Chart 6.4

#### Online Banking Fraud Value and Volume, % of Total Transaction Value and Volume



Source: Bank Negara Malaysia

## KEY TRENDS AND DEVELOPMENTS IN RETAIL PAYMENT SYSTEMS

Strategies for achieving the electronic payment (e-payment) targets set out in the Financial Sector Blueprint 2011-2020 continued to focus on enhancing payment infrastructures in order to achieve greater coverage, faster settlements and more efficient payment services. Efforts to displace cheques are mainly centred around promoting the use of credit transfer services, while the key strategy to displace cash is by encouraging the use of debit cards as a convenient alternative to cash (Diagram 6.1). The proliferation of mobile phones and mobile payment solutions also has significant potential to accelerate the migration to e-payments, especially among smaller traders that continue to transact mostly in cash.

The total number of e-payment transactions per capita grew at a higher rate of 18.1% in 2016, compared to the average growth rate of 14.0% over the past five years. During the year, Malaysians on average made 97 e-payment transactions per capita (Table 6.1), compared to 83 in 2015, driven primarily by an increase in credit transfers and payment card transactions. In parallel, the number of Internet banking subscribers recorded a growth of 15.3% to 22.8 million in 2016 (2015: 12.2%, 19.8 million), of which 46.8% were active subscribers (2015: 41.9%) with at least one transaction in a month. Mobile banking subscribers correspondingly grew by 22.9% to 8.9 million (2015: 29.1%, 7.3 million), of which 34.1% were active subscribers (2015: 21.3%).

Greater adoption of credit transfer services, debit cards and mobile payments will accelerate the displacement of cheques and cash

Table 6.1

#### Progress Made in Achieving the Financial Sector Blueprint Targets

| Payment indicators                             | 2011 | 2016 | 2020 Target |
|------------------------------------------------|------|------|-------------|
| E-payments per capita                          | 49   | 97   | 200         |
| Cheques cleared (million)                      | 205  | 133  | 100         |
| Payment card terminals (per 1,000 inhabitants) | 7    | 10   | 25          |
| Debit card transactions per capita             | 1    | 3    | 30          |

Source: Bank Negara Malaysia

## Increasing momentum in credit transfer transactions to displace cheques

Cheque usage recorded a decline of 10% to 133.1 million in 2016 (2015: -16.5%, 148 million) (Chart 6.5), with the decline observed across all main user categories (Table 6.2). This corresponded with the continued increase in credit transfers which gained further momentum with an annual growth of 31.2% to 256.9 million transactions in 2016 (2015: 39.8%, 195.8 million). The continued growth was partly due to the lower transaction costs and the provision of incentives for credit transfers, following the implementation of the pricing reform measures and the e-Payment Incentive Fund (ePIF) Framework in May 2013 and January 2015



Diagram 6.1

**Strategy to Accelerate Migration to e-Payments**

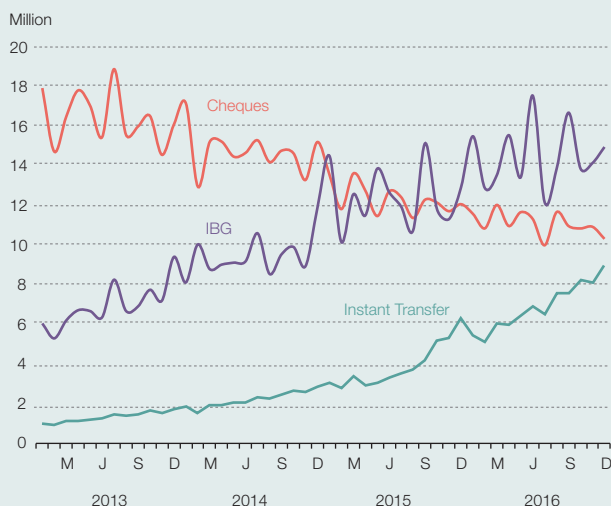
| Focus area                       | Displace cheques                                                                                                                                                                                                | Displace cash                                                                                                                                                  |                                                                                                                                                                                                                                |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                  | Credit transfer <sup>1</sup><br>(accessible to 99% of CASA <sup>2</sup> )                                                                                                                                       | Debit card<br>(43.7 million debit cards in circulation) <sup>3</sup>                                                                                           | Mobile payments<br>(43.9 million mobile phone subscriptions) <sup>3</sup>                                                                                                                                                      |
| 1. Price signal                  | <ul style="list-style-type: none"> <li>• IBG (maximum fee of 10 sen)</li> <li>• Instant Transfer (maximum fee of 50 sen)</li> </ul>                                                                             | <ul style="list-style-type: none"> <li>• Ceilings for interchange fee<sup>4</sup></li> <li>• Unbundling of Merchant Discount Rate (MDR)<sup>5</sup></li> </ul> | <ul style="list-style-type: none"> <li>• Efforts are directed towards promoting open and fair access to shared payment infrastructure, standardisation and interoperability to enhance the mobile payment ecosystem</li> </ul> |
| 2. Quality and value proposition | <ul style="list-style-type: none"> <li>• Faster crediting time for IBG</li> <li>• Payment details in bank statement</li> </ul>                                                                                  | <ul style="list-style-type: none"> <li>• Contactless feature</li> </ul>                                                                                        |                                                                                                                                                                                                                                |
| 3. Access points                 | <ul style="list-style-type: none"> <li>• Online banking and ATM</li> </ul>                                                                                                                                      | <ul style="list-style-type: none"> <li>• 800,000 POS terminals by 2020</li> </ul>                                                                              |                                                                                                                                                                                                                                |
| 4. Market incentive structure    | <ul style="list-style-type: none"> <li>• E-Payment Incentive Fund (ePIF)<sup>6</sup></li> </ul>                                                                                                                 | <ul style="list-style-type: none"> <li>• Market Development Fund (MDF)<sup>7</sup></li> </ul>                                                                  |                                                                                                                                                                                                                                |
| 5. Awareness and confidence      | <ul style="list-style-type: none"> <li>• Roadshows and workshops</li> <li>• Media engagements</li> <li>• Strengthening security requirements</li> <li>• Enhancing consumer protection and safeguards</li> </ul> |                                                                                                                                                                |                                                                                                                                                                                                                                |

<sup>1</sup> Credit transfers comprise IBG and Instant Transfer<sup>2</sup> Current and savings accounts<sup>3</sup> Covering a population of 31.7 million individuals in Malaysia<sup>4</sup> Interchange fee is a fee payable by an acquirer to an issuer in a payment card transaction. Interchange fee is priced into the MDR charged by an acquirer to a merchant<sup>5</sup> MDR is a fee paid by a merchant to an acquirer for facilitating a payment card transaction. Acquirers are required to charge differentiated MDRs that reflect the cost structure of different payment card types<sup>6</sup> The ePIF Framework was introduced in 2015 to require banks to channel part of the cheque processing fees collected towards providing incentives for customers to migrate to e-payments<sup>7</sup> The MDF was established by two major payment card schemes in 2015, which is expected to channel approximately RM455 million in funds from interchange fees towards expanding the POS terminal network over the period from July 2015 to 2020

Source: Bank Negara Malaysia, Department of Statistics, Malaysia and Malaysian Communication and Multimedia Commission

respectively. While IBG accounted for a larger share of total transaction volume for credit transfers at 67.8%, Instant Transfer has become increasingly popular with an increased share from 23.8% in 2015 to 32.2%

Chart 6.5

**Transaction Volume for Cheques, IBG and Instant Transfer**

Source: Bank Negara Malaysia

in 2016. This is mainly attributable to the features of Instant Transfer that provide real-time funds transfers and confirmation of beneficiary name prior to executing the transfer.

Instant Transfer has become increasingly popular with an increased share at 32% of total transaction volume for credit transfers in 2016

Table 6.2

**Cheque Usage by Main User Categories**

| Main user categories<br>(Share of total volume in 2016) | Average rate of decline per annum |           |
|---------------------------------------------------------|-----------------------------------|-----------|
|                                                         | 2011-2013                         | 2014-2016 |
| Corporates (46%)                                        | 0.6%                              | 9.3%      |
| Individuals (18%)                                       | 0.3%                              | 16.9%     |
| Sole proprietorships and partnerships (25%)             | 1.7%                              | 12.4%     |
| Government agencies (2%)                                | 3.6%                              | 14.5%     |

Source: Bank Negara Malaysia

## Encouraging trend in electronic bill payments

The adoption of electronic channels (e-channels) for bill payments continued to accelerate in 2016, with total bill payment transactions conducted via online banking, mobile banking and Automated Teller Machines (ATMs) increasing by 41.5% to 116 million transactions (2015: 20.0%, 82 million). Notably, bill payment transactions performed via mobile banking grew more than twofold to 11.7 million transactions during the year (2015: 23.8%, 5.1 million), indicating the increasing appeal of mobile banking as a convenient channel for bill payments. The national open electronic bill payment platform, JomPAY, recorded 3.9 million transactions valued at RM2.8 billion in 2016 (2015: 0.3 million, RM0.1 billion). The number of billers registered with JomPAY more than doubled from 472 billers in 2015 to 1,105 billers in 2016, enabling the public to make online payments to more billers from any banking account.

## Higher usage of payment cards to displace cash

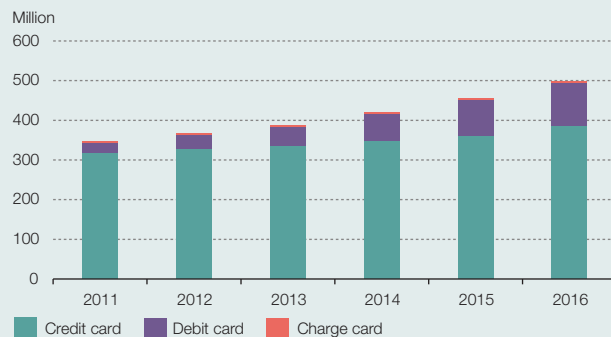
Payment card<sup>3</sup> usage continued to increase in 2016, recording a growth of 9.2% and 6.5% in terms of transaction volume and value respectively, to 495.4 million transactions valued at RM150.8 billion (2015: 453.9 million, RM141.6 billion) (Chart 6.6). Credit cards remained the most widely used payment card, accounting for 77% of the total transaction volume. Of note, the share of debit card transactions has increased in recent years, contributed largely by the expansion in the number of POS terminals facilitated by the lower and more transparent fee structures introduced under the

Payment Card Reform Framework (PCRF) which was implemented by the Bank in 2015. The consequent decline in the average Merchant Discount Rates (MDR) for accepting debit cards by as much as 28% for the domestic brand debit card network and 25% for the international brand debit card networks is expected to make debit card acceptance more affordable to merchants and further increase debit card usage going forward. More convenient card payments using contactless cards have also added to higher payment card transactions recorded during the year. This was supported by the continued expansion of contactless POS terminals, which increased almost sevenfold from 4,839 terminals in 2015 to 33,721 in 2016.

Despite the increasing usage of payment cards, cash usage remains relatively high, reflecting the continued prevalent use of cash as a medium of payment in Malaysia (Chart 6.7). The ratio of cash-in-circulation (CIC) to GDP increased steadily, from 5.9% in 2011 to 7.0% in 2016. While the ratio of ATM cash withdrawals to debit card transactions has been on a declining trend since 2011, it remained relatively high at seven ATM cash withdrawals for every one debit card transaction in 2016 (Chart 6.8). This ratio does not take into account cardholders who also use credit cards as a means of payment and settle their outstanding balances in full by the payment due date. In addition to measures noted earlier to encourage wider use of debit cards for payments, the growing awareness and promotions by banks to encourage the usage of debit cards through industry-wide debit card campaigns and nationwide roadshow events are likely to accelerate the displacement of cash.

Chart 6.6

### Payment Card Transaction Volume by Card Type

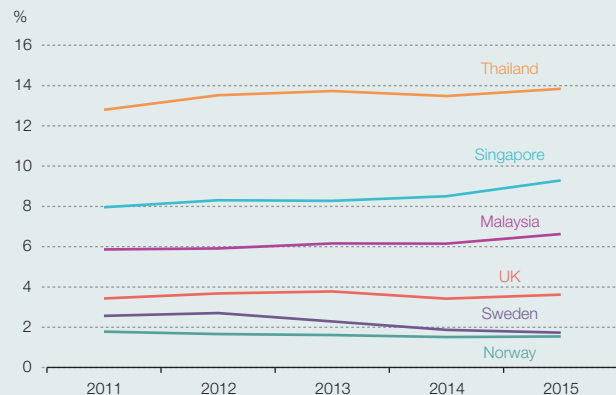


Source: Bank Negara Malaysia

<sup>3</sup> Payment cards comprise the debit card, credit card and charge card.

Chart 6.7

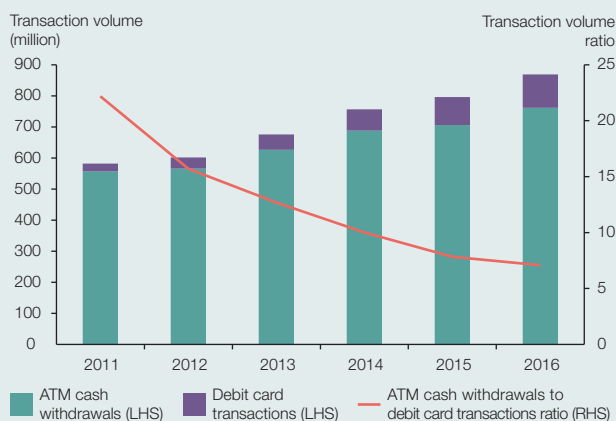
### Country Comparison of CIC-to-GDP Ratio



Source: Bank Negara Malaysia, European Central Bank Statistical Data Warehouse, Norges Bank and Bank for International Settlements

Chart 6.8

### ATM Cash Withdrawals and Debit Card Transactions



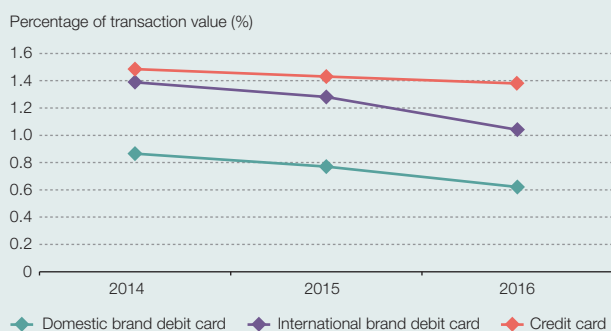
Source: Bank Negara Malaysia

### Expansion of payment card acceptance points

The introduction of interchange fee ceilings and improved transparency in the payment card acceptance costs to merchants under the PCRF have resulted in a continued decline of the average MDR for debit and credit cards (Chart 6.9). Under the PCRF, the merchants are also empowered to route their debit card transactions via their preferred debit card network. This has led to an increase in competition among debit card networks. As a result, major international brand debit card networks lowered their scheme fees during the year, which in turn resulted in the lowering of the MDR charged to merchants. Combined cost savings to merchants from lower MDR for debit and credit cards were estimated at RM168 million in 2016. The lower MDR coupled with the establishment of the

Chart 6.9

### Average MDR by Type of Payment Card Transactions



Source: Bank Negara Malaysia

Market Development Fund (MDF) in 2015 have spurred the expansion of POS terminals, which grew at a double digit rate of 19.6% in 2015 and 17.5% in 2016 (2011-2014: average of 6.5% per annum). In 2016, the number of POS terminals increased to 323,033 terminals or 10 terminals per 1,000 inhabitants (2015: 274,986 terminals, 9 terminals per 1,000 inhabitants).

