



**BANK NEGARA MALAYSIA**  
CENTRAL BANK OF MALAYSIA

Financial Stability  
Review  
Second Half

**2022**

**FSR**



**BANK NEGARA MALAYSIA**  
CENTRAL BANK OF MALAYSIA

# Preface

This Financial Stability Review – Second Half 2022 provides Bank Negara Malaysia's assessment on current and potential risks to financial stability and the resilience of the Malaysian financial system to sustain its financial intermediation role in the economy. It also reports on any actions that have been taken to manage risks to financial stability and contains box article(s) on topics of special interest.

This publication is intended to promote greater awareness on issues and developments affecting financial stability.

This document uses data available up to 31 December 2022, unless otherwise stated.



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### Financial Institution Soundness and Resilience

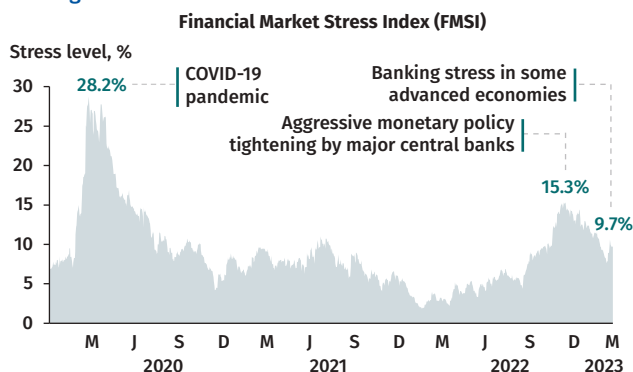
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# Key Highlights on Financial Stability Review – Second Half 2022

## Malaysian financial markets remained resilient despite heightened volatility in global markets

Market stress has risen amid recent developments in the global banking sector



Orderly domestic market conditions continued to be preserved, supported by several key factors

- 1 Active market risk management and hedging strategies by financial institutions
- 2 Deep and liquid domestic markets
- 3 Resilient domestic institutional investors

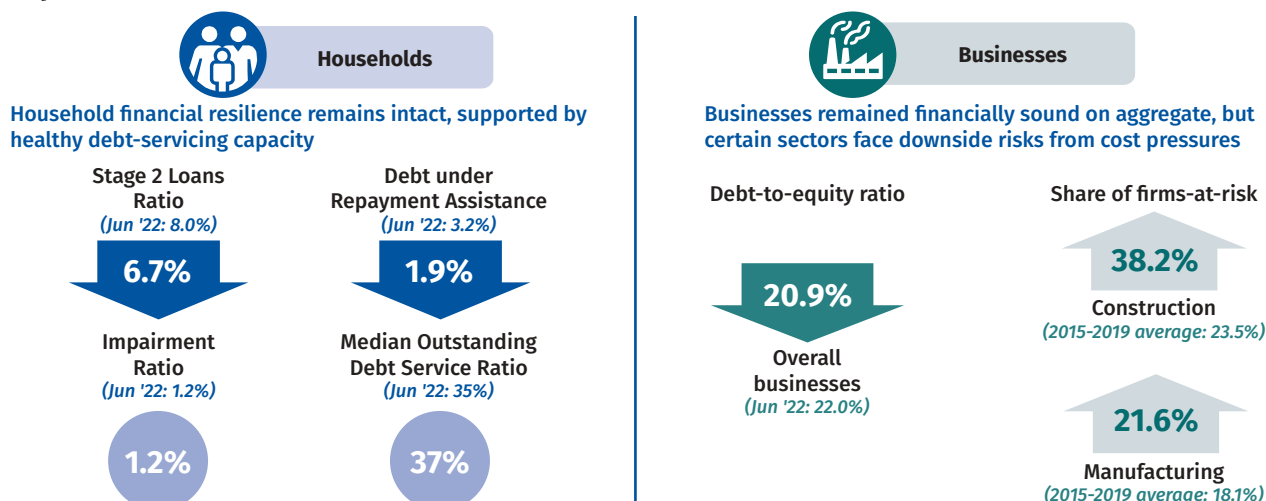
## Financial institutions remained well-positioned to support financial intermediation and sustain the economic recovery

Banks maintained healthy capital and liquidity buffers to support financial intermediation

Insurers and takaful operators remained well-capitalised, above the regulatory minimum



## Credit risks from household and business sectors remained manageable, supported by the continued improvement in labour market conditions and business activities



## Banks have prudent provisioning buffers to absorb increases in credit losses while the recovery in earnings has helped sustain capital buffers



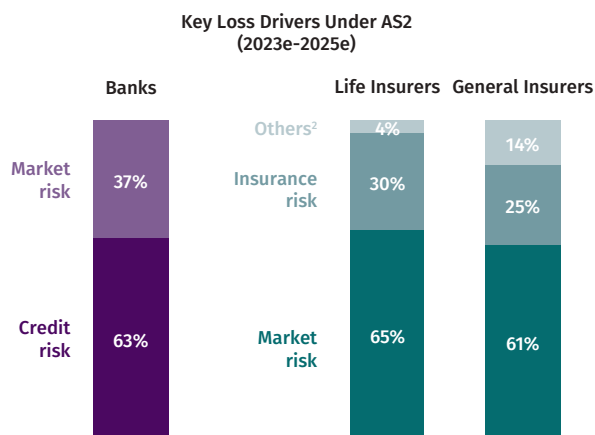
<sup>1</sup> Including regulatory reserves

## Stress test reaffirms capacity of financial institutions to withstand adverse shocks and reduce the impact of economic slowdowns

Financial institutions' resilience were assessed against two scenarios spanning over 3-years that are more severe than the 2008 Global Financial Crisis and the 2020 pandemic

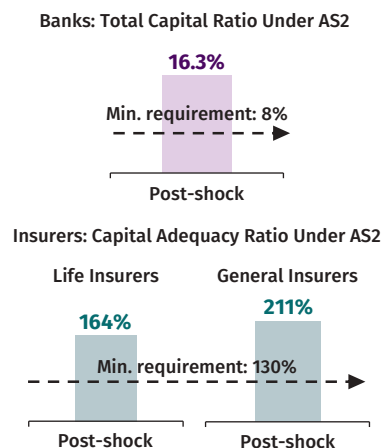
**Adverse Scenario 1** Sharp GDP contraction followed by a quick recovery

Losses in the banking system and insurance sector are largely driven by credit and market risks...



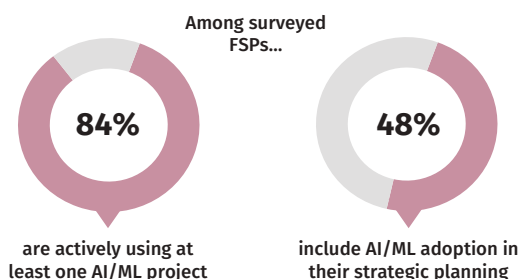
**Adverse Scenario 2** Milder GDP contraction followed by slow growth

...but post-shock capital ratios remained well above regulatory minima

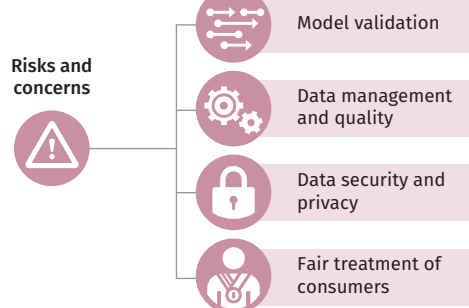


## Box Article: Artificial Intelligence in the Malaysian Financial System: Opportunities, Risks, and the Way Forward

Survey shows many financial service providers (FSPs) are actively using AI/ML



BNM continues to promote responsible use of AI/ML by FSPs



## Box Article: Managing Transmission of Vulnerabilities in Commodity Markets Associated with the Application of Tawarruq in the Islamic Banking System

Tawarruq transactions were exposed to supply and price shocks stemming from vulnerabilities in commodity markets...

- Geopolitical tensions**
  - Military conflict in Ukraine increased volatility in metals and crude oil price
- Domestic labour shortages**
  - Palm oil harvesting impacted by foreign labour scarcity due to border closures
- Climate-related risks**
  - Physical and transition risks affecting mining and agri-based commodities

...however, risks were mitigated by robust risk management, with long-term solutions in pipeline

- Availability of diversified commodities and multiple commodity brokers and exchanges used in tawarruq transactions
- All commodity transactions are conducted on a spot basis with fixed intra-day price, insulating Islamic banks from price volatility
- Concerted efforts to develop alternative Shariah contracts beyond tawarruq

e Estimate

<sup>2</sup> Refers to losses from credit risk (including reinsurance and corporate bonds default) and underwriting risk

Source: Bank Negara Malaysia



# Overview





# Overview

Global financial conditions tightened in the second half of 2022 as major central banks aggressively increased policy rates to combat elevated levels of inflation. Markets remained volatile amid uncertainties in the global growth outlook and shifts in expectations on monetary policy. More recently, banking system stresses in some advanced economies have resulted in further volatility in the bond and equity markets globally. These global developments also affected the Malaysian financial markets, resulting in higher volatility observed in the foreign exchange (FX), bond and money markets.

Domestically, market stress levels in the second half of the year rose to levels last seen in mid-2020, but remained well below the peak observed at the onset of the pandemic in March 2020. Despite the heightened volatility in domestic financial markets, market conditions have remained orderly with the smooth intermediation of two-way flows in the bond and equity markets. This has supported fundraising by businesses through the capital market. Liquidity in the government bond market has remained healthy. Notably, liquidity conditions in the banking system have been largely unaffected by the withdrawal of regulatory flexibilities provided during the pandemic and recent banking stress in the US and Europe. In the foreign exchange market, movements in the ringgit continued to be influenced by external factors amid an evolving global growth and inflation outlook. Adjustments to the ringgit have been orderly, supported by sustained liquidity in the onshore foreign exchange market. This will continue to help businesses and market participants manage their foreign exchange exposures.

Businesses benefitted from the reopening of economic sectors, which supported consumer spending on discretionary goods and services. The overall debt-servicing ability of businesses remained healthy with an interest coverage ratio (ICR) of 6.0 times, although sector- and firm-level variations

continued to reflect an uneven recovery. In some sectors, firms continue to face challenges from significantly higher input costs due to supply-side disruptions, geopolitical developments, and a weaker ringgit. The share of firms-at-risk remains elevated and has increased slightly to 25.1% (2Q 2022: 24.6%). Notwithstanding this, leading indicators from banks suggest that business impairments should remain relatively contained. The share of business loans with increased credit risk (Stage 2 loans) continued to decline, while the share of loans, including SME loans, under repayment assistance programmes has continued to fall sharply to 5.9% of total business loans (June 2022: 14.8%). A small number of SMEs continue to face repayment difficulties given higher input cost pressures, exacerbated by their lower buffers and limited pricing power. Nevertheless, increases in delinquencies from this segment remain within banks' expectations. Going forward, the global and domestic growth outlook and cost pressures will remain the key drivers of credit risks in the near term, while the impact of climate transition and physical risks on businesses pose longer-term risks to the financial sector. Banks remain vigilant over these risks and are making good strides towards strengthening climate risk management practices and supporting the financing needs of businesses in transition.

Improvements in income and labour market conditions have helped preserve the overall resilience of households amid a slightly faster expansion of household lending. The aggregate value of household financial assets remains above two times that of household debt. The median debt-to-income (DTI) ratio has been stable at 1.5 times, as credit growth continues to closely track household incomes. Other measures of debt repayment ability also remained healthy, including prudent debt service ratios (DSRs) observed for newly approved and outstanding household loans (median: 43% and 37%, respectively). A review of new floating-rate loans disbursed by banks when Overnight Policy Rate (OPR)

was at a historical low of 1.75% affirmed that these loans continue to hold up well following the successive OPR increases – indicating that banks continue to observe sound lending standards during this period. More broadly, household borrowers are expected to be able to withstand increases in borrowing costs, consistent with past studies by the Bank which show that household debt servicing is more affected by income and employment shocks rather than borrowing costs. In the lower-income segment of households, the larger share of loan accounts that are on fixed-rate terms, which do not fluctuate with changes in OPR, further mitigates credit risk.

The share of household loans classified as Stage 2 by banks has declined further to 6.7% (June 2022: 8.0%), as more borrowers continue to exit repayment assistance programmes and complete a minimum 6-month observation period of loan servicing. Looking ahead, household impairment and delinquency ratios are expected to normalise closer to pre-pandemic levels as the broad-based repayment assistance programmes gradually unwind. Overall, household asset quality measures are so far unfolding well within banks' earlier expectations. This is also supporting the capacity and willingness of banks to continue providing bespoke repayment assistance to borrowers that still need it.