### Fostering an enabling environment for mobile payments

Mobile payments have significant potential to reduce the use of cash, with 43.9 million mobile phone subscriptions covering a population of 31.7 million individuals in Malaysia. It also complements initiatives to promote financial inclusion. The growth in financial transactions conducted via the mobile banking channel increased almost threefold from 35.6% in 2015 to 98.0% in 2016, representing 62.6 million transactions valued at RM33 billion (2015: 31.6 million transactions, RM20.6 billion).

The Bank will continue to foster an enabling environment for the wider adoption of mobile payments. This includes promoting interoperability through shared and open infrastructures to expand the payment network reach, lower payment costs and encourage innovation of value-added services. One of the main strategic priorities of the Bank in 2017 is to foster collaboration and interoperability among different mobile payment schemes leveraging on a common infrastructure for switching, clearing and settlement. This will be augmented by efforts to develop a central addressing database to facilitate payments to be made more convenient using common identifiers such as mobile numbers and National Registration Identity Card (NRIC) numbers. To promote a level playing field in the payment ecosystem, the Bank will facilitate open and fair access to shared payment infrastructures by banks and non-bank payment service providers, with proportionate regulation. This is expected to create a more vibrant and innovative payment landscape that fosters continuous improvements in payment services to keep pace with emerging technological changes and shifting user demands.

### Fostering awareness and confidence in e-payments

The Bank continues to work closely with the banking industry to increase awareness and promote confidence among consumers and businesses in using cost-effective e-payment services.

During the year, the National e-Payment Roadshow (Roadshow) events were held in 20 towns across nine states in collaboration with the banking associations and the National Cards Group. The Roadshow, which was attended mainly by small and medium enterprises (SMEs) and micro-enterprises, served as a platform to promote the use of payment cards, electronic funds transfers and online banking services, as well as to educate the participants on safe practices in performing e-payment transactions. Selected bank branches also offered various incentives under township campaigns that were held in conjunction with the Roadshow, such as lower MDR and free rental for POS terminals to businesses that signed up for acceptance of payment cards.

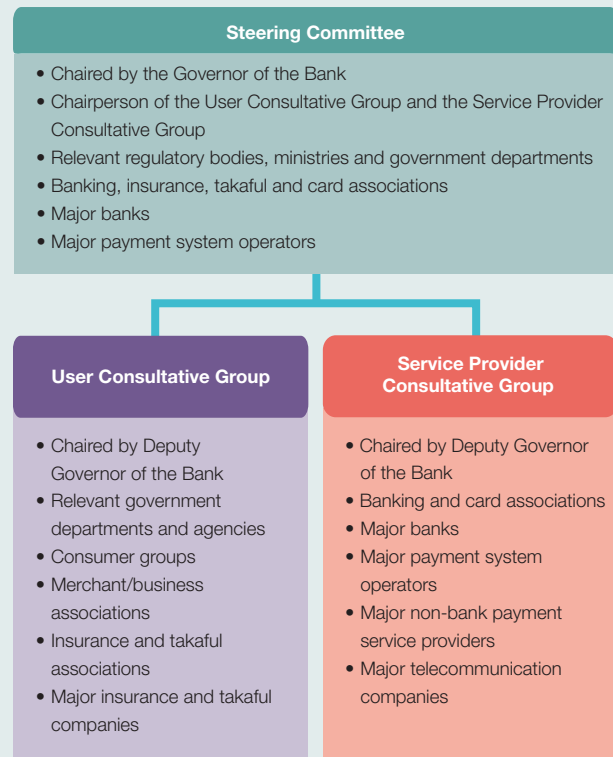
### Transformation of the National Payments Advisory Council

The Bank established the National Payments Advisory Council (NPAC) in 2001 as a reference and advisory body to provide market inputs on matters relating to the payment systems in Malaysia. The NPAC is chaired by the Governor of the Bank and its members comprise senior representatives from selected regulatory bodies, ministries and government departments, banking, insurance, takaful and card associations, major banks and major payment system operators in Malaysia.

In anticipation of the rapidly changing payment landscape and the need to future-proof the payment infrastructures, changes were introduced during the year to enhance the structure and functioning of the NPAC as a strategy setting and industry coordination body (Diagram 6.2). Two Consultative Groups, namely the User Consultative Group (UCG) and the Service Provider Consultative Group (SPCG), representing both the demand and supply sides of the payment ecosystem respectively, were established. The UCG and SPCG provide a structured and more inclusive platform to solicit feedback and proposals from both the end-users and the payment service providers to enhance the payment systems. These inputs form the basis of recommendations and resolutions proposed to the Steering Committee of the NPAC on strategic and tactical priorities for the development of Malaysia's payment landscape.

Diagram 6.2

#### Composition of the Transformed NPAC



Source: Bank Negara Malaysia

### REGIONAL CO-OPERATION IN PAYMENT SYSTEMS

In April 2016, the Association of Southeast Asian Nations (ASEAN) Finance Ministers and Central Bank Governors endorsed a Strategic Action Plan (SAP) for ASEAN Financial Integration 2025. The SAP covers a 10-year framework that builds on the existing ASEAN Economic Community (AEC) Blueprint. The Bank, through the ASEAN Working Committee on Payment and Settlement Systems (WCPSS), will contribute to and support the initiatives identified under the SAP to foster an ASEAN payment system that is safe, innovative, competitive, efficient and cost-effective. The Bank is also a member of the study group established during the year under the Working Group on Payment and Settlement Systems (WGPSS) of the Executives' Meeting of East Asia-Pacific Central Banks (EMEAP) to examine the impact of financial technology (FinTech) on payment and settlement systems, including its implications for its member central banks.

Annex





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Table A.1

**Key Financial Soundness Indicators**

|                                                                                       | As at end               |         |         |         |                   |
|---------------------------------------------------------------------------------------|-------------------------|---------|---------|---------|-------------------|
|                                                                                       | 2012                    | 2013    | 2014    | 2015    | 2016 <sup>p</sup> |
|                                                                                       | % (or otherwise stated) |         |         |         |                   |
| <b>Banking System</b>                                                                 |                         |         |         |         |                   |
| Risk-Weighted Capital Ratio                                                           | 15.7                    | -       | -       | -       | -                 |
| Core Capital Ratio                                                                    | 13.9                    | -       | -       | -       | -                 |
| Total Capital Ratio <sup>1</sup>                                                      | -                       | 14.9    | 15.9    | 16.6    | 16.5              |
| Tier 1 Capital Ratio <sup>1</sup>                                                     | -                       | 13.5    | 14.0    | 14.2    | 14.0              |
| Common Equity Tier 1 Capital Ratio <sup>1</sup>                                       | -                       | 12.6    | 13.3    | 13.3    | 13.1              |
| Return on Assets                                                                      | 1.6                     | 1.5     | 1.5     | 1.3     | 1.3               |
| Return on Equity                                                                      | 17.4                    | 15.9    | 15.2    | 12.3    | 12.5              |
| Liquid Assets to Total Assets <sup>2</sup>                                            | 13.8                    | 11.6    | 13.3    | -       | -                 |
| Liquid Assets to Short-term Liabilities <sup>2</sup>                                  | 42.5                    | 36.5    | 42.6    | -       | -                 |
| Liquidity Coverage Ratio <sup>3</sup>                                                 | -                       | -       | -       | 127.4   | 124.8             |
| Net Impaired Loans Ratio                                                              | 1.4                     | 1.3     | 1.2     | 1.2     | 1.2               |
| Capital Charge on Interest Rate Risk in the Trading Book to Capital Base <sup>1</sup> | 1.7                     | 1.5     | 1.4     | 1.2     | 1.1               |
| Net Open Position in FCY to Capital Base <sup>1</sup>                                 | 6.1                     | 5.7     | 4.7     | 6.1     | 6.3               |
| Equity Holdings to Capital Base <sup>1</sup>                                          | 0.6                     | 0.8     | 1.3     | 0.7     | 0.8               |
| <b>Insurance and Takaful Sector</b>                                                   |                         |         |         |         |                   |
| Capital Adequacy Ratio (conventional only)                                            | 219.1                   | 246.1   | 251.9   | 251.6   | 248.5             |
| Life Insurance and Family Takaful                                                     |                         |         |         |         |                   |
| Excess Income over Outgo (RM billion)                                                 | 17.9                    | 13.2    | 13.8    | 12.0    | 13.3              |
| New Business Premiums / Contributions (RM billion)                                    | 12.0                    | 12.1    | 12.9    | 13.2    | 14.2              |
| Capital Adequacy Ratio (conventional only)                                            | 242.3                   | 260.9   | 259.2   | 260.6   | 243.7             |
| General Insurance and General Takaful                                                 |                         |         |         |         |                   |
| Underwriting Profit (RM billion)                                                      | 1.7                     | 1.8     | 1.8     | 1.3     | 1.8               |
| Operating Profit (RM billion)                                                         | 2.9                     | 3.2     | 3.2     | 2.7     | 3.4               |
| Gross Direct Premiums / Contributions (RM billion)                                    | 16.6                    | 17.8    | 19.1    | 19.5    | 19.7              |
| Claims Ratio                                                                          | 57.3                    | 57.1    | 57.5    | 60.2    | 56.0              |
| Capital Adequacy Ratio (conventional only)                                            | 227.7                   | 231.7   | 279.7   | 263.3   | 269.6             |
| <b>Household (HH) Sector</b>                                                          |                         |         |         |         |                   |
| HH Debt (RM billion)                                                                  | 782.3                   | 877.6   | 960.2   | 1,030.6 | 1,086.2           |
| HH Financial Asset (RM billion)                                                       | 1,712.3                 | 1,904.9 | 2,015.0 | 2,116.1 | 2,229.5           |
| HH Debt-to-GDP Ratio                                                                  | 80.5                    | 86.2    | 86.8    | 89.1    | 88.4              |
| HH Financial Asset to Total HH Debt Ratio                                             | 218.9                   | 217.1   | 209.9   | 205.3   | 205.3             |
| HH Liquid Financial Asset to Total HH Debt Ratio                                      | 156.3                   | 155.7   | 147.5   | 142.0   | 140.4             |
| Impaired Loans Ratio of HH Sector (Banking System)                                    | 1.5                     | 1.3     | 1.2     | 1.1     | 1.1               |
| <b>Business Sector</b>                                                                |                         |         |         |         |                   |
| Return on Assets                                                                      | 6.4                     | 6.4     | 6.0     | 4.9     | 3.5*              |
| Return on Equity                                                                      | 11.6                    | 11.3    | 10.2    | 8.8     | 6.0*              |
| Debt-to-Equity Ratio                                                                  | 37.7                    | 39.1    | 39.2    | 43.2    | 43.6*             |
| Interest Coverage Ratio (times)                                                       | 10.6                    | 13.1    | 12.0    | 10.6    | 9.4*              |
| Operating Margin                                                                      | 16.5                    | 16.1    | 15.9    | 14.8    | 10.1*             |
| Impaired Loans Ratio of Business Sector                                               | 3.0                     | 2.8     | 2.6     | 2.5     | 2.4               |
| <b>Development Financial Institutions<sup>4</sup></b>                                 |                         |         |         |         |                   |
| Lending to Targeted Sectors (% change)                                                | 10.1                    | 8.1     | 7.0     | 5.5     | 5.7               |
| Deposits Mobilised (% change)                                                         | 7.1                     | 7.2     | 5.3     | 2.0     | 6.4               |
| Impaired Loans Ratio                                                                  | 6.3                     | 5.6     | 5.0     | 4.8     | 5.5               |
| Return on Assets                                                                      | 2.4                     | 2.2     | 1.6     | 1.4     | 1.3               |

<sup>1</sup> Beginning January 2013, capital components are reported based on Basel III Capital Adequacy Framework<sup>2</sup> Beginning January 2012, the computation of liquid assets excludes interbank deposits<sup>3</sup> The Basel III Liquidity Coverage Ratio (LCR) Framework takes effect on 1 June 2015 and supersedes the guidelines on Liquidity Framework and Liquidity Framework-i issued on 1 July 1998<sup>4</sup> Refers to development financial institutions under the Development Financial Institutions Act 2002<sup>p</sup> Preliminary

\* Based on data from January to September 2016

Note : Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia, Securities Commission Malaysia, Bursa Malaysia, Bloomberg, Department of Statistics Malaysia and internal computation