Banks in Malaysia continue to maintain healthy liquidity buffers above the regulatory minimum. At the system-wide level, the Liquidity Coverage and Net Stable Funding ratios remained healthy at 154.0% and 118.2%, respectively. This has enabled banks to support lending activities, while providing buffers against the impact of rising interest rates on high-quality liquid assets (HQLA) held to meet liquidity needs and other liquidity shocks. Liquidity and funding risks associated with banks' exposure to large depositors, who are generally more sensitive to rate movements, remain manageable although some upward pressure on interbank rates has been observed. The bulk (80%) of banks' HQLA are in the form of placements with the Bank or holdings of government bonds, which can be pledged in the interbank market or with the Bank for additional liquidity under the Bank's existing standing facilities and Restricted Committed Liquidity Facility (RCLF).<sup>1</sup>

<sup>1</sup> The RCLF was introduced by the Bank in 2016 to allow banks to obtain liquidity for tenures greater than one month from the Bank. Banks that intend to use the RCLF will be charged a fixed facility rate and will be required to designate a pool of unencumbered eligible securities that would be sufficient to support the total size of the RCLF.

Significant deposit concentrations combined with weak capital buffers that could materially increase vulnerabilities to deposit runs are also not currently observed among banks in Malaysia.

The banking system remains well-capitalised. The total capital ratio of the banking system stood at 18.8% at the end of 2022, with capital buffers of RM134.8 billion in excess of the regulatory minimum. Improvements in profitability, along with capital conservation strategies being maintained by most banks, will further reinforce the capacity of banks to support intermediation and absorb unexpected losses. Credit costs have begun to normalise to pre-pandemic levels and are expected to decline further as banks start to write back some of the pandemic-related management overlay provisions. This will provide additional support for banks' earnings and capital going forward. Banks, however, remain vigilant over downside risks. This could arise from weaker-than-expected economic growth and rising cost pressures affecting loan performance, as well as heightened financial market volatility.

The insurance and takaful sector similarly remained resilient, with an aggregate capital adequacy ratio of 226% and excess capital buffers of RM37.5 billion above the regulatory minimum as at December 2022. Overall profitability for insurance and takaful funds improved on the back of higher investment returns which helped to offset the higher payouts for medical claims. The general insurance and takaful sector also performed better, in part due to the absence of large claims recorded in the first half of the year which were caused by severe floods at the end of 2021. Looking ahead, insurers and takaful operators (ITOs) will remain vulnerable to heightened financial market volatility given their sizeable bond and equity investments. The continued normalisation of claims experience in the medical and motor segments, as well as the increasing frequency and severity of physical events such as floods will have a bearing on ITOs' future performance. Strong capital and sound reinsurance arrangements remain important to ensure that ITOs are adequately resilient against downside risks from such developments.

The latest macro and micro stress tests by the Bank, incorporating augmented and additional stress factors, continue to affirm the resilience of financial institutions against unexpected losses from severe macroeconomic and financial shocks. Post-shock aggregate capital ratios for banks (16.3%), life insurers (164%) and general

insurers (211%) remain comfortably above regulatory minima at the end of the stress horizon (2025). This will continue to firmly underpin the capacity of financial institutions to meet the financing and protection needs of households and businesses.

Operational and cyber resilience remains a top priority for financial institutions and the Bank amid the increase in digitalisation and technology adoption in finance. Although operational losses of financial institutions have remained low, the number of reported cases of online banking fraud have been rising in line with similar trends observed globally. In response, international bodies, governments and financial regulators are increasingly focused on strengthening the

national and financial system's prevention, defence, recovery and response capabilities against cyber-financial crimes and fraud. In Malaysia and several other countries, national anti-scam centres have been established. The Bank and the financial industry continue to focus on raising public awareness on cyber hygiene measures and various scam tactics. More broadly, financial institutions continue to prioritise the management of technology risks and invest heavily in upgrading their information technology (IT) infrastructure. This is accompanied by ongoing work led by the Bank to conduct joint crisis simulation exercises in the financial industry aimed at testing and further strengthening existing response and recovery plans in mitigating widespread operational disruptions.



# Key Developments in the Second Half of 2022

9	Market Risk
13	Credit Risk
23	Operational Risk
27	<i>Box Article: Artificial Intelligence in the Malaysian Financial System: Opportunities, Risks, and the Way Forward</i>



# Key Developments in the Second Half of 2022

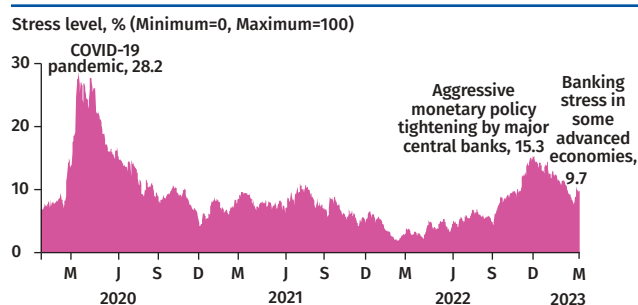
## MARKET RISK

### Domestic financial market conditions remained orderly amid heightened volatility in the global financial markets

The global financial markets continued to be driven by changes in the anticipated monetary policy stance of major central banks and the global growth outlook. Inflation remained elevated amid the slower growth in major economies in the second half of 2022. Major central banks have responded by aggressively increasing policy rates. This has led to a tightening in global financial conditions. These global developments also affected Malaysian financial markets. Despite the stronger domestic economic performance, market stress, as measured by the Financial Market Stress Index (FMSI) increased significantly during the period. This was driven by the higher volatility observed in the foreign exchange (FX), bond and money markets. Stress levels rose to levels last seen in mid-2020, but remained well below the peak observed at the onset of the pandemic in March 2020 (Chart 1.1). The recent global market volatility due to concerns in the banking sector of some advanced economies had minimal impact on Malaysian financial markets beyond some weakness observed in the domestic equity market. The Bank remains vigilant of potential spillover risks from the global banking sector to the domestic financial markets.

The domestic equity market declined in tandem with regional markets (Chart 1.2). Performance was weighed down by profit-taking activities in the technology and healthcare counters amid an environment of rising interest rates and waning concerns over the pandemic. Notwithstanding this, an easing in global financial conditions towards the end of 2022, stronger domestic economic activity

Chart 1.1: Financial Market – Financial Market Stress Index (FMSI)



Source: Bloomberg, Reuters and Bank Negara Malaysia estimates

and positive investor sentiment amid an orderly political transition following the 15th General Election lent some support to equities in the fourth quarter of the year. The overall new capital raised in the domestic equity market rose to RM4.1 billion<sup>1</sup> during the period (January 2021-January 2022: RM3.2 billion; January 2020-January 2021: RM2.0 billion), reflecting improvements in business confidence and investor demand. However, renewed uncertainty over the pace of US monetary policy tightening amid a persistent increase in inflation and the failure of some US banks in the first quarter of 2023 has dampened the performance of equity markets globally, including Malaysia's. While the risk-off sentiment among investors due to concerns in the global banking sector has placed some pressure on the domestic equity market, especially the banking counters, the impact was nevertheless moderate and short-lived.

Non-resident flows into equities turned negative since September 2022, partly reflecting subdued investor sentiment following continued inflationary pressures and expectations of faster monetary policy tightening by major central banks. However, for 2022 as a whole, non-residents were net buyers in the

<sup>1</sup> For a 13-month period between January 2022 and January 2023.

domestic equity market (net inflow of RM4.4 billion), after recording four consecutive years of net outflows since 2018. Retail investors remained a key player in the market, although the level of participation has declined from the highs seen during the pandemic (year-to-date (YTD)<sup>2</sup> average: 27.3%; 2020-2021 average: 34.3%) amid the higher returns on deposits and sharp price corrections in the technology and healthcare sectors. These investments have not, so far, been associated with an increase in leverage, shielding households from debt-related stress due to volatile equity prices. Household loans to purchase quoted shares remained small and stable at 0.5% of total banking system loans, unchanged from the 5-year average share of banking system loans.

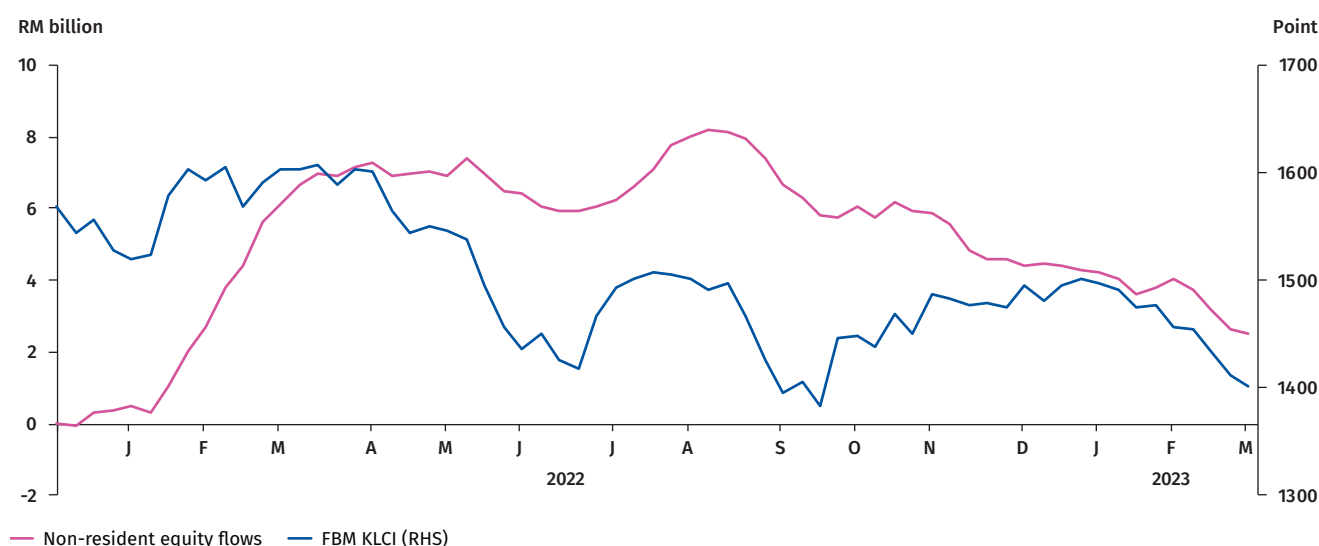
### Non-resident portfolio flows in the government bond market were largely influenced by external factors

The domestic bond market remained resilient despite heightened market volatility in an environment of rising interest rates. The 10-year Malaysian

Government Securities (MGS) yields rose by 51 basis points (bps) in 2022 (Chart 1.3) following increases in the Overnight Policy Rate (OPR) (2022: +100 bps). At its peak, yields rose to 4.55% in late October consistent with global yield trends amid uncertainties around the outlook for global interest rates. Market liquidity has remained healthy with sustained demand for government bonds in the primary market, as evidenced by the average bid-to-cover ratio of 2.1 times between September 2022 and March 2023<sup>3</sup> (2015-2019 average: 2.3 times). Meanwhile, in the secondary market, the daily trading volume for government bonds averaged RM3.3 billion between September 2022 and March 2023 (2015-2019 average: RM3.1 billion). Liquidity conditions were also largely unaffected by the expiry of the Statutory Reserve Requirement (SRR) flexibility<sup>4</sup> at the end of 2022 given the healthy liquidity buffers of banks. More recently, liquidity conditions remain stable following the recent failures of some US banks. Banks continue to have access to various types of instruments to manage liquidity, including repurchase arrangements (repo), reverse repo, FX swaps and standing facilities with the Bank.

For 2022 as a whole, non-residents were net sellers in the domestic government bond market (net outflow

**Chart 1.2: Financial Market – Cumulative Non-resident Equity Flows and Performance of the Domestic Equity Market**



Source: Bloomberg

<sup>3</sup> Data as of 20 March 2023.

<sup>4</sup> The flexibility to allow banks to use MGS and Malaysian Government Investment Issues (MGI) to meet the SRR compliance was introduced at the onset of the pandemic to provide greater flexibility for banks in their liquidity management and support the continued smooth functioning of the bond market.