Table A.2

**Key Financial Indicators - Islamic Banking and Takaful Sectors**

|                                                                                     | As at end                        |           |           |           |                   |
|-------------------------------------------------------------------------------------|----------------------------------|-----------|-----------|-----------|-------------------|
|                                                                                     | 2012                             | 2013      | 2014      | 2015      | 2016 <sup>p</sup> |
| <b>Islamic Banking System</b>                                                       | RM million (or otherwise stated) |           |           |           |                   |
| Total assets <sup>1,2</sup>                                                         | 494,705.2                        | 558,295.0 | 615,190.0 | 684,906.2 | 741,964.8         |
| % of total assets of entire banking system <sup>1,2</sup>                           | 23.8                             | 25.0      | 25.5      | 26.8      | 28.0              |
| Total financing <sup>1,2</sup>                                                      | 314,973.3                        | 370,673.8 | 427,887.8 | 495,005.9 | 549,503.9         |
| % of total loans / financing of entire banking system <sup>1,2</sup>                | 25.8                             | 27.5      | 29.2      | 31.3      | 33.0              |
| Total deposits and investment accounts <sup>1,3</sup>                               | -                                | -         | -         | 550,275.1 | 602,204.1         |
| Total deposits                                                                      | 386,196.8                        | 436,327.6 | 494,738.3 | 503,127.8 | 528,527.1         |
| Total investment accounts                                                           | -                                | -         | -         | 47,147.3  | 73,677.1          |
| % of total deposits and investment accounts of entire banking system <sup>1,3</sup> | 25.6                             | 26.7      | 28.2      | 30.0      | 31.8              |
|                                                                                     | %                                |           |           |           |                   |
| Risk-Weighted Capital Ratio                                                         | 14.5                             | -         | -         | -         | -                 |
| Core Capital Ratio                                                                  | 12.0                             | -         | -         | -         | -                 |
| Total Capital Ratio <sup>4</sup>                                                    | -                                | 15.1      | 16.2      | 16.1      | 16.6              |
| Tier 1 Capital Ratio <sup>4</sup>                                                   | -                                | 12.8      | 12.9      | 12.3      | 13.0              |
| Common Equity Tier 1 Capital Ratio <sup>4</sup>                                     | -                                | 12.8      | 12.8      | 12.3      | 13.0              |
| Return on Assets                                                                    | 1.3                              | 1.2       | 1.1       | 1.0       | 1.0               |
| Net Impaired Financing Ratio                                                        | 1.2                              | 1.0       | 0.9       | 0.9       | 1.0               |
| <b>Takaful Sector</b>                                                               | RM million (or otherwise stated) |           |           |           |                   |
| Takaful Fund Assets                                                                 | 19,045.6                         | 20,934.2  | 22,746.3  | 24,711.0  | 26,870.8          |
| Family                                                                              | 16,289.8                         | 17,952.2  | 19,619.3  | 21,389.1  | 23,278.8          |
| General                                                                             | 2,755.9                          | 2,982.0   | 3,127.0   | 3,321.9   | 3,592.0           |
| % of insurance and takaful industry                                                 | 9.0                              | 9.2       | 9.4       | 9.7       | 10.0              |
| Net Contributions Income                                                            | 5,887.8                          | 6,207.9   | 6,330.6   | 6,815.6   | 7,532.7           |
| Family                                                                              | 4,574.8                          | 4,807.4   | 4,787.2   | 5,104.3   | 5,742.0           |
| General                                                                             | 1,313.0                          | 1,400.5   | 1,543.4   | 1,711.3   | 1,790.7           |
| % of insurance and takaful industry                                                 | 14.3                             | 14.1      | 13.4      | 13.8      | 14.6              |
| Family Takaful                                                                      |                                  |           |           |           |                   |
| New Business Contributions                                                          | 3,474.5                          | 3,563.5   | 3,500.3   | 3,638.4   | 3,951.1           |
| General Takaful                                                                     |                                  |           |           |           |                   |
| Gross Direct Contributions                                                          | 1,737.6                          | 1,908.8   | 2,163.7   | 2,295.9   | 2,401.7           |
| Claims Ratio (%)                                                                    | 56.9                             | 53.6      | 47.8      | 51.9      | 49.0              |

<sup>1</sup> Including development financial institutions under the Development Financial Institutions Act 2002

<sup>2</sup> Beginning 1 July 2015, includes assets / financing funded by investment accounts which are recognised on and off-balance sheet

<sup>3</sup> Beginning 1 July 2015, Islamic deposits and investment accounts are required to be designated separately. Investment account figures include those which are recognised on and off-balance sheet

<sup>4</sup> Beginning January 2013, capital components are reported based on Basel III Capital Adequacy Framework

<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.3

**Banking System<sup>1</sup>: Income and Expenditure**

|                                                        | For the calendar year            |                 |                 |                 |                   |
|--------------------------------------------------------|----------------------------------|-----------------|-----------------|-----------------|-------------------|
|                                                        | 2012                             | 2013            | 2014            | 2015            | 2016 <sup>p</sup> |
|                                                        | RM million (or otherwise stated) |                 |                 |                 |                   |
| Interest income                                        | 83,760.1                         | 83,079.3        | 89,416.7        | 96,784.6        | 100,188.1         |
| Less: Interest expense                                 | 46,292.9                         | 43,621.4        | 47,911.5        | 54,612.9        | 57,217.1          |
| Net interest income                                    | 37,467.3                         | 39,457.8        | 41,505.1        | 42,171.8        | 42,971.0          |
| Add: Fee-based income                                  | 9,125.5                          | 9,617.6         | 10,103.0        | 9,682.7         | 9,377.5           |
| Less: Staff cost                                       | 13,810.3                         | 13,561.5        | 13,628.7        | 15,206.3        | 14,295.6          |
| Overheads                                              | 12,666.5                         | 13,383.7        | 14,171.8        | 15,229.4        | 15,155.5          |
| Gross operating profit                                 | 20,116.0                         | 22,130.2        | 23,807.6        | 21,418.8        | 22,897.3          |
| Less: Impairment <sup>2</sup> and other provisions     | 1,501.9                          | 2,427.1         | 1,472.0         | 2,883.7         | 2,689.3           |
| Gross operating profit after provision                 | 18,614.1                         | 19,703.1        | 22,335.6        | 18,535.1        | 20,208.0          |
| Add: Other income                                      | 10,604.9                         | 10,054.5        | 9,593.3         | 10,460.8        | 12,013.1          |
| <b>Pre-tax profit</b>                                  | <b>29,219.0</b>                  | <b>29,757.6</b> | <b>31,928.9</b> | <b>28,995.9</b> | <b>32,221.2</b>   |
| Pre-tax profit / Average assets (%)                    | 1.6                              | 1.5             | 1.5             | 1.3             | 1.3               |
| Pre-tax profit / Average shareholders' funds (%)       | 17.4                             | 15.9            | 15.2            | 12.3            | 12.5              |
| Pre-tax profit / Average employee (RM'000)             | 231.9                            | 236.2           | 255.0           | 237.1           | 272.7             |
| Cost incurred per ringgit of revenue earned (sen)      | 46.3                             | 45.6            | 45.4            | 48.8            | 45.8              |
| Cost incurred per ringgit of net interest income (sen) | 70.7                             | 68.3            | 67.0            | 72.2            | 68.5              |
| Overheads to staff cost (%)                            | 91.7                             | 98.7            | 104.0           | 100.2           | 106.0             |
| Staff cost per employee (RM'000)                       | 108.8                            | 108.4           | 108.8           | 127.5           | 122.1             |

<sup>1</sup> Includes Islamic banks<sup>2</sup> Refers to individual and collective impairment provisions in accordance with the Policy Document on Classification and Impairment Provisions for Loans / Financing<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.4

**Commercial Banks<sup>1</sup>: Income and Expenditure**

|                                                        | For the calendar year            |                 |                 |                 |                   |
|--------------------------------------------------------|----------------------------------|-----------------|-----------------|-----------------|-------------------|
|                                                        | 2012                             | 2013            | 2014            | 2015            | 2016 <sup>p</sup> |
|                                                        | RM million (or otherwise stated) |                 |                 |                 |                   |
| Interest income                                        | 81,931.8                         | 81,085.9        | 87,707.9        | 95,028.2        | 98,571.6          |
| Less: Interest expense                                 | 44,943.9                         | 42,165.1        | 46,598.7        | 53,348.2        | 56,132.6          |
| Net interest income                                    | 36,988.0                         | 38,920.9        | 41,109.2        | 41,680.0        | 42,439.0          |
| Add: Fee-based income                                  | 7,620.1                          | 7,874.4         | 8,179.1         | 8,076.6         | 8,065.3           |
| Less: Staff cost                                       | 12,789.4                         | 12,399.9        | 12,488.5        | 14,071.0        | 13,255.1          |
| Overheads                                              | 12,031.4                         | 12,571.6        | 13,232.2        | 14,394.9        | 14,481.0          |
| Gross operating profit                                 | 19,787.3                         | 21,823.8        | 23,567.5        | 21,290.7        | 22,768.2          |
| Less: Impairment <sup>2</sup> and other provisions     | 1,509.0                          | 2,467.4         | 1,487.0         | 2,925.7         | 2,675.7           |
| Gross operating profit after provision                 | 18,278.3                         | 19,356.4        | 22,080.5        | 18,365.0        | 20,092.5          |
| Add: Other income                                      | 9,920.3                          | 9,409.3         | 8,675.3         | 9,898.3         | 11,358.7          |
| <b>Pre-tax profit</b>                                  | <b>28,198.5</b>                  | <b>28,765.7</b> | <b>30,755.8</b> | <b>28,263.3</b> | <b>31,451.2</b>   |
| Pre-tax profit / Average assets (%)                    | 1.6                              | 1.5             | 1.5             | 1.3             | 1.3               |
| Pre-tax profit / Average shareholders' funds (%)       | 17.4                             | 16.0            | 15.4            | 12.6            | 12.7              |
| Pre-tax profit / Average employee (RM'000)             | 242.3                            | 246.3           | 264.6           | 249.2           | 286.2             |
| Cost incurred per ringgit of revenue earned (sen)      | 45.5                             | 44.4            | 44.4            | 47.7            | 44.8              |
| Cost incurred per ringgit of net interest income (sen) | 67.1                             | 64.2            | 62.6            | 68.3            | 65.4              |
| Overheads to staff cost (%)                            | 94.1                             | 101.4           | 106.0           | 102.3           | 109.2             |
| Staff cost per employee (RM'000)                       | 109.0                            | 106.7           | 107.5           | 127.2           | 121.4             |

<sup>1</sup> Includes Islamic banks<sup>2</sup> Refers to individual and collective impairment provisions in accordance with the Policy Document on Classification and Impairment Provisions for Loans / Financing<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.5

**Investment Banks: Income and Expenditure**

|                                                        | For the calendar year            |              |                |              |                   |
|--------------------------------------------------------|----------------------------------|--------------|----------------|--------------|-------------------|
|                                                        | 2012                             | 2013         | 2014           | 2015         | 2016 <sup>p</sup> |
|                                                        | RM million (or otherwise stated) |              |                |              |                   |
| Interest income                                        | 1,828.3                          | 1,993.3      | 1,708.8        | 1,756.4      | 1,616.6           |
| Less: Interest expense                                 | 1,349.0                          | 1,456.4      | 1,312.8        | 1,264.6      | 1,084.5           |
| Net interest income                                    | 479.3                            | 536.9        | 396.0          | 491.8        | 532.1             |
| Add: Fee-based income                                  | 1,505.4                          | 1,743.2      | 1,923.9        | 1,606.1      | 1,312.2           |
| Less: Staff cost                                       | 1,020.9                          | 1,161.5      | 1,140.1        | 1,135.3      | 1,040.5           |
| Overheads                                              | 635.1                            | 812.2        | 939.6          | 834.5        | 674.5             |
| Gross operating profit                                 | 328.7                            | 306.4        | 240.1          | 128.1        | 129.1             |
| Less: Impairment <sup>1</sup> and other provisions     | -7.1                             | -40.4        | -15.0          | -42.0        | 13.6              |
| Gross operating profit after provision                 | 335.8                            | 346.8        | 255.1          | 170.1        | 115.5             |
| Add: Other income                                      | 684.6                            | 645.2        | 918.0          | 562.5        | 654.4             |
| <b>Pre-tax profit</b>                                  | <b>1,020.4</b>                   | <b>991.9</b> | <b>1,173.1</b> | <b>732.6</b> | <b>770.0</b>      |
| Pre-tax profit / Average assets (%)                    | 1.6                              | 1.7          | 2.1            | 1.4          | 1.5               |
| Pre-tax profit / Average shareholders' funds (%)       | 11.5                             | 10.6         | 11.4           | 6.9          | 7.2               |
| Pre-tax profit / Average employee (RM'000)             | 108.4                            | 107.7        | 130.8          | 82.7         | 93.0              |
| Cost incurred per ringgit of revenue earned (sen)      | 62.0                             | 67.5         | 64.2           | 74.0         | 68.6              |
| Cost incurred per ringgit of net interest income (sen) | 345.5                            | 367.6        | 525.2          | 400.6        | 322.4             |
| Overheads to staff cost (%)                            | 62.2                             | 69.9         | 82.4           | 73.5         | 64.8              |
| Staff cost per employee (RM'000)                       | 106.2                            | 131.8        | 125.0          | 131.9        | 130.7             |

<sup>1</sup> Refers to individual and collective impairment provisions in accordance with the Policy Document on Classification and Impairment Provisions for Loans / Financing

<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.6

**Islamic Banking System: Income and Expenditure**

|                                                                    | For the calendar year            |                |                |                |                   |
|--------------------------------------------------------------------|----------------------------------|----------------|----------------|----------------|-------------------|
|                                                                    | 2012                             | 2013           | 2014           | 2015           | 2016 <sup>p</sup> |
|                                                                    | RM million (or otherwise stated) |                |                |                |                   |
| Income <sup>1</sup>                                                | 16,415.7                         | 18,106.3       | 20,416.1       | 23,520.3       | 25,763.4          |
| <i>of which: derived from assets funded by investment accounts</i> | -                                | -              | -              | 1,041.9        | 7,295.8           |
| Less: Expense <sup>1</sup>                                         | 7,965.1                          | 9,422.9        | 10,888.9       | 13,738.6       | 15,238.0          |
| <i>of which: profit distributed to investment account holders</i>  | -                                | -              | -              | 601.7          | 3,987.0           |
| Net income                                                         | 8,450.6                          | 8,683.3        | 9,527.2        | 9,781.7        | 10,525.4          |
| Add: Fee-based income <sup>2</sup>                                 | 1,055.2                          | 1,048.4        | 1,056.9        | 1,121.3        | 1,309.9           |
| Less: Staff cost                                                   | 1,636.7                          | 1,740.0        | 1,741.9        | 1,754.7        | 1,790.8           |
| Overheads                                                          | 3,016.8                          | 3,079.2        | 3,225.5        | 3,495.6        | 3,685.7           |
| Gross operating profit                                             | 4,852.3                          | 4,912.5        | 5,616.8        | 5,652.8        | 6,358.8           |
| Less: Impairment <sup>3</sup> and other provisions                 | 609.0                            | 443.8          | 758.2          | 1,067.8        | 1,174.1           |
| Gross operating profit after provision                             | 4,243.2                          | 4,468.7        | 4,858.6        | 4,585.0        | 5,184.7           |
| Add: Other income                                                  | 608.9                            | 444.0          | 253.1          | 449.4          | 391.2             |
| <b>Pre-tax profit</b>                                              | <b>4,852.1</b>                   | <b>4,912.7</b> | <b>5,111.7</b> | <b>5,034.4</b> | <b>5,576.0</b>    |
| Pre-tax profit / Average assets (%)                                | 1.3                              | 1.2            | 1.1            | 1.0            | 1.0               |
| Pre-tax profit / Average shareholders' funds (%)                   | 18.2                             | 17.0           | 15.7           | 14.0           | 13.9              |
| Pre-tax profit / Average employee (RM'000) <sup>4</sup>            | 173.8                            | 167.0          | 173.1          | 161.8          | 179.8             |
| Cost incurred per ringgit of revenue earned (sen)                  | 25.7                             | 24.6           | 22.9           | 20.9           | 19.9              |
| Cost incurred per ringgit of net income (sen)                      | 55.1                             | 55.5           | 52.1           | 53.7           | 52.0              |
| Overheads to staff cost (%)                                        | 184.3                            | 177.0          | 185.2          | 199.2          | 205.8             |
| Staff cost per employee (RM'000) <sup>4</sup>                      | 58.6                             | 59.1           | 59.0           | 56.4           | 57.8              |