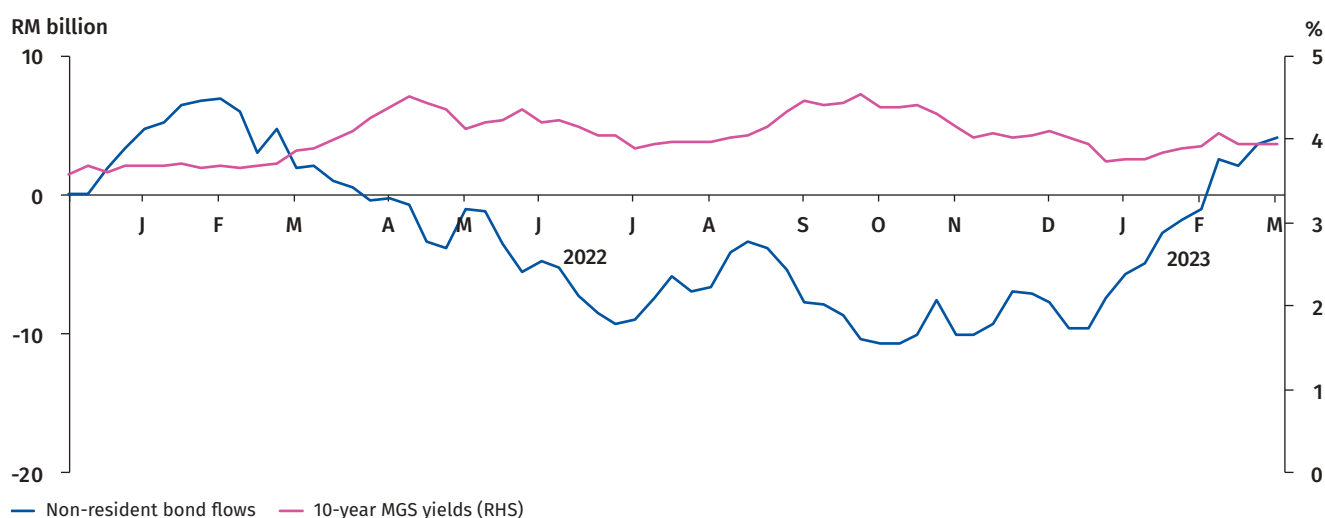
<sup>2</sup> Data as of 20 March 2023.

of RM7.8 billion) – a trend also observed in many other emerging economies amid expectations of tighter global monetary conditions. Non-resident flows turned positive since November 2022, in line with regional trends, amid the relatively attractive total return of domestic government bonds. Consequently, the share of non-resident holdings in the government bond market increased marginally to 22.8% YTD (December 2022: 22.2%; 2015-2019 average: 27.0%). Domestic institutional investors, such as banks, non-bank financial institutions (NBFIs), and insurers and takaful operators (ITOs), remained active in the government bond market (2022: net purchase of RM56.7 billion; 2021: net purchase of RM51.0 billion), supporting market liquidity amid volatile non-resident flows.

The corporate bond market continued to function in an orderly manner in support of corporate fundraising activities. Gross corporate bond issuances rose sharply (August 2022-January 2023: RM94.7 billion; August 2019-January 2020: RM48.8 billion), driven mainly by a large issuance by a major toll road operator in December (RM25.2 billion). Corporate bonds remained an attractive investment instrument for investors. Credit spreads between 10-year AAA papers and 10-year MGS have remained broadly stable, reflecting sustained investor demand for corporate bonds (September 2022-March 2023<sup>5</sup> average: 56.1 bps; 2015-2019 average: 55.4 bps). This will continue to support orderly conditions.

Between September 2022 and March 2023,<sup>6</sup> the ringgit weakened by 0.2% against the US dollar to close at 4.4860. The ringgit recorded its all-time closing low of 4.7480 in early November as the US dollar rose to a 20-year high following the aggressive monetary tightening by the US Federal Reserve (Fed). The ringgit subsequently strengthened towards the end of 2022 mainly on signs that the Fed might slow the pace of its policy tightening. This improvement continued into January 2023 as the anticipated reopening of China's economy added to the positive sentiment on the ringgit. However, the rebound in the US dollar since February 2023 led to a weaker ringgit as global investors revised their expectations for a higher terminal Federal Funds Rate (FFR). Recent market volatility amid concerns over the US banking sector saw markets readjust their expectations for a lower FFR increase, leading to a marginal appreciation in the ringgit against the US dollar in March. The ringgit continued to adjust in an orderly manner, underpinned by the healthy average daily onshore FX trading volume (YTD: USD15.5 billion; 2022: USD13.7 billion; 2021: USD11.3 billion). While the 1-month USD/MYR implied volatility increased slightly to 5.3% between September 2022 and March 2023 (2020-2022 average: 4.6%), it remained largely in line with regional trends, and was well below the highest volatility level observed in the past 10 years (2015 peak: 15%). Significant movements in the ringgit exchange rate could increase risks for businesses with high external debt although such

**Chart 1.3: Financial Market – Cumulative Non-resident Bond Flows and Performance of the Domestic Bond Market**



Source: Bank Negara Malaysia and Bloomberg

<sup>5</sup> Data as of 20 March 2023.

<sup>6</sup> Data as of 20 March 2023.



## Key Developments in the Second Half of 2022

risks are presently contained (refer to the section on 'Key Developments in the Second Half of 2022 – Credit Risk' for further details). Looking ahead, movements in the ringgit will continue to be largely driven by external developments amid an evolving global growth and inflation outlook. Downside risks include continued aggressive increases in US interest rates, heightened global market volatility and contagion fears arising from banking system stresses in some

advanced economies. These risks may lead to a further deterioration in investor sentiment, which may result in near-term pressure arising from non-resident portfolio outflows. Nevertheless, continued domestic economic growth and positive spillover effects from the reopening of China's economy (refer to Chapter 2 of the BNM Economic and Monetary Review 2022 for further details) would provide some support to the ringgit.