<sup>1</sup> Beginning 1 July 2015, income and expenses include those arising from assets funded by investment accounts and profit distributed to investment account holders

<sup>2</sup> Including income derived from assets funded by investment accounts which are recognised off-balance sheet

<sup>3</sup> Refers to individual and collective impairment provisions in accordance with the Policy Document on the Classification and Impairment Provisions for Loans / Financing

<sup>4</sup> Number of employees is estimated based on the percentage of the institutions' Islamic assets

<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia



Table A.7

**Banking System: Network and Workforce**

|                                        | As at end |         |         |         |                   |
|----------------------------------------|-----------|---------|---------|---------|-------------------|
|                                        | 2012      | 2013    | 2014    | 2015    | 2016 <sup>p</sup> |
| Number of institutions                 | 56        | 55      | 54      | 54      | 54                |
| <i>Commercial banks</i>                | 27        | 27      | 27      | 27      | 27                |
| <i>Investment banks</i>                | 13        | 12      | 11      | 11      | 11                |
| <i>Islamic banks</i>                   | 16        | 16      | 16      | 16      | 16                |
| Office network                         | 2,481     | 2,479   | 2,494   | 2,500   | 2,498             |
| <i>Commercial banks</i>                | 2,056     | 2,029   | 2,045   | 2,048   | 2,019             |
| <i>Investment banks</i>                | 148       | 135     | 135     | 119     | 130               |
| <i>Islamic banks</i> <sup>1</sup>      | 2,171     | 2,177   | 2,192   | 2,206   | 2,197             |
| Number of banks with internet services | 29        | 29      | 30      | 30      | 30                |
| Number of employees                    | 126,902   | 125,071 | 125,307 | 119,246 | 117,108           |
| <i>Commercial banks</i>                | 107,541   | 106,006 | 106,783 | 101,718 | 100,089           |
| <i>Investment banks</i>                | 9,610     | 8,814   | 9,122   | 8,606   | 7,959             |
| <i>Islamic banks</i>                   | 9,751     | 10,251  | 9,402   | 8,922   | 9,060             |

<sup>1</sup> Includes Islamic bank branches that are shared with conventional bank branches<sup>p</sup> Preliminary

Source: Bank Negara Malaysia

Table A.8

**Commercial Banks<sup>1</sup>: Commitments and Contingencies**

|                                                         | As at end          |                    |                    |                    |                    |
|---------------------------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
|                                                         | 2012               | 2013               | 2014               | 2015               | 2016 <sup>p</sup>  |
|                                                         | RM million         |                    |                    |                    |                    |
| Assets sold with recourse and commitments with drawdown | 6,053.5            | 5,284.8            | 6,762.4            | 8,852.4            | 12,066.7           |
| Credit extension commitments                            | 444,293.6          | 470,299.8          | 472,472.5          | 490,961.9          | 503,193.1          |
| Direct credit substitutes                               | 24,960.5           | 33,087.9           | 29,897.3           | 32,830.2           | 30,867.5           |
| Foreign exchange-related contracts                      | 518,150.2          | 577,388.4          | 760,062.7          | 891,122.5          | 924,253.8          |
| Interest rate-related contracts                         | 716,494.7          | 772,958.0          | 791,736.1          | 858,058.7          | 941,300.7          |
| Trade-related contingencies                             | 10,644.2           | 10,677.4           | 13,724.3           | 13,505.9           | 11,834.1           |
| Transaction-related contingencies                       | 45,928.8           | 50,561.5           | 57,964.8           | 60,492.9           | 66,338.3           |
| Underwriting obligations                                | 445.0              | 522.0              | 466.0              | 76.0               | 76.0               |
| Others                                                  | 72,179.0           | 55,541.2           | 63,046.9           | 58,523.2           | 58,783.8           |
| <b>Total</b>                                            | <b>1,839,149.5</b> | <b>1,976,320.9</b> | <b>2,196,133.0</b> | <b>2,414,423.9</b> | <b>2,548,714.0</b> |

<sup>1</sup> Includes Islamic banks<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.9

**Investment Banks: Commitments and Contingencies**

|                                                         | As at end       |                 |                 |                 |                   |
|---------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-------------------|
|                                                         | 2012            | 2013            | 2014            | 2015            | 2016 <sup>p</sup> |
|                                                         | RM million      |                 |                 |                 |                   |
| Assets sold with recourse and commitments with drawdown | 19.2            | 12.4            | 77.0            | 4.5             | 11.0              |
| Credit extension commitments                            | 3,666.1         | 5,454.80        | 5,609.1         | 5,802.7         | 6,160.1           |
| Direct credit substitutes                               | 201.5           | 316.6           | 418.0           | 543.0           | 305.4             |
| Foreign exchange-related contracts                      | 5,536.6         | 7,548.1         | 7,941.7         | 8,736.5         | 6,064.5           |
| Interest rate-related contracts                         | 9,161.6         | 9,779.4         | 8,957.2         | 7,370.6         | 7,574.8           |
| Trade-related contingencies                             | 1.1             | 0.0             | 0.0             | 0.0             | 0.0               |
| Transaction-related contingencies                       | 10.5            | 10.5            | 10.5            | 10.5            | 10.5              |
| Underwriting obligations                                | 190.3           | 680.8           | 90.2            | 218.4           | 85.6              |
| Others                                                  | 2,205.8         | 3,402.7         | 3,296.3         | 2,967.2         | 2,892.6           |
| <b>Total</b>                                            | <b>20,992.6</b> | <b>27,205.4</b> | <b>26,399.9</b> | <b>25,653.4</b> | <b>23,104.7</b>   |

<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.10

**Life Insurance<sup>1</sup>: Income and Outgo**

|                                 | For the calendar year |                 |                 |                 |                   |
|---------------------------------|-----------------------|-----------------|-----------------|-----------------|-------------------|
|                                 | 2012                  | 2013            | 2014            | 2015            | 2016 <sup>p</sup> |
|                                 | RM million            |                 |                 |                 |                   |
| Net premiums                    | 25,005.7              | 26,458.1        | 28,824.8        | 30,041.2        | 31,619.1          |
| Less: Net policy benefits       | 14,342.4              | 16,357.7        | 17,997.2        | 20,541.3        | 21,383.1          |
| Agency remuneration             | 3,551.9               | 3,667.9         | 3,837.0         | 3,899.6         | 4,100.0           |
| Total management expenses       | 2,287.6               | 2,481.8         | 2,626.5         | 2,994.6         | 3,227.9           |
| Balance of transaction          | 4,823.8               | 3,950.7         | 4,364.1         | 2,605.6         | 2,908.1           |
| Add: Net investment income      | 6,706.8               | 7,208.4         | 7,623.2         | 8,057.0         | 8,447.0           |
| Net capital gain (loss)         | 2,181.6               | -1,344.2        | -856.2          | -209.7          | 268.4             |
| Net other income (outgo)        | 1,735.7               | 1,272.8         | 512.9           | -104.2          | -354.4            |
| <b>Excess income over outgo</b> | <b>15,447.8</b>       | <b>11,087.7</b> | <b>11,643.9</b> | <b>10,348.7</b> | <b>11,269.0</b>   |

<sup>1</sup> Figures are based on global business of life insurance<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.11

**General Insurance<sup>1</sup>: Underwriting and Operating Results**

|                            | For the calendar year |                |                |                |                   |
|----------------------------|-----------------------|----------------|----------------|----------------|-------------------|
|                            | 2012                  | 2013           | 2014           | 2015           | 2016 <sup>p</sup> |
|                            | RM million            |                |                |                |                   |
| Earned premium income      | 12,418.7              | 13,821.3       | 14,885.6       | 15,633.8       | 16,000.3          |
| Less: Net claims incurred  | 7,126.7               | 7,934.2        | 8,699.6        | 9,553.3        | 9,081.0           |
| Net commission             | 1,587.4               | 1,789.8        | 1,963.4        | 2,015.6        | 2,171.1           |
| Total management expenses  | 2,220.2               | 2,477.1        | 2,656.4        | 2,929.3        | 3,205.0           |
| Underwriting profit        | 1,484.3               | 1,620.1        | 1,566.3        | 1,135.6        | 1,543.2           |
| Add: Net investment income | 970.1                 | 1,015.7        | 1,063.9        | 1,152.8        | 1,247.6           |
| Net capital gains (loss)   | 19.6                  | 24.8           | -29.2          | 1.0            | -6.1              |
| Net other income           | 114.9                 | 180.5          | 197.3          | 88.3           | 200.9             |
| <b>Operating profit</b>    | <b>2,588.9</b>        | <b>2,841.1</b> | <b>2,798.3</b> | <b>2,377.7</b> | <b>2,985.5</b>    |

<sup>1</sup> Figures are based on global business of general insurance<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.12

**Family Takaful<sup>1</sup>: Income and Outgo**

|                                 | For the calendar year |                |                |                |                   |
|---------------------------------|-----------------------|----------------|----------------|----------------|-------------------|
|                                 | 2012                  | 2013           | 2014           | 2015           | 2016 <sup>p</sup> |
|                                 | RM million            |                |                |                |                   |
| Net contributions               | 4,574.8               | 4,803.9        | 4,787.2        | 5,104.3        | 5,742.0           |
| Less: Net certificate benefits  | 1,635.9               | 1,999.2        | 2,027.6        | 2,449.9        | 2,675.7           |
| Net commissions                 | 711.2                 | 761.2          | 731.5          | 850.6          | 955.2             |
| Total management expenses       | 574.6                 | 642.5          | 731.4          | 845.7          | 968.1             |
| Balance of transaction          | 1,653.2               | 1,401.0        | 1,296.7        | 958.2          | 1,143.0           |
| Add: Net investment income      | 590.1                 | 659.1          | 736.9          | 837.4          | 922.6             |
| Net capital gain (loss)         | 54.6                  | -164.4         | -56.1          | 16.4           | -8.7              |
| Net other income (outgo)        | 155.8                 | 204.4          | 138.5          | -140.5         | -73.0             |
| <b>Excess income over outgo</b> | <b>2,453.7</b>        | <b>2,100.1</b> | <b>2,116.0</b> | <b>1,671.5</b> | <b>1,983.9</b>    |

<sup>1</sup> Figures are based on global business and actual expenses borne by family takaful funds<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.13

**General Takaful<sup>1</sup>: Underwriting and Operating Results**

|                             | For the calendar year |              |              |              |                   |
|-----------------------------|-----------------------|--------------|--------------|--------------|-------------------|
|                             | 2012                  | 2013         | 2014         | 2015         | 2016 <sup>p</sup> |
|                             | RM million            |              |              |              |                   |
| Earned contributions income | 1,282.1               | 1,390.0      | 1,466.8      | 1,671.4      | 1,778.0           |
| Less: Net claims incurred   | 730.0                 | 743.2        | 700.6        | 867.7        | 870.5             |
| Net commission              | 156.7                 | 192.4        | 91.9         | 105.0        | 101.3             |
| Total management expenses   | 206.0                 | 247.4        | 416.7        | 502.9        | 546.6             |
| Underwriting profit         | 189.5                 | 207.0        | 257.6        | 195.8        | 259.6             |
| Add: Net investment income  | 96.3                  | 102.8        | 110.6        | 119.1        | 128.7             |
| Net capital gains (loss)    | 41.6                  | 80.4         | 11.8         | 6.9          | -0.4              |
| Net other income (outgo)    | -18.3                 | -7.7         | -2.2         | -1.6         | 20.0              |
| <b>Operating profit</b>     | <b>309.1</b>          | <b>382.5</b> | <b>377.8</b> | <b>320.3</b> | <b>407.9</b>      |

<sup>1</sup> Figures are based on global business and actual expenses borne by general takaful funds

<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.14

**Development Financial Institutions: Sources and Uses of Funds**

|                                            | DFIs <sup>1</sup> under DFIA <sup>2</sup> |                  | Non-DFIA <sup>2</sup> DFIs <sup>3</sup> |                 | Total DFIs       |                  |
|--------------------------------------------|-------------------------------------------|------------------|-----------------------------------------|-----------------|------------------|------------------|
|                                            | As at end                                 |                  |                                         |                 |                  |                  |
|                                            | 2015                                      | 2016             | 2015                                    | 2016            | 2015             | 2016             |
|                                            | RM million                                |                  |                                         |                 |                  |                  |
| <b>Sources:</b>                            |                                           |                  |                                         |                 |                  |                  |
| Shareholders' equity                       | 30,095.7                                  | 31,790.0         | -430.8                                  | 4,838.3         | 29,664.9         | 36,628.3         |
| <i>of which:</i>                           |                                           |                  |                                         |                 |                  |                  |
| Paid-up capital                            | 11,121.3                                  | 11,123.4         | 2,859.5                                 | 2,871.5         | 13,980.8         | 13,994.9         |
| Reserves                                   | 8,317.3                                   | 8,908.3          | -1,953.2                                | -1,874.4        | 6,364.1          | 7,033.9          |
| Retained earnings/losses                   | 8,511.5                                   | 9,582.9          | 1,392.3                                 | 1,173.7         | 9,903.8          | 10,756.6         |
| Liabilities                                | 168,177.5                                 | 172,812.6        | 77,158.0                                | 76,625.6        | 245,335.5        | 249,438.2        |
| <i>of which:</i>                           |                                           |                  |                                         |                 |                  |                  |
| Deposits accepted                          | 117,383.8                                 | 126,159.1        | 66,676.3                                | 66,026.3        | 184,060.1        | 192,185.4        |
| Borrowings                                 | 15,147.0                                  | 11,038.8         | 7,544.4                                 | 7,542.9         | 22,691.4         | 18,581.7         |
| <i>Government</i>                          | 9,289.9                                   | 7,976.5          | 1,768.2                                 | 1,607.1         | 11,058.1         | 9,583.6          |
| <i>Multilateral/International agencies</i> | 3,891.1                                   | 2,153.2          | 13.2                                    | 4.8             | 3,904.3          | 2,158.0          |
| <i>Others</i>                              | 1,966.0                                   | 909.1            | 5,763.0                                 | 5,931.0         | 7,729.0          | 6,840.1          |
| Debt securities issued                     | 17,692.3                                  | 20,502.5         | -                                       | -               | 17,692.3         | 20,502.5         |
| <b>Total</b>                               | <b>198,273.2</b>                          | <b>204,602.6</b> | <b>76,727.2</b>                         | <b>81,463.9</b> | <b>275,000.4</b> | <b>286,066.5</b> |
| <b>Uses:</b>                               |                                           |                  |                                         |                 |                  |                  |
| Assets                                     | 198,273.2                                 | 204,602.6        | 76,727.2                                | 81,463.9        | 275,000.4        | 286,066.5        |
| <i>of which:</i>                           |                                           |                  |                                         |                 |                  |                  |
| Deposits placed                            | 7,159.2                                   | 7,445.9          | 12,472.0                                | 11,258.6        | 19,631.2         | 18,704.5         |
| Investments                                | 42,519.4                                  | 43,687.7         | 44,922.9                                | 49,397.7        | 87,442.3         | 93,085.4         |
| <i>of which:</i>                           |                                           |                  |                                         |                 |                  |                  |
| <i>Government securities</i>               | 25,683.6                                  | 23,857.5         | 58.9                                    | -               | 25,742.5         | 23,857.5         |
| <i>Shares</i>                              | 632.7                                     | 888.1            | 16,329.5                                | 20,166.7        | 16,962.2         | 21,054.8         |
| <i>Quoted</i>                              | 583.7                                     | 842.3            | 16,177.6                                | 20,015.8        | 16,761.3         | 20,858.1         |
| <i>Unquoted</i>                            | 49.0                                      | 45.8             | 151.9                                   | 150.9           | 200.9            | 196.7            |
| <i>Corporate debt securities</i>           | 9,505.9                                   | 11,281.9         | 12,595.9                                | 13,919.8        | 22,101.8         | 25,201.7         |
| Loans and advances                         | 135,579.3                                 | 143,348.1        | 9,276.3                                 | 9,602.0         | 144,855.6        | 152,950.1        |
| Fixed assets                               | 3,990.5                                   | 4,191.8          | 6,212.3                                 | 6,678.8         | 10,202.8         | 10,870.6         |
| <b>Total</b>                               | <b>198,273.2</b>                          | <b>204,602.6</b> | <b>76,727.2</b>                         | <b>81,463.9</b> | <b>275,000.4</b> | <b>286,066.5</b> |
| <b>Contingencies:</b>                      |                                           |                  |                                         |                 |                  |                  |
| Guarantee                                  | 625.9                                     | 729.0            | 6,877.5                                 | 6,720.5         | 7,503.4          | 7,449.5          |
| Export credit insurance                    | 1,177.3                                   | 1,333.5          | -                                       | -               | 1,177.3          | 1,333.5          |
| <b>Total</b>                               | <b>1,803.2</b>                            | <b>2,062.5</b>   | <b>6,877.5</b>                          | <b>6,720.5</b>  | <b>8,680.7</b>   | <b>8,783.0</b>   |

<sup>1</sup> Refers to Bank Kerjasama Rakyat Malaysia Berhad (Bank Rakyat), Bank Simpanan Nasional (BSN), Bank Pembangunan Malaysia Berhad (Bank Pembangunan), Bank Pertanian Malaysia Berhad (Agrobank), Export-Import Bank of Malaysia Berhad (EXIM Bank) and Small Medium Enterprise Development Bank Malaysia Berhad (SME Bank)

<sup>2</sup> Development Financial Institutions Act 2002

<sup>3</sup> Refers to Lembaga Tabung Haji (LTH), Credit Guarantee Corporation Malaysia Berhad (CGC), Sabah Development Bank Berhad (SDB), Malaysian Industrial Development Finance Berhad (MIDF), Sabah Credit Corporation (SCC), Borneo Development Corporation (Sarawak) Sendirian Berhad (BDC Sarawak) and Borneo Development Corporation (Sabah) Sendirian Berhad (BDC Sabah)

Table A.15

**Development Financial Institutions<sup>1</sup> under DFIA<sup>2</sup>: Sources and Uses of Funds**

|                                            | As at end-2016  |                 |                  |                 |                 |                 |                  |
|--------------------------------------------|-----------------|-----------------|------------------|-----------------|-----------------|-----------------|------------------|
|                                            | Bank Rakyat     | BSN             | Bank Pembangunan | Agrobank        | EXIM Bank       | SME Bank        | Total            |
|                                            | RM million      |                 |                  |                 |                 |                 |                  |
| <b>Sources:</b>                            |                 |                 |                  |                 |                 |                 |                  |
| Shareholders' equity                       | 15,062.1        | 2,333.7         | 7,401.2          | 2,623.0         | 3,061.8         | 1,308.2         | 31,790.0         |
| <i>of which:</i>                           |                 |                 |                  |                 |                 |                 |                  |
| Paid-up capital                            | 2,986.0         | -               | 3,078.7          | 1,000.0         | 2,708.7         | 1,350.0         | 11,123.4         |
| Reserves                                   | 5,501.3         | 1,104.0         | 1,885.9          | 437.3           | 0.8             | -21.0           | 8,908.3          |
| Retained earnings/losses                   | 4,773.0         | 1,152.3         | 2,384.6          | 1,048.4         | 293.6           | -69.0           | 9,582.9          |
| Liabilities                                | 84,163.9        | 29,300.5        | 23,177.9         | 12,151.7        | 14,352.5        | 9,666.1         | 172,812.6        |
| <i>of which:</i>                           |                 |                 |                  |                 |                 |                 |                  |
| Deposits accepted                          | 78,088.0        | 25,898.5        | 9,679.2          | 8,668.2         | -               | 3,825.2         | 126,159.1        |
| Borrowings                                 | 1,109.2         | 51.4            | 2,906.2          | 2,144.7         | 2,132.9         | 2,694.4         | 11,038.8         |
| <i>Government</i>                          | 209.2           | 51.4            | 2,850.0          | 2,144.7         | 35.9            | 2,685.3         | 7,976.5          |
| <i>Multilateral/International agencies</i> | -               | -               | 56.2             | -               | 2,097.0         | -               | 2,153.2          |
| <i>Others</i>                              | 900.0           | -               | -                | -               | -               | 9.1             | 909.1            |
| Debt securities issued                     | 2,818.6         | -               | 5,850.0          | -               | 10,314.1        | 1,519.8         | 20,502.5         |
| <b>Total</b>                               | <b>99,226.0</b> | <b>31,634.2</b> | <b>30,579.1</b>  | <b>14,774.7</b> | <b>17,414.3</b> | <b>10,974.3</b> | <b>204,602.6</b> |
| <b>Uses:</b>                               |                 |                 |                  |                 |                 |                 |                  |
| Assets                                     | 99,226.0        | 31,634.2        | 30,579.1         | 14,774.7        | 17,414.3        | 10,974.3        | 204,602.6        |
| <i>of which:</i>                           |                 |                 |                  |                 |                 |                 |                  |
| Deposits placed                            | 1,807.1         | 311.6           | 1,019.1          | 967.1           | 2,312.8         | 1,028.2         | 7,445.9          |
| Investments                                | 26,390.3        | 6,416.3         | 4,042.1          | 4,115.2         | 220.8           | 2,503.0         | 43,687.7         |
| <i>of which:</i>                           |                 |                 |                  |                 |                 |                 |                  |
| <i>Government securities</i>               | 17,005.4        | 3,377.9         | 1,291.0          | 1,168.2         | -               | 1,015.0         | 23,857.5         |
| <i>Shares</i>                              | 568.4           | 124.3           | 186.0            | 0.2             | -               | 9.2             | 888.1            |
| <i>Quoted</i>                              | 559.2           | 124.3           | 158.6            | 0.2             | -               | -               | 842.3            |
| <i>Unquoted</i>                            | 9.2             | -               | 27.4             | -               | -               | 9.2             | 45.8             |
| <i>Corporate debt securities</i>           | 3,698.2         | 472.3           | 2,560.0          | 2,946.8         | 220.8           | 1,383.8         | 11,281.9         |
| Loans and advances                         | 69,179.8        | 21,790.3        | 23,834.2         | 8,727.0         | 13,760.5        | 6,056.3         | 143,348.1        |
| Fixed assets                               | 1,381.6         | 1,471.0         | 191.7            | 543.4           | 137.0           | 467.1           | 4,191.8          |
| <b>Total</b>                               | <b>99,226.0</b> | <b>31,634.2</b> | <b>30,579.1</b>  | <b>14,774.7</b> | <b>17,414.3</b> | <b>10,974.3</b> | <b>204,602.6</b> |

<sup>1</sup> Refers to Bank Kerjasama Rakyat Malaysia Berhad (Bank Rakyat), Bank Simpanan Nasional (BSN), Bank Pembangunan Malaysia Berhad (Bank Pembangunan), Bank Pertanian Malaysia Berhad (Agrobank), Export-Import Bank of Malaysia Berhad (EXIM Bank) and Small Medium Enterprise Development Bank Malaysia Berhad (SME Bank)

<sup>2</sup> Development Financial Institutions Act 2002

Table A.16

**Development Financial Institutions: Financing by Economic Sector**

|                                                                       | DFIs <sup>1</sup> under DFIA <sup>2</sup> |                  | Non-DFIA <sup>2</sup> DFIs <sup>3</sup> |                | Total DFIs       |                  |
|-----------------------------------------------------------------------|-------------------------------------------|------------------|-----------------------------------------|----------------|------------------|------------------|
|                                                                       | As at end                                 |                  |                                         |                |                  |                  |
|                                                                       | 2015                                      | 2016             | 2015                                    | 2016           | 2015             | 2016             |
|                                                                       | RM million                                |                  |                                         |                |                  |                  |
| Agriculture, forestry and fishery                                     | 8,032.9                                   | 9,221.2          | 689.0                                   | 725.3          | 8,721.9          | 9,946.5          |
| Mining and quarrying                                                  | 657.0                                     | 677.8            | 25.8                                    | 1,082.2        | 682.8            | 1,760.0          |
| Manufacturing                                                         | 4,992.1                                   | 5,385.2          | 515.4                                   | 425.3          | 5,507.5          | 5,810.5          |
| Electricity, gas and water supply                                     | 4,792.9                                   | 4,432.6          | 467.5                                   | 481.9          | 5,260.4          | 4,914.5          |
| Import and export, wholesale and retail trade, restaurants and hotels | 4,398.7                                   | 4,764.1          | 142.3                                   | 191.5          | 4,541.0          | 4,955.6          |
| Broad property sector                                                 | 22,168.3                                  | 23,547.8         | 3,270.8                                 | 3,149.9        | 25,439.1         | 26,697.7         |
| <i>Construction</i>                                                   | 11,818.2                                  | 12,117.6         | 1,986.2                                 | 2,481.0        | 13,804.4         | 14,598.6         |
| <i>Purchase of residential property</i>                               | 9,510.3                                   | 10,473.7         | 76.9                                    | 66.0           | 9,587.2          | 10,539.7         |
| <i>Purchase of non-residential property</i>                           | 214.4                                     | 231.9            | 27.5                                    | 24.4           | 241.9            | 256.3            |
| <i>Real estate</i>                                                    | 625.4                                     | 724.6            | 1,180.2                                 | 578.5          | 1,805.6          | 1,303.1          |
| Maritime                                                              | 1,931.4                                   | 1,720.5          | -                                       | -              | 1,931.4          | 1,720.5          |
| Transport, storage and communication                                  | 9,994.4                                   | 9,336.1          | 37.9                                    | 88.3           | 10,032.3         | 9,424.4          |
| Finance, insurance and business services                              | 4,572.0                                   | 4,932.3          | 616.6                                   | 499.6          | 5,188.6          | 5,431.9          |
| Consumption credit                                                    | 70,072.2                                  | 75,007.0         | 2,326.0                                 | 2,642.9        | 72,398.2         | 77,649.9         |
| <i>of which:</i>                                                      |                                           |                  |                                         |                |                  |                  |
| <i>Purchase of motor vehicles</i>                                     | 1,714.2                                   | 1,882.5          | 1.4                                     | 0.8            | 1,715.6          | 1,883.3          |
| <i>Credit card</i>                                                    | 866.8                                     | 936.3            | 2,324.6                                 | -              | 3,191.4          | 936.3            |
| Community, social and other service activities                        | 3,351.0                                   | 3,774.9          | 5.9                                     | 12.1           | 3,356.9          | 3,787.0          |
| Purchase of securities                                                | 259.2                                     | 272.2            | -                                       | -              | 259.2            | 272.2            |
| Other sectors                                                         | 357.2                                     | 276.4            | 1,179.1                                 | 303.0          | 1,536.3          | 579.4            |
| <b>Total</b>                                                          | <b>135,579.3</b>                          | <b>143,348.1</b> | <b>9,276.3</b>                          | <b>9,602.0</b> | <b>144,855.6</b> | <b>152,950.1</b> |

<sup>1</sup> Refers to Bank Kerjasama Rakyat Malaysia Berhad (Bank Rakyat), Bank Simpanan Nasional (BSN), Bank Pembangunan Malaysia Berhad (Bank Pembangunan), Bank Pertanian Malaysia Berhad (Agrobank), Export-Import Bank of Malaysia Berhad (EXIM Bank) and Small Medium Enterprise Development Bank Malaysia Berhad (SME Bank)

<sup>2</sup> Development Financial Institutions Act 2002

<sup>3</sup> Refers to Lembaga Tabung Haji (LTH), Credit Guarantee Corporation Malaysia Berhad (CGC), Sabah Development Bank Berhad (SDB), Malaysian Industrial Development Finance Berhad (MIDF), Sabah Credit Corporation (SCC), Borneo Development Corporation (Sarawak) Sendirian Berhad (BDC Sarawak) and Borneo Development Corporation (Sabah) Sendirian Berhad (BDC Sabah)