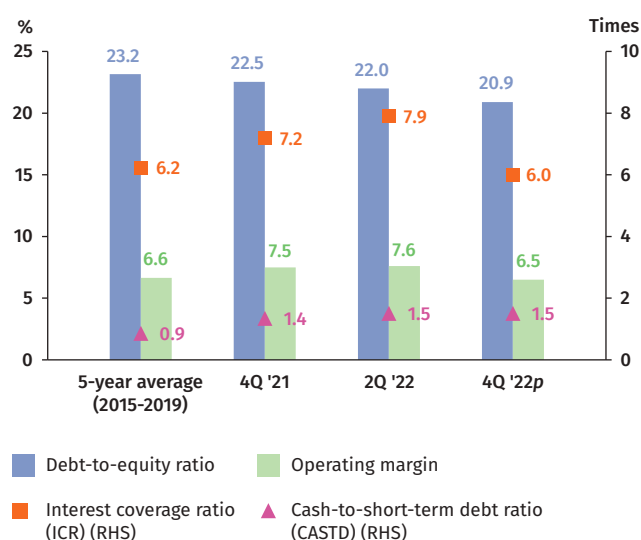
## CREDIT RISK

### While domestic demand conditions have improved, business performance faced headwinds from elevated cost pressures in 2H 2022

In the second half of 2022, firms in the non-financial corporate sector benefitted from improving domestic demand conditions. Sectors that had previously lagged in the economic recovery continued to improve, as the full reopening of the economy supported discretionary goods and services spending. The leisure and hospitality segments in particular were supported by higher out-of-state travel and social events such as weddings and festive celebrations. However, businesses continued to face a challenging operating environment. Input costs in a number of industries rose significantly amid a confluence of factors including supply-side disruptions, rising global commodity prices due to geopolitical developments, and a weaker ringgit. The increase in input costs for businesses weighed on profit margins, resulting in a decline in overall debt servicing ability. The level of debt servicing ability, as measured by the median interest coverage ratio (ICR), nonetheless remained healthy at three times above the prudent level (Chart 1.4). Businesses have also continued to reduce their overall leverage and maintain stronger liquidity buffers relative to pre-pandemic levels amid the ongoing uncertainties in the operating environment.

Credit risks among listed corporates remained manageable. However, sector- and firm-level variations continued to reflect an uneven recovery. The share of firms-at-risk<sup>7</sup> edged upwards to 25.1% (2Q 2022: 24.6%) towards the end of the year amid cost challenges which impacted business profitability. This was mainly driven by firms in the construction and manufacturing sectors, where operating costs were affected by rising material prices and labour shortages in the recent period.

Chart 1.4: Business Sector – Key Financial Performance Indicators



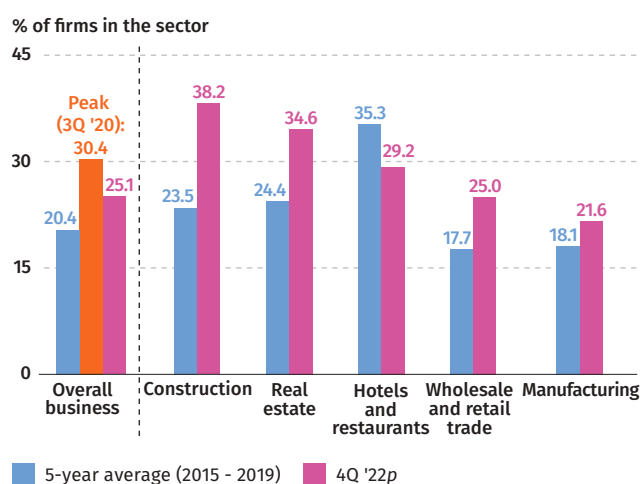
p Preliminary

Note: Prudent thresholds for ICR and CASTD are two times and one time, respectively.

Source: S&P Capital IQ and Bank Negara Malaysia estimates

Meanwhile, improvements were noted in sectors that previously lagged the economic recovery such as hotels and restaurants, and retail trade sectors. In the real estate sector, the share of firms-at-risk remained elevated as persistent oversupply weighed on the commercial real estate market (Chart 1.5).

Chart 1.5: Business Sector – Firms-at-risk for Selected Sectors



p Preliminary

Source: S&P Capital IQ and Bank Negara Malaysia estimates

<sup>7</sup> Firms-at-risk are defined as listed non-financial corporates with ICR below the prudent threshold of two times.

Business loans expanded at a slower pace of 3.4% towards the end of the year (June 2022: 5%). Loans for the purpose of investment in fixed assets, including non-residential property, have picked up in pace as businesses revived their investment intentions in line with stronger economic activities. Loan growth was also driven by an increase in small and medium enterprises (SME) loans, mainly for working capital purposes amid elevated cost pressures. Overall loan growth was however dampened by the decline in outstanding loans to the primary agriculture sector amid elevated crude palm oil prices which reduced the need for debt-funding by firms in the sector. Similarly, outstanding loans to the mining and quarrying sector contracted amid weaker demand for working capital loans in line with broader efforts by the sector to deleverage and improve debt discipline since 2020. The latest survey of credit and funding conditions conducted in the fourth quarter of 2022 indicates that banks' perception of business risk going forward remains broadly stable, even after factoring in tighter policy rates. This should continue to support lending activity to the business sector, including SMEs.

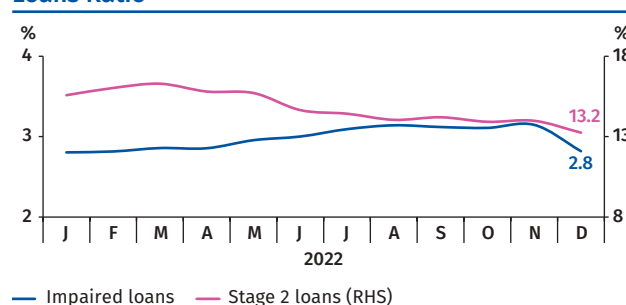
Larger corporates continued to tap the corporate bond market for funding. Corporate bond issuances rose sharply in the second half of 2022 compared to the same period last year (+82%; 1H 2022: -7.6%), driven mainly by a large issuance by a major toll road operator in December (RM25.2 billion). Meanwhile, external debt increased due to exchange rate valuation effects with the strengthening of the US dollar. For the business sector as a whole, the non-financial corporate debt-to-GDP ratio stood at 98.4%, marginally lower than levels seen prior to the pandemic as GDP growth continued to outpace debt growth.