Table A.17

**Development Financial Institutions<sup>1</sup> under DFIA<sup>2</sup>: Financing by Economic Sector**

|                                                                       | As at end-2016  |                 |                  |                |                 |                |                  |
|-----------------------------------------------------------------------|-----------------|-----------------|------------------|----------------|-----------------|----------------|------------------|
|                                                                       | Bank Rakyat     | BSN             | Bank Pembangunan | Agrobank       | EXIM Bank       | SME Bank       | Total            |
|                                                                       | RM million      |                 |                  |                |                 |                |                  |
| Agriculture, forestry and fishery                                     | 349.1           | -               | -                | 8,727.0        | 141.6           | 3.5            | 9,221.2          |
| Mining and quarrying                                                  | -               | -               | -                | -              | 647.3           | 30.5           | 677.8            |
| Manufacturing                                                         | 139.4           | 42.4            | 1,501.8          | -              | 2,707.5         | 994.1          | 5,385.2          |
| Electricity, gas and water supply                                     | 100.3           | -               | 1,990.1          | -              | 2,321.9         | 20.3           | 4,432.6          |
| Import and export, wholesale and retail trade, restaurants and hotels | 127.6           | 352.5           | 1,589.1          | -              | 1,198.5         | 1,496.4        | 4,764.1          |
| Broad property sector                                                 | 3,065.3         | 8,908.2         | 8,067.6          | -              | 2,469.3         | 1,037.4        | 23,547.8         |
| <i>Construction</i>                                                   | 942.1           | -               | 8,067.6          | -              | 2,192.6         | 915.3          | 12,117.6         |
| <i>Purchase of residential property</i>                               | 1,612.6         | 8,861.1         | -                | -              | -               | -              | 10,473.7         |
| <i>Purchase of non-residential property</i>                           | 184.8           | 47.1            | -                | -              | -               | -              | 231.9            |
| <i>Real estate</i>                                                    | 325.8           | -               | -                | -              | 276.7           | 122.1          | 724.6            |
| Maritime                                                              | -               | -               | 1,720.5          | -              | -               | -              | 1,720.5          |
| Transport, storage and communication                                  | 267.6           | 17.3            | 6,283.6          | -              | 1,917.6         | 850.0          | 9,336.1          |
| Finance, insurance and business services                              | 1,987.5         | 265.1           | -                | -              | 2,111.9         | 567.8          | 4,932.3          |
| Consumption credit                                                    | 63,039.9        | 11,967.1        | -                | -              | -               | -              | 75,007.0         |
| <i>of which:</i>                                                      |                 |                 |                  |                |                 |                |                  |
| <i>Purchase of motor vehicles</i>                                     | 1,160.0         | 722.5           | -                | -              | -               | -              | 1,882.5          |
| <i>Credit card</i>                                                    | 479.4           | 456.9           | -                | -              | -               | -              | 936.3            |
| Community, social and other service activities                        | 39.9            | 27.5            | 2,672.9          | -              | -               | 1,034.6        | 3,774.9          |
| Purchase of securities                                                | 63.2            | 209.0           | -                | -              | -               | -              | 272.2            |
| Other sectors                                                         | -               | 1.2             | 8.6              | -              | 244.9           | 21.7           | 276.4            |
| <b>Total</b>                                                          | <b>69,179.8</b> | <b>21,790.3</b> | <b>23,834.2</b>  | <b>8,727.0</b> | <b>13,760.5</b> | <b>6,056.3</b> | <b>143,348.1</b> |

<sup>1</sup> Refers to Bank Kerjasama Rakyat Malaysia Berhad (Bank Rakyat), Bank Simpanan Nasional (BSN), Bank Pembangunan Malaysia Berhad (Bank Pembangunan), Bank Pertanian Malaysia Berhad (Agrobank), Export-Import Bank of Malaysia Berhad (EXIM Bank) and Small Medium Enterprise Development Bank Malaysia Berhad (SME Bank)

<sup>2</sup> Development Financial Institutions Act 2002

Table A.18

**Development Financial Institutions : Selected Data**

|                                                           | As at end  |              |               |            |              |               |
|-----------------------------------------------------------|------------|--------------|---------------|------------|--------------|---------------|
|                                                           | 2015       |              |               | 2016       |              |               |
|                                                           | Branch     | ATM          | Staff         | Branch     | ATM          | Staff         |
| <b>DFIs under DFIA<sup>1</sup>:</b>                       |            |              |               |            |              |               |
| Bank Kerjasama Rakyat Malaysia Berhad                     | 148        | 699          | 5,153         | 148        | 711          | 5,036         |
| Bank Simpanan Nasional                                    | 400        | 862          | 7,084         | 402        | 727          | 7,233         |
| Bank Pembangunan Malaysia Berhad                          | -          | -            | 342           | -          | -            | 376           |
| Bank Pertanian Malaysia Berhad                            | 187        | 255          | 3,102         | 187        | 257          | 3,381         |
| Export-Import Bank of Malaysia Berhad                     | -          | -            | 312           | -          | -            | 332           |
| Small Medium Enterprise Development Bank Malaysia Berhad  | 29         | -            | 1,029         | 29         | -            | 964           |
| Sub-total                                                 | 764        | 1,816        | 17,022        | 766        | 1,695        | 17,322        |
| <b>Non-DFIA<sup>1</sup> DFIs:</b>                         |            |              |               |            |              |               |
| Lembaga Tabung Haji                                       | 122        | -            | 2,119         | 123        | -            | 2,124         |
| Credit Guarantee Corporation Malaysia Berhad              | 16         | -            | 541           | 16         | -            | 535           |
| Sabah Development Bank Berhad                             | -          | -            | 83            | -          | -            | 81            |
| Malaysian Industrial Development Finance Berhad           | 5          | -            | 284           | 5          | -            | 278           |
| Sabah Credit Corporation                                  | 13         | -            | 185           | 13         | -            | 178           |
| Borneo Development Corporation (Sarawak) Sendirian Berhad | -          | -            | 35            | -          | -            | 38            |
| Borneo Development Corporation (Sabah) Sendirian Berhad   | -          | -            | 21            | -          | -            | 19            |
| Sub-total                                                 | 156        | -            | 3,268         | 157        | -            | 3,253         |
| <b>Total</b>                                              | <b>920</b> | <b>1,816</b> | <b>20,290</b> | <b>923</b> | <b>1,695</b> | <b>20,575</b> |

<sup>1</sup> Development Financial Institutions Act 2002

Table A.19

| <b>Total Outward and Inward Remittances</b>    |                 |                 |                 |                 |                 |
|------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                                                | 2012            | 2013            | 2014            | 2015            | 2016            |
|                                                | RM million      |                 |                 |                 |                 |
| <b>Total outward<sup>1</sup></b>               | <b>18,357.5</b> | <b>22,717.1</b> | <b>28,457.0</b> | <b>34,898.7</b> | <b>34,252.6</b> |
| <i>Remitted via:</i>                           |                 |                 |                 |                 |                 |
| Banks <sup>2</sup>                             | 7,543.3         | 8,577.2         | 10,989.0        | 14,265.9        | 12,678.0        |
| Money services business licensees <sup>3</sup> | 10,814.2        | 14,139.9        | 17,468.0        | 20,632.8        | 21,574.6        |
| <b>Total inward<sup>4</sup></b>                | <b>4,966.6</b>  | <b>5,764.8</b>  | <b>7,115.1</b>  | <b>8,588.6</b>  | <b>9,106.3</b>  |
| <i>Remitted via:</i>                           |                 |                 |                 |                 |                 |
| Banks                                          | 4,362.9         | 4,984.6         | 6,134.4         | 7,267.2         | 7,226.5         |
| Money services business licensees              | 603.7           | 780.2           | 980.7           | 1,321.4         | 1,879.8         |
| <i>As at end of period</i>                     |                 |                 |                 |                 |                 |
| <b>No. of remittance service providers</b>     | <b>79</b>       | <b>77</b>       | <b>77</b>       | <b>76</b>       | <b>76</b>       |
| Commercial banks                               | 43              | 43              | 43              | 43              | 43              |
| Development financial institutions             | 2               | 2               | 3               | 3               | 3               |
| Licensed non-bank remittance service providers | 34              | 32              | 31              | 30              | 30              |

<sup>1</sup> Refers to total funds remitted from Malaysia to other countries for workers' remittances and remuneration for employees

<sup>2</sup> Remittance transactions adjusted for funds channelled through Malaysia from a country of origin to another destination country. These funds comprise primarily the international worker remittances conducted via the MSB licensees approved under the Money Services Business Act (MSBA) 2011

<sup>3</sup> Refers to non-bank remittance service providers and development financial institutions licensed under the MSBA 2011

<sup>4</sup> Refers to total funds remitted from other countries to Malaysia for workers' remittances and remuneration for employees

Source: International Transactions Information System (ITIS), e-SURVEY on bank remittance transactions and Money Services Business Statistical Report on Remittance Business

Table A.20

**Basic Payments Indicator**

|                                                               | 2012      | 2013      | 2014      | 2015      | 2016      |
|---------------------------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| Population (million)                                          | 29.8      | 30.2      | 30.7      | 31.2      | 31.7      |
| GDP (RM million)                                              | 971,252   | 1,018,614 | 1,106,466 | 1,157,139 | 1,229,382 |
| Cash in circulation (CIC) (RM million)                        | 57,395.6  | 62,710.2  | 68,029.4  | 76,642.9  | 85,460.3  |
| <b>Transaction Volume Per Capita (unit):</b>                  |           |           |           |           |           |
| Cheque <sup>1</sup>                                           | 6.8       | 6.5       | 5.8       | 4.7       | 4.2       |
| E-payments:                                                   | 54.4      | 63.6      | 71.0      | 82.5      | 97.5      |
| Credit card                                                   | 10.9      | 11.0      | 11.3      | 11.5      | 12.1      |
| Charge card                                                   | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       |
| Debit card                                                    | 1.2       | 1.6       | 2.2       | 2.9       | 3.4       |
| E-money                                                       | 31.0      | 34.7      | 38.3      | 44.4      | 52.5      |
| Other cashless instruments <sup>2</sup>                       | 0.9       | 1.0       | 1.0       | 1.1       | 1.6       |
| Interbank GIRO                                                | 2.4       | 2.8       | 3.7       | 4.8       | 5.5       |
| Instant Transfer                                              | 0.3       | 0.5       | 0.9       | 1.5       | 2.6       |
| Direct Debit <sup>3</sup>                                     | ...       | ...       | ...       | 0.1       | 0.1       |
| ATM <sup>4</sup>                                              | 1.1       | 1.0       | 1.1       | 1.5       | 1.4       |
| Internet banking <sup>5</sup>                                 | 6.2       | 7.2       | 8.6       | 10.5      | 13.0      |
| Mobile banking <sup>5</sup>                                   | 0.2       | 0.5       | 0.7       | 0.9       | 1.7       |
| RENTAS - Third party transactions <sup>6</sup>                | 0.1       | 0.1       | 0.1       | 0.1       | 0.1       |
| Intrabank direct debit and standing instructions <sup>7</sup> | -         | 3.1       | 3.0       | 3.2       | 3.3       |
| <b>Transaction Value Per Capita (RM):</b>                     |           |           |           |           |           |
| CIC                                                           | 1,926.1   | 2,075.5   | 2,215.3   | 2,457.6   | 2,699.2   |
| Cheque <sup>1</sup>                                           | 68,231.2  | 68,163.9  | 63,115.6  | 57,555.8  | 52,601.0  |
| E-payments:                                                   | 507,537.1 | 535,946.4 | 564,022.4 | 535,225.4 | 550,297.8 |
| Credit card                                                   | 3,157.3   | 3,300.9   | 3,435.4   | 3,612.6   | 3,743.7   |
| Charge card                                                   | 216.7     | 239.1     | 278.8     | 286.3     | 307.9     |
| Debit card                                                    | 289.2     | 379.1     | 481.5     | 640.0     | 711.3     |
| E-money                                                       | 142.4     | 162.8     | 172.1     | 192.2     | 242.7     |
| Other cashless instruments <sup>2</sup>                       | 2.6       | 4.3       | 3.2       | 3.3       | 4.8       |
| Interbank GIRO                                                | 7,102.9   | 9,441.6   | 14,085.0  | 20,411.9  | 24,245.3  |
| Instant Transfer                                              | 278.7     | 465.1     | 827.0     | 1,664.4   | 3,395.4   |
| Direct Debit <sup>3</sup>                                     | 276.8     | 372.4     | 481.8     | 619.2     | 797.7     |
| ATM <sup>4</sup>                                              | 1,243.4   | 1,355.9   | 1,232.9   | 1,308.2   | 1,294.9   |
| Internet banking <sup>5</sup>                                 | 62,042.8  | 74,809.0  | 87,188.1  | 88,363.9  | 100,329.7 |
| Mobile banking <sup>5</sup>                                   | 123.0     | 257.8     | 395.0     | 497.2     | 736.3     |
| RENTAS - Third party transactions <sup>6</sup>                | 432,661.2 | 424,296.4 | 443,175.6 | 407,481.8 | 404,123.1 |
| Intrabank direct debit and standing instructions <sup>7</sup> | -         | 20,862.1  | 12,266.0  | 10,144.3  | 10,364.9  |
| <b>Turnover to GDP:</b>                                       |           |           |           |           |           |
| CIC (%)                                                       | 5.9       | 6.2       | 6.1       | 6.6       | 7.0       |
| Cheque <sup>1</sup> (times)                                   | 2.1       | 2.0       | 1.8       | 1.6       | 1.4       |
| E-payments (times):                                           | 15.6      | 15.9      | 15.7      | 14.4      | 14.2      |
| % of GDP:                                                     |           |           |           |           |           |
| Credit card                                                   | 9.7       | 9.8       | 9.5       | 9.7       | 9.6       |
| Charge card                                                   | 0.7       | 0.7       | 0.8       | 0.8       | 0.8       |
| Debit card                                                    | 0.9       | 1.1       | 1.3       | 1.7       | 1.8       |
| E-money                                                       | 0.4       | 0.5       | 0.5       | 0.5       | 0.6       |
| Other cashless instruments <sup>2</sup>                       | ...       | ...       | ...       | ...       | ...       |
| Interbank GIRO                                                | 21.8      | 28.0      | 39.1      | 55.0      | 62.4      |
| Instant Transfer                                              | 0.9       | 1.4       | 2.3       | 4.5       | 8.7       |
| Direct Debit <sup>3</sup>                                     | 0.8       | 1.1       | 1.3       | 1.7       | 2.1       |
| ATM <sup>4</sup>                                              | 3.8       | 4.0       | 3.4       | 3.5       | 3.3       |
| Internet banking <sup>5</sup>                                 | 190.4     | 221.9     | 242.0     | 238.1     | 258.4     |
| Mobile banking <sup>5</sup>                                   | 0.4       | 0.8       | 1.1       | 1.3       | 1.9       |
| RENTAS - Third party transactions <sup>6</sup> (times)        | 13.3      | 12.6      | 12.3      | 11.0      | 10.4      |
| Intrabank direct debit and standing instructions <sup>7</sup> | -         | 61.9      | 34.0      | 27.3      | 26.7      |

<sup>1</sup> Cheques cleared via eSPICK<sup>2</sup> Refer to single purpose payment cards<sup>3</sup> Refer to interbank direct debit transactions<sup>4</sup> Refer to payment transactions via ATM, including own and third party funds transfer. Exclude cash withdrawals<sup>5</sup> Exclude non-financial transactions, credit card, IBG and RENTAS third party transactions performed online<sup>6</sup> Refer to Government, custom duty and third party payments via Interbank Funds Transfer System. Third party payment refers to transaction with a minimum amount of RM10,000, where the beneficiary or ordering party is a non-RENTAS member<sup>7</sup> Refer to payments that are directly debited by the banks from the current and savings account. Data available from 2013

... Negligible

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia and Department of Statistics, Malaysia

Table A.21

**Cashless Payment Instruments: Transaction Volume**

|                                   | 2012         | 2013           | 2014           | 2015           | 2016           | 2015            | 2016         |
|-----------------------------------|--------------|----------------|----------------|----------------|----------------|-----------------|--------------|
|                                   | Million      |                |                |                |                | % Annual change |              |
| <b>Cheque<sup>1</sup></b>         | <b>203.8</b> | <b>197.1</b>   | <b>177.1</b>   | <b>148.0</b>   | <b>133.1</b>   | <b>-16.5</b>    | <b>-10.0</b> |
| <b>Credit card</b>                | <b>325.3</b> | <b>332.4</b>   | <b>345.7</b>   | <b>359.6</b>   | <b>383.8</b>   | <b>4.0</b>      | <b>6.7</b>   |
| <b>Charge card</b>                | <b>4.1</b>   | <b>4.1</b>     | <b>4.4</b>     | <b>4.2</b>     | <b>4.1</b>     | <b>-3.5</b>     | <b>-1.3</b>  |
| <b>Debit card</b>                 | <b>36.0</b>  | <b>49.4</b>    | <b>68.7</b>    | <b>90.1</b>    | <b>107.5</b>   | <b>31.1</b>     | <b>19.3</b>  |
| <i>International debit</i>        | 29.7         | 41.9           | 60.4           | 79.7           | 93.4           | 31.9            | 17.2         |
| <i>Domestic debit<sup>2</sup></i> | 6.3          | 7.4            | 8.4            | 10.4           | 14.1           | 24.8            | 34.8         |
| <b>E-money</b>                    | <b>923.0</b> | <b>1,048.0</b> | <b>1,175.0</b> | <b>1,384.7</b> | <b>1,663.2</b> | <b>17.8</b>     | <b>20.1</b>  |
| <i>Card-based</i>                 | 914.6        | 1,028.0        | 1,153.0        | 1,361.0        | 1,637.8        | 18.0            | 20.3         |
| <i>Network-based</i>              | 8.5          | 20.1           | 22.0           | 23.7           | 25.4           | 8.1             | 6.9          |

<sup>1</sup> Cheques cleared via eSPICK<sup>2</sup> Domestic PIN-based ATM card

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.22

**Cashless Payment Instruments: Transaction Value**

|                                   | 2012             | 2013             | 2014             | 2015             | 2016             | 2015            | 2016        |
|-----------------------------------|------------------|------------------|------------------|------------------|------------------|-----------------|-------------|
|                                   | RM million       |                  |                  |                  |                  | % Annual change |             |
| <b>Cheque<sup>1</sup></b>         | <b>2,033,221</b> | <b>2,059,504</b> | <b>1,938,218</b> | <b>1,794,937</b> | <b>1,665,401</b> | <b>-7.4</b>     | <b>-7.2</b> |
| <b>Credit card</b>                | <b>94,085</b>    | <b>99,733</b>    | <b>105,498</b>   | <b>112,664</b>   | <b>118,529</b>   | <b>6.8</b>      | <b>5.2</b>  |
| <b>Charge card</b>                | <b>6,459</b>     | <b>7,223</b>     | <b>8,560</b>     | <b>8,929</b>     | <b>9,749</b>     | <b>4.3</b>      | <b>9.2</b>  |
| <b>Debit card</b>                 | <b>8,619</b>     | <b>11,454</b>    | <b>14,785</b>    | <b>19,960</b>    | <b>22,521</b>    | <b>35.0</b>     | <b>12.8</b> |
| <i>International debit</i>        | 4,954            | 7,092            | 10,042           | 14,221           | 16,392           | 41.6            | 15.3        |
| <i>Domestic debit<sup>2</sup></i> | 3,665            | 4,362            | 4,743            | 5,739            | 6,129            | 21.0            | 6.8         |
| <b>E-money</b>                    | <b>4,244</b>     | <b>4,919</b>     | <b>5,284</b>     | <b>5,995</b>     | <b>7,685</b>     | <b>13.5</b>     | <b>28.2</b> |
| <i>Card-based</i>                 | 2,983            | 3,361            | 3,837            | 4,537            | 5,956            | 18.3            | 31.3        |
| <i>Network-based</i>              | 1,261            | 1,557            | 1,447            | 1,458            | 1,729            | 0.7             | 18.6        |

<sup>1</sup> Cheques cleared via eSPICK<sup>2</sup> Domestic PIN-based ATM card

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.23

| <b>Payment Systems: Transaction Volume and Value</b> |                    |          |          |          |          |                 |      |
|------------------------------------------------------|--------------------|----------|----------|----------|----------|-----------------|------|
|                                                      | 2012               | 2013     | 2014     | 2015     | 2016     | 2015            | 2016 |
|                                                      | Million/RM billion |          |          |          |          | % Annual change |      |
| <b>RENTAS<sup>1</sup></b>                            |                    |          |          |          |          |                 |      |
| Transaction volume                                   | 3.6                | 4.0      | 4.4      | 4.4      | 4.4      | 0.8             | 1.0  |
| Transaction value                                    | 46,169.4           | 46,437.7 | 49,127.4 | 53,572.4 | 51,538.8 | 9.0             | -3.8 |
| <b>Interbank GIRO</b>                                |                    |          |          |          |          |                 |      |
| Transaction volume                                   | 70.1               | 83.4     | 113.6    | 149.1    | 174.1    | 31.2            | 16.8 |
| Transaction value                                    | 211.7              | 285.3    | 432.5    | 636.6    | 767.6    | 47.2            | 20.6 |
|                                                      | '000/RM million    |          |          |          |          | % Annual change |      |
| <b>FPX<sup>2</sup></b>                               |                    |          |          |          |          |                 |      |
| Transaction volume                                   | 1,440.9            | 2,211.7  | 3,099.7  | 4,648.8  | 8,655.6  | 50.0            | 86.2 |
| Transaction value                                    | 821.6              | 1,372.2  | 4,191.4  | 8,602.5  | 14,784.4 | 105.2           | 71.9 |
| <b>Direct Debit</b>                                  |                    |          |          |          |          |                 |      |
| Transaction volume                                   | 708.8              | 924.2    | 1,278.4  | 1,678.7  | 1,982.4  | 31.3            | 18.1 |
| Transaction value                                    | 8,248.2            | 11,251.9 | 14,796.2 | 19,310.7 | 25,255.8 | 30.5            | 30.8 |

<sup>1</sup> Malaysia's large-value payment system, Real-time Electronic Transfer of Funds and Securities System

<sup>2</sup> Financial Process Exchange

Source: Bank Negara Malaysia

Table A.24

| <b>Payment and Securities Transactions Handled by RENTAS</b> |                 |                 |                 |                 |                 |                 |              |
|--------------------------------------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|--------------|
|                                                              | 2012            | 2013            | 2014            | 2015            | 2016            | 2015            | 2016         |
| <b>Transaction Volume</b>                                    | '000            |                 |                 |                 |                 | % Annual change |              |
| <b>Total</b>                                                 | <b>3,588.7</b>  | <b>3,967.1</b>  | <b>4,367.2</b>  | <b>4,403.4</b>  | <b>4,449.3</b>  | <b>0.8</b>      | <b>1.0</b>   |
| <b>IFTS<sup>1</sup></b>                                      | <b>3,467.5</b>  | <b>3,847.7</b>  | <b>4,257.3</b>  | <b>4,284.1</b>  | <b>4,320.5</b>  | <b>0.6</b>      | <b>0.9</b>   |
| Money market operations                                      | 90.8            | 87.3            | 88.1            | 86.8            | 84.5            | -1.5            | -2.6         |
| Foreign exchange settlement                                  | 91.8            | 100.0           | 107.6           | 126.8           | 126.3           | 17.8            | -0.4         |
| of which: USD CHATS <sup>2</sup>                             | 41.2            | 47.8            | 53.7            | 63.0            | 55.8            | 17.3            | -11.4        |
| Third party transactions                                     | 2,701.5         | 3,020.2         | 3,383.8         | 3,317.5         | 3,445.6         | -2.0            | 3.9          |
| Others                                                       | 583.4           | 640.2           | 677.8           | 753.0           | 664.2           | 11.1            | -11.8        |
| <b>SSDS<sup>3</sup></b>                                      | <b>121.2</b>    | <b>119.4</b>    | <b>110.0</b>    | <b>119.3</b>    | <b>128.8</b>    | <b>8.5</b>      | <b>8.0</b>   |
| <b>Transaction Value</b>                                     | RM billion      |                 |                 |                 |                 | % Annual change |              |
| <b>Total</b>                                                 | <b>46,169.4</b> | <b>46,437.7</b> | <b>49,127.4</b> | <b>53,572.4</b> | <b>51,538.8</b> | <b>9.0</b>      | <b>-3.8</b>  |
| <b>IFTS<sup>1</sup></b>                                      | <b>43,153.2</b> | <b>43,903.3</b> | <b>46,743.1</b> | <b>51,332.7</b> | <b>49,585.5</b> | <b>9.8</b>      | <b>-3.4</b>  |
| Money market operations                                      | 17,520.1        | 18,656.7        | 18,935.5        | 23,741.9        | 24,118.9        | 25.4            | 1.6          |
| Foreign exchange settlement                                  | 3,955.7         | 3,839.6         | 4,966.6         | 5,190.4         | 4,941.8         | 4.5             | -4.8         |
| of which: USD CHATS <sup>2</sup>                             | 2,401.6         | 2,594.8         | 3,595.2         | 3,700.9         | 3,877.8         | 2.9             | 4.8          |
| Third party transactions                                     | 12,892.9        | 12,819.7        | 13,609.5        | 12,707.7        | 12,794.9        | -6.6            | 0.7          |
| Others                                                       | 8,784.4         | 8,587.2         | 9,231.5         | 9,692.7         | 7,729.8         | 5.0             | -20.3        |
| <b>SSDS<sup>3</sup></b>                                      | <b>3,016.3</b>  | <b>2,534.5</b>  | <b>2,384.3</b>  | <b>2,239.7</b>  | <b>1,953.3</b>  | <b>-6.1</b>     | <b>-12.8</b> |
| <b>Turnover to GDP (times)</b>                               | <b>47.5</b>     | <b>45.6</b>     | <b>44.4</b>     | <b>46.3</b>     | <b>41.9</b>     |                 |              |
| <b>Daily Average:</b>                                        |                 |                 |                 |                 |                 |                 |              |
| Transaction volume ('000)                                    | 14.6            | 16.1            | 17.8            | 17.9            | 18.0            | 0.8             | 0.6          |
| Transaction value (RM billion)                               | 188.4           | 188.0           | 199.7           | 217.8           | 208.7           | 9.0             | -4.2         |

<sup>1</sup> Interbank Funds Transfer System

<sup>2</sup> Payment versus Payment (PvP) link established in 2006, for interbank settlement of ringgit-US dollar trades through RENTAS USD CHATS

<sup>3</sup> Scripless Securities Depository System for Malaysian Government Securities, Treasury bills, and scripless public debt securities

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia and Department of Statistics, Malaysia

Table A.25

**Payment Channels: Transaction Volume and Value**

| Transaction Volume            | 2012       | 2013      | 2014      | 2015      | 2016      | 2015            | 2016 |
|-------------------------------|------------|-----------|-----------|-----------|-----------|-----------------|------|
|                               | Million    |           |           |           |           | % Annual change |      |
| Internet banking <sup>1</sup> | 227.3      | 269.8     | 350.7     | 453.7     | 588.3     | 29.4            | 29.7 |
| <i>Individual</i>             | 161.7      | 194.8     | 252.2     | 323.1     | 434.7     | 28.1            | 34.6 |
| <i>Corporate</i>              | 65.6       | 75.0      | 98.5      | 130.6     | 153.6     | 32.7            | 17.6 |
| Mobile banking <sup>1</sup>   | 7.1        | 16.1      | 23.3      | 31.6      | 62.6      | 35.6            | 98.0 |
| ATM <sup>2</sup>              | 43.0       | 42.4      | 51.3      | 68.7      | 71.3      | 34.1            | 3.7  |
| Transaction Value             | RM million |           |           |           |           |                 |      |
| Internet banking              | 2,978,435  | 3,457,627 | 4,108,271 | 4,718,010 | 5,216,218 | 14.8            | 10.6 |
| <i>Individual</i>             | 171,825    | 224,852   | 304,177   | 352,076   | 463,746   | 15.7            | 31.7 |
| <i>Corporate</i>              | 2,806,610  | 3,232,775 | 3,804,094 | 4,365,934 | 4,752,472 | 14.8            | 8.9  |
| Mobile banking                | 4,237      | 9,243     | 14,677    | 20,565    | 32,972    | 40.1            | 60.3 |
| ATM <sup>2</sup>              | 37,052     | 40,987    | 52,047    | 57,529    | 65,273    | 10.5            | 13.5 |

<sup>1</sup> Exclude non-financial transactions<sup>2</sup> Refer to payment transactions via ATM, including own and third party funds transfer. Exclude cash withdrawals

Note: Figures may not necessarily add up due to rounding

Source: Bank Negara Malaysia

Table A.26

**Payment Transactions by Channels**

| Transaction Volume                 | 2015             |                |        | 2016             |                |        |
|------------------------------------|------------------|----------------|--------|------------------|----------------|--------|
|                                    | Internet banking | Mobile banking | ATM    | Internet banking | Mobile banking | ATM    |
|                                    | Million          |                |        |                  |                |        |
| Funds transfer                     | 238.3            | 17.1           | 54.7   | 324.2            | 33.7           | 57.2   |
| Bill payment <sup>1</sup>          | 74.4             | 5.1            | 2.5    | 101.7            | 11.7           | 2.6    |
| Investment in share and unit trust | 6.6              | -              | 0.1    | 6.3              | -              | 0.1    |
| Re-load                            | 24.9             | 6.9            | 3.0    | 27.3             | 11.9           | 2.1    |
| Card and loan repayment            | 26.0             | 2.2            | 8.4    | 29.9             | 3.4            | 9.3    |
| Transaction Value                  | RM million       |                |        |                  |                |        |
| Funds transfer                     | 3,003,347        | 16,770         | 47,594 | 3,667,584        | 27,480         | 53,467 |
| Bill payment <sup>1</sup>          | 19,119           | 684            | 614    | 26,646           | 996            | 774    |
| Investment in share and unit trust | 59,752           | -              | 1,174  | 54,582           | -              | 1,246  |
| Re-load                            | 513              | 123            | 148    | 546              | 201            | 111    |
| Card and loan repayment            | 34,847           | 2,703          | 7,903  | 40,024           | 3,973          | 9,443  |

<sup>1</sup> Include insurance payments

Source: Bank Negara Malaysia



Table A.27

**ATM Cash Withdrawals in Malaysia**

|                                    | 2012       | 2013      | 2014      | 2015      | 2016      | 2015            | 2016 |
|------------------------------------|------------|-----------|-----------|-----------|-----------|-----------------|------|
| Volume of cash withdrawals         | Million    |           |           |           |           | % Annual change |      |
|                                    | 565.7      | 626.2     | 687.8     | 705.9     | 761.3     | 2.6             | 7.9  |
| Value of cash withdrawals          | RM million |           |           |           |           |                 |      |
|                                    | 294,149.1  | 310,446.4 | 339,725.6 | 354,702.9 | 389,554.6 | 4.4             | 9.8  |
| Average value per transaction (RM) | 520.0      | 495.7     | 493.9     | 502.5     | 511.7     | 1.7             | 1.8  |