In 2022, funds raised via initial public offerings in the equity market amounted to RM3.4 billion (2021: RM2.7 billion). The bulk of the 56 issuers comprise of smaller businesses listed on the ACE Market. More businesses are also tapping alternative financing platforms such as equity crowdfunding (ECF) and peer-to-peer (P2P) financing to meet their funding needs. In the first nine months of 2022, a total of RM1.2 billion (January to September 2021: RM0.9 billion) was successfully raised through these alternative channels, mainly for working capital and business expansion purposes.<sup>8</sup> This amount,

however, remains small compared to traditional loan financing by the banking system and development financial institutions (DFIs), at 0.1% of total loan disbursements to businesses over the same period. Moving forward, it will be important to further develop the alternative finance ecosystem to meet the increasingly diverse financing needs of businesses<sup>9</sup> while mitigating financial stability risks, particularly for innovative firms that are involved in new growth areas. Given the higher associated risks, early-stage funding for such firms is ill-suited for traditional forms of bank financing using depositors' monies. Equity funding, including in combination with public-private partnerships, will play a key role in financing innovation, along with measures to improve conditions for innovation.<sup>10</sup>

Excluding the write-off of legacy loans in the last quarter, the quality of bank loans was little changed in the second half of 2022. For the year as a whole, business loan impairments increased only modestly with the loan impairment ratio at 2.8% (Chart 1.6), unchanged from 2021. More generally, leading indicators from banks suggest further business impairments should continue to be relatively contained. The share of business loans with increased credit risk<sup>11</sup> continued to decline, in line with more favourable business conditions.

**Chart 1.6: Business Sector – Impaired and Stage 2 Loans Ratio**



Source: Bank Negara Malaysia

Amid improvements in business conditions and the expiry of repayment assistance programmes, the share of SME loans under repayment assistance continued to decline to 5.6% of total SME loans, or 1.0% of total loans from the banking system

<sup>8</sup> Based on data compiled by the Securities Commission Malaysia as of 30 September 2022. Refer to <https://www.sc.com.my/analytics/digital> for further details.

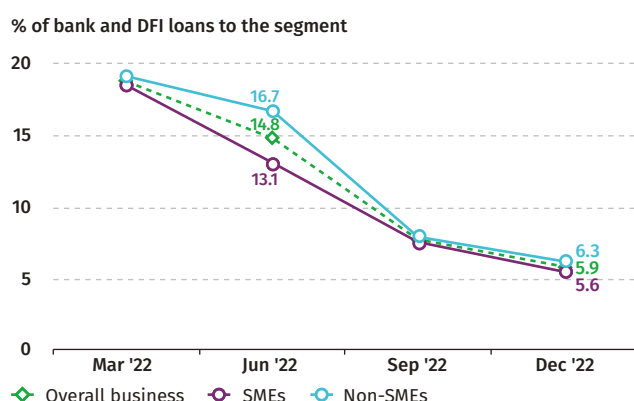
<sup>9</sup> Refer to the section on 'Strategic Thrust 1: Fund Malaysia's economic transformation' in the Financial Sector Blueprint 2022-2026 for further details on ensuring a resilient funding ecosystem.

<sup>10</sup> For example, developing an open data ecosystem, and enhancing the Companies Act 2016 to expand the coverage of firms eligible for corporate rescue mechanisms.

<sup>11</sup> This refers to the share of loans classified as Stage 2 loans under the Malaysian Financial Reporting Standard 9 (MFRS 9).

and DFIs<sup>12</sup> (Chart 1.7). Most SMEs that exited the repayment assistance programmes have been able to service their loans, although a small portion of borrowers continue to face repayment challenges. The delinquency ratio for borrowers exiting repayment assistance programmes increased slightly to 0.9% of total loans at end-2022 (June 2022: 0.7%) driven by sectors that have been more affected by cost challenges. However, this remains comfortably within banks' expectations. Nevertheless, banks remain cautious on the repayment capacity of these borrowers moving forward, given the erosion of buffers since the onset of the pandemic and ongoing uncertainty in business operating conditions. Reflecting this, about a fifth of SME loans that exited repayment assistance (or equivalent to 3.7% of total SME loans) continue to be classified by banks under Stage 2. Notwithstanding this, new enrolments into repayment assistance programmes have been negligible for most banks, indicating continued improvements in business resilience going forward, barring major shocks.

**Chart 1.7: Business Sector – Share of R&R Loans by Segment**



Consistent with this, the impact on the quality of SME borrowings from increased lending rates has been limited. Although 77% of bank exposures to SMEs are floating-rate loans, engagements with banks indicate that most borrowers have thus far been able to manage the impact from increasing borrowing costs. Banks highlighted that repayment difficulties faced by SMEs have generally been associated with higher input cost pressures. Lower buffers and limited pricing power have intensified such pressures for some SMEs. While banks are continuing to proactively engage these borrowers

to offer advice and provide customised assistance programmes as needed, insights from the Credit Counselling and Debt Management Agency (AKPK) and banks indicate opportunities for additional measures by these firms to pivot their business models and enhance efficiencies, including through increased automation and digitalisation, to improve their longer-term resilience.

During the year, six corporate bond issuers (0.8% of total outstanding domestic bonds) were downgraded on account of isolated firm-specific vulnerabilities rather than broader market-wide difficulties. Risks from non-financial corporate external debt also remained manageable given that most exposures of domestic firms are hedged and of medium- to longer-term maturities (beyond 12 months). This continues to be borne out by healthy debt-servicing indicators under the Bank's sensitivity analysis<sup>13</sup> on the impact of a significant tightening in financial conditions and ringgit depreciation on businesses. The analysis shows that even under stressed macroeconomic scenarios,<sup>14</sup> the median ICR for listed non-financial corporates is expected to remain well above prudent thresholds at 4.5 times.

Going forward, uncertainty surrounding the business outlook remains. The global and domestic growth outlook and cost pressures will remain the key drivers of credit risk conditions in the near term. Stress tests conducted by the Bank affirm that banks' capital buffers are sufficient to absorb a potential increase in credit losses from the business sector under adverse stress scenarios (Refer to the section on 'Assessing the Resilience of Financial Institutions' for further details). Over the longer term, climate transition and physical risks to businesses also present rising risks to the financial sector. The Bank continues to work with financial institutions to build capabilities in climate risk assessments as part of broader efforts to strengthen climate risk management practices and support greater access to transition finance.<sup>15</sup> Given that the impact of actions to mitigate and adapt to climate-related risks will take time to unfold, early mitigation and adaptation actions will be critical to reduce physical risks and to avoid a disorderly transition for the economy.