Source: Bank Negara Malaysia

Table A.28

**Number of Electronic Funds Transfer at Point-of-Sale (EFTPOS) Terminals**

| As at end of period               | 2012    | 2013    | 2014    | 2015    | 2016    |
|-----------------------------------|---------|---------|---------|---------|---------|
|                                   | Unit    |         |         |         |         |
| Total terminals <sup>1</sup>      | 220,293 | 227,156 | 229,997 | 274,986 | 323,033 |
| of which:                         |         |         |         |         |         |
| International brand payment cards | 217,771 | 224,514 | 227,152 | 269,496 | 315,934 |
| Domestic debit <sup>2</sup>       | 140,127 | 159,357 | 185,065 | 212,029 | 250,764 |
| Terminals per 1,000 inhabitants   | 7       | 8       | 7       | 9       | 10      |

<sup>1</sup> Terminals that accept international brand payment card and/or domestic debit. Include terminals acquired by non-bank acquirers<sup>2</sup> Domestic PIN-based ATM card

Source: Bank Negara Malaysia

Table A.29

**Number of Cards and Users of Payment Instruments and Channels**

| As at end of period                   | 2012   | 2013   | 2014   | 2015   | 2016   | 2015            | 2016  |
|---------------------------------------|--------|--------|--------|--------|--------|-----------------|-------|
|                                       | '000   |        |        |        |        | % Annual change |       |
| Number of cards/accounts:             |        |        |        |        |        |                 |       |
| Credit card                           | 8,150  | 8,128  | 8,048  | 8,612  | 9,178  | 7.0             | 6.6   |
| Charge card                           | 138    | 155    | 142    | 143    | 130    | 0.8             | -8.9  |
| Debit card                            | 34,630 | 38,226 | 41,439 | 42,962 | 43,669 | 3.7             | 1.6   |
| of which: Domestic debit <sup>1</sup> | 17,237 | 17,363 | 16,785 | 15,315 | 11,844 | -8.8            | -22.7 |
| E-money                               | 91,008 | 97,735 | 45,557 | 55,825 | 60,703 | 22.5            | 8.7   |
| Number of subscribers:                |        |        |        |        |        |                 |       |
| Internet banking                      | 13,678 | 15,524 | 17,600 | 19,751 | 22,774 | 12.2            | 15.3  |
| Individual                            | 13,430 | 15,225 | 17,254 | 19,176 | 22,021 | 11.1            | 14.8  |
| Corporate                             | 248    | 299    | 346    | 575    | 753    | 66.2            | 31.0  |
| Penetration rate to population (%)    | 45.9   | 51.4   | 57.3   | 63.3   | 71.9   |                 |       |
| Mobile banking                        | 2,446  | 4,379  | 5,639  | 7,279  | 8,945  | 29.1            | 22.9  |
| Penetration rate to population (%)    | 8.2    | 14.5   | 18.4   | 23.3   | 28.3   |                 |       |

<sup>1</sup> Domestic PIN-based ATM card

Source: Bank Negara Malaysia

Table A.30

| Number of Participants and Instrument Issuers |           |           |           |           |           |
|-----------------------------------------------|-----------|-----------|-----------|-----------|-----------|
| As at end of period                           | 2012      | 2013      | 2014      | 2015      | 2016      |
|                                               | Unit      |           |           |           |           |
| <b>RENTAS</b>                                 | <b>68</b> | <b>68</b> | <b>67</b> | <b>67</b> | <b>68</b> |
| Bank Negara Malaysia                          | 1         | 1         | 1         | 1         | 1         |
| Banks                                         | 56        | 55        | 54        | 54        | 55        |
| DFIs                                          | 6         | 6         | 6         | 6         | 6         |
| Non-banks                                     | 5         | 6         | 6         | 6         | 6         |
| <b>eSPICK</b>                                 | <b>48</b> | <b>47</b> | <b>46</b> | <b>46</b> | <b>47</b> |
| <b>Credit card</b>                            | <b>27</b> | <b>25</b> | <b>26</b> | <b>27</b> | <b>26</b> |
| Banks                                         | 23        | 22        | 23        | 24        | 24        |
| Non-banks                                     | 4         | 3         | 3         | 3         | 2         |
| <b>Debit card<sup>1</sup></b>                 | <b>22</b> | <b>25</b> | <b>25</b> | <b>26</b> | <b>28</b> |
| International debit                           | 10        | 12        | 13        | 14        | 11        |
| Domestic debit <sup>2</sup>                   | 13        | 13        | 13        | 13        | 16        |
| Others <sup>3</sup>                           | 10        | 11        | 11        | 11        | 20        |
| <b>Charge card</b>                            | <b>7</b>  | <b>8</b>  | <b>7</b>  | <b>7</b>  | <b>7</b>  |
| Banks                                         | 5         | 7         | 6         | 6         | 7         |
| Non-banks                                     | 2         | 1         | 1         | 1         | -         |
| <b>E-money<sup>4</sup></b>                    | <b>25</b> | <b>25</b> | <b>24</b> | <b>23</b> | <b>28</b> |
| Banks                                         | 7         | 6         | 7         | 5         | 5         |
| Non-banks                                     | 18        | 19        | 17        | 18        | 23        |
| <b>Internet banking</b>                       | <b>29</b> | <b>29</b> | <b>30</b> | <b>30</b> | <b>30</b> |
| <b>Mobile banking</b>                         | <b>13</b> | <b>13</b> | <b>13</b> | <b>13</b> | <b>13</b> |
| <b>FPX<sup>5</sup></b>                        | <b>10</b> | <b>12</b> | <b>13</b> | <b>16</b> | <b>22</b> |
| Banks                                         | 7         | 9         | 10        | 13        | 18        |
| Non-banks                                     | 3         | 3         | 3         | 3         | 4         |
| <b>Direct Debit</b>                           | <b>16</b> | <b>17</b> | <b>17</b> | <b>14</b> | <b>14</b> |
| Banks                                         | 13        | 14        | 14        | 14        | 14        |
| Non-banks                                     | 3         | 3         | 3         | -         | -         |
| <b>Interbank GIRO</b>                         | <b>28</b> | <b>29</b> | <b>30</b> | <b>30</b> | <b>30</b> |

<sup>1</sup> There are banks issuing more than one type of debit card

<sup>2</sup> Domestic PIN-based ATM card

<sup>3</sup> Cards with both international debit and domestic PIN-based debit card functions

<sup>4</sup> Include international brand prepaid card

<sup>5</sup> Financial Process Exchange

Source: Bank Negara Malaysia

## Acronyms and Abbreviations

|         |                                                                       |
|---------|-----------------------------------------------------------------------|
| ABIF    | ASEAN Banking Integration Framework                                   |
| AEC     | ASEAN Economic Community                                              |
| AFIR    | Asian Forum of Insurance Regulators                                   |
| AICB    | Asian Institute of Chartered Bankers                                  |
| AIRM    | ASEAN Insurance Regulators' Meeting                                   |
| AITRI   | ASEAN Insurance Training and Research Institute                       |
| AKPK    | Credit Counselling and Debt Management Agency                         |
| AML/CFT | Anti-Money Laundering and Countering Financing of Terrorism           |
| AMLA    | Anti-Terrorism Financing and Proceeds of Unlawful Activities Act 2001 |
| AOO     | Appointed Overseas Office                                             |
| APIs    | application program interfaces                                        |
| AS1     | first adverse scenario                                                |
| AS2     | second adverse scenario                                               |
| ASAS    | Association of Shariah Advisors                                       |
| ATMs    | automated teller machines                                             |
| BAFIA   | Banking and Financial Institutions Act 1989                           |
| BCBS    | Basel Committee on Banking Supervision                                |
| BSC     | balanced scorecard                                                    |
| CAGR    | compounded annual growth rate                                         |
| CAR     | capital adequacy ratio                                                |
| CASTD   | cash-to-short-term debt                                               |
| CCRIS   | Central Credit Reference Information System                           |
| CET1    | common equity tier 1                                                  |
| CGC     | Credit Guarantee Corporation Berhad                                   |
| CIC     | cash-in-circulation                                                   |
| CIIF    | Chartered Institute of Islamic Finance Professionals                  |
| CNH     | China Offshore Spot                                                   |
| CPMI    | Committee on Payments and Market Infrastructures                      |
| CVI     | Corporate Value Intent                                                |
| DAR     | debt-at-risk                                                          |
| DBGs    | domestic banking groups                                               |
| DD      | direct debit                                                          |
| DFIs    | development financial institutions                                    |
| DSR     | debt service ratio                                                    |
| EMEAP   | Executives' Meeting of East Asia-Pacific                              |
| EMEs    | emerging market economies                                             |

|         |                                                        |
|---------|--------------------------------------------------------|
| EMV     | Europay-MasterCard-Visa                                |
| ePIF    | e-Payment Incentive Fund                               |
| ESG     | Environmental, Social and Governance                   |
| eSPICK  | National Electronic Cheque Information Clearing System |
| EU      | European Union                                         |
| FATF    | Financial Action Task Force                            |
| FCA     | Financial Consumer Alerts                              |
| FCY     | foreign currency                                       |
| FEN     | Financial Education Network                            |
| FinTech | financial technology                                   |
| FIUs    | Financial Intelligence Units                           |
| FMC     | Financial Markets Committee                            |
| FPX     | Financial Process Exchange                             |
| FSA     | Financial Services Act 2013                            |
| FSC     | Financial Stability Committee                          |
| FSPs    | financial service providers                            |
| FTEG    | Financial Technology Enabler Group                     |
| FTP     | funds transfer pricing                                 |
| FX      | foreign exchange                                       |
| GDP     | gross domestic product                                 |
| GII     | Government Investment Issues                           |
| GNI     | gross national income                                  |
| GOCO    | Group of Compliance Officers                           |
| HQLA    | high-quality liquid assets                             |
| IAF     | Investment Account Framework                           |
| IAIGs   | internationally-active insurance groups                |
| IAIS    | International Association of Insurance Supervisors     |
| IAP     | Investment Account Platform                            |
| IASB    | International Accounting Standards Board               |
| IBFIM   | Islamic Banking and Finance Institute Malaysia         |
| IBFT    | Interbank Fund Transfer                                |
| IBG     | Interbank GIRO                                         |
| ICAAP   | Internal Capital Adequacy Assessment Process           |
| ICLIF   | Iclif Leadership and Governance Centre                 |
| ICR     | interest coverage ratio                                |
| ICS     | Risk-Based Global Insurance Capital Standard           |
| ICT     | Information and Communication Technology               |
| IF      | InnoFest Islamic Finance Innovation Festival           |

|         |                                                       |
|---------|-------------------------------------------------------|
| IFSB    | Islamic Financial Services Board                      |
| IIID    | Integrated Income Indebtedness Database               |
| INCEIF  | International Centre for Education in Islamic Finance |
| INI     | Islamic Negotiable Instrument                         |
| IOSCO   | International Organisation of Securities Commissions  |
| ISRA    | International Shariah Research Academy                |
| ITCL    | Internal Target Capital Level                         |
| JomPAY  | National Electronic Bill Payment Scheme               |
| KYC     | Know-Your-Customer                                    |
| LCR     | Liquidity Coverage Ratio                              |
| LDR     | loan-to-deposit ratio                                 |
| LF      | Liquidity Framework                                   |
| LIBFC   | Labuan International Business and Financial Centre    |
| LIBOR   | London Interbank Offered Rate                         |
| LIFBs   | locally incorporated foreign banks                    |
| LTF     | loan-to-fund                                          |
| LTFE    | loan-to-fund-and-equity                               |
| MAMSB   | Malaysian Association of Money Services Business      |
| MATRADE | Malaysian External Trade Development Corporation      |
| MCCS    | Malaysian Chip Card Specification                     |
| MDeC    | Malaysia Digital Economy Corporation                  |
| MDF     | Market Development Fund                               |
| MDR     | Merchant Discount Rates                               |
| MEPS    | Malaysian Electronic Payment System Sdn. Bhd.         |
| MFRS    | Malaysian Financial Reporting Standards               |
| MGS     | Malaysian Government Securities                       |
| MHIT    | medical and health insurance/takaful                  |
| MHPI    | Malaysian House Price Index                           |
| MIA     | Malaysian Institute of Accountants                    |
| MIDA    | Malaysian Investment Development Authority            |
| MMIP    | Malaysian Motor Insurance Pool                        |
| MRC     | Motordata Research Consortium Sdn. Bhd.               |
| MSB     | money services business                               |
| MSBA    | Money Services Business Act 2011                      |
| MTDC    | Malaysian Technology Development Corporation          |
| NBFIs   | non-bank financial institutions                       |
| NDF     | non-deliverable forward                               |
| NID     | Negotiable Instrument of Deposit                      |

|          |                                                              |
|----------|--------------------------------------------------------------|
| NPAC     | National Payments Advisory Council                           |
| NPOs     | non-profit organisations                                     |
| NRIC     | National Registration Identity Card                          |
| NSFR     | Net Stable Funding Ratio                                     |
| O&G      | oil and gas                                                  |
| OFS      | Ombudsman for Financial Services                             |
| OPR      | overnight policy rate                                        |
| OPTs     | Outdoor Payment Terminals                                    |
| ORION    | Operational Risk Integrated Online Network                   |
| P2P      | peer-to-peer                                                 |
| PD       | probability of default                                       |
| PFMI     | Principles for Financial Market Infrastructures              |
| PIN      | Personal Identification Number                               |
| POS      | point-of-sale                                                |
| PRAD     | provision of risk margin for adverse deviation               |
| PUNB     | Perbadanan Usahawan Nasional Berhad                          |
| PWDs     | persons with disabilities                                    |
| RENTAS   | Real-time Electronic Transfer of Funds and Securities System |
| RMP      | Royal Malaysian Police                                       |
| RWA      | risk-weighted assets                                         |
| SAC      | Shariah Advisory Council                                     |
| SAP      | Strategic Action Plan                                        |
| SIRC     | State Islamic Religious Councils                             |
| SME Corp | SME Corporation Malaysia                                     |
| SMEs     | small and medium enterprises                                 |
| SPCG     | Service Provider Consultative Group                          |
| SRI      | Sustainable, Responsible and Impact Investing                |
| SRR      | statutory reserve requirement                                |
| TCR      | total capital ratio                                          |
| TERAJU   | Unit Peneraju Agenda Bumiputera                              |
| TF       | terrorism financing                                          |
| TOF      | Takaful Operational Framework                                |
| UCG      | User Consultative Group                                      |
| US       | United States                                                |
| WCPSS    | Working Committee on Payment and Settlement Systems          |
| WGPSS    | Working Group on Payment and Settlement Systems              |