<sup>13</sup> This sensitivity analysis assumes severe tightening of financial conditions, including a depreciation of the ringgit by up to 20% and an increase in the average corporate bond yield by 400 basis points.

<sup>14</sup> Refer to the section on 'Assessing the Resilience of Financial Institutions' in the BNM Financial Stability Review for Second Half 2021 for further details.

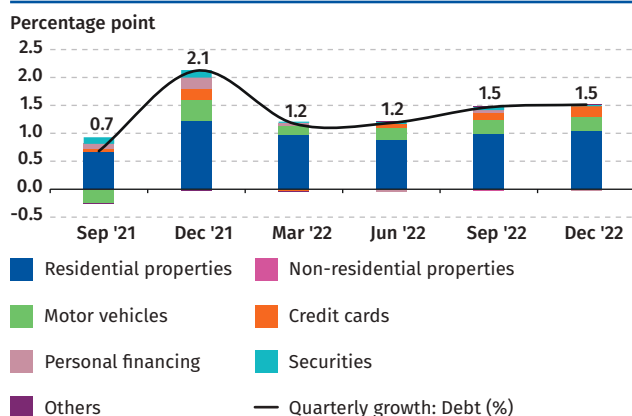
<sup>15</sup> Refer to Spotlight Article titled 'Implementation Progress of the Climate Change and Principle-based Taxonomy (CCPT) in the Financial Sector' for further details.

<sup>12</sup> The 2015 – 2019 average share of SME loans under rescheduling and restructuring (R&R) or repayment assistance is 1.8% of total SME loans, or 0.3% of total banking system and DFI loans.

## Credit risk from the household sector remained manageable, supported by improving economic and labour market conditions

In the second half of 2022, quarterly growth of household debt was higher at 1.5%, in line with ongoing improvements in the labour market and income conditions (Chart 1.8). Consequently, in annual terms, household debt expanded at a faster pace of 5.5% (June 2022: 5.3%). Notwithstanding this increase, the ratio of household debt-to-GDP fell further to 81.2% (June 2022: 84.5%), as nominal GDP grew at a stronger pace in the second half of 2022 (Chart 1.9).<sup>16</sup> Household debt continued to be driven by housing loans, pointing to sustained demand for house purchases spurred by measures to encourage home ownership.<sup>17</sup> The growth in car loans was also lifted by higher disbursements for the purchase of vehicles during the sales tax exemption period (December 2022: 7.0%, June 2022: 4.2%).<sup>18</sup> Outstanding credit card loans also recorded faster growth during the period. Nonetheless, the proportion of household debt attributable to consumption loans has remained broadly unchanged (Chart 1.10).

**Chart 1.8: Household Sector – Quarterly Growth of Debt**



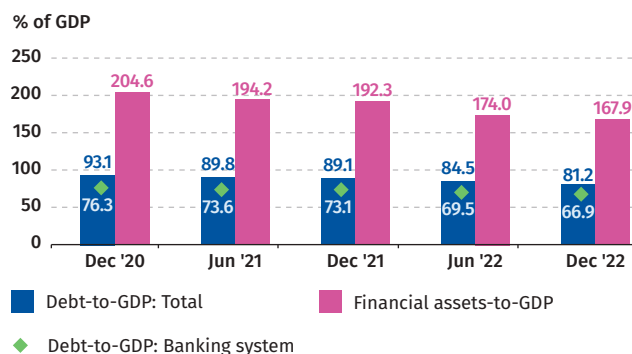
Source: Bank Negara Malaysia

<sup>16</sup> Refer to the BNM Economic and Monetary Review 2022 for more details on GDP growth.

<sup>17</sup> These include stamp duty exemptions announced under the Keluarga Malaysia Home Ownership Initiative (i-MILIKI) for first-time home buyers of properties priced up to RM500,000 and 50% stamp duty discount for properties priced between RM500,000 and RM1 million from 1 June 2022 to 31 December 2023.

<sup>18</sup> 100% sales tax exemption for locally-assembled passenger cars and 50% sales tax exemption for imported passenger cars for purchases made between 15 June 2020 and 30 June 2022. To enable car buyers who booked their cars by 30 June 2022 to enjoy the sales tax exemption, the registration date with the Road Transport Department (JPJ) was extended to 31 March 2023.

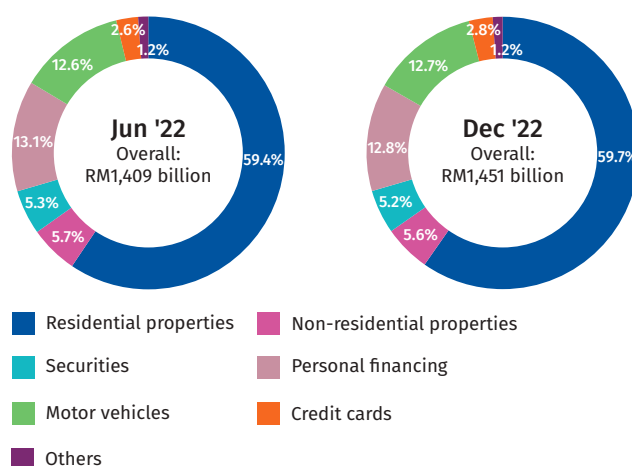
**Chart 1.9: Household Sector – Key Ratios**



Note: The loan/financing data from 2021 onwards are based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology.

Source: Bank Negara Malaysia, Bursa Malaysia, Department of Statistics, Malaysia, Employees Provident Fund and Securities Commission Malaysia

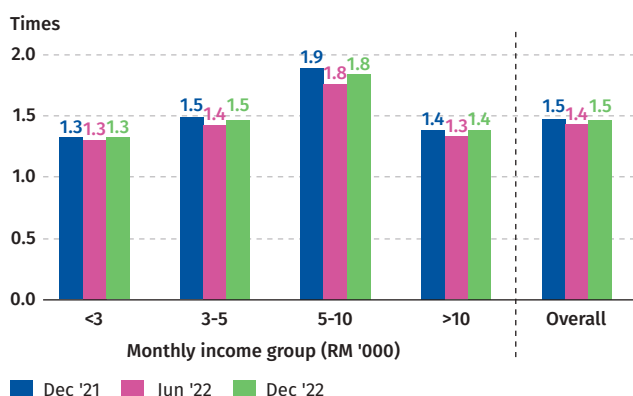
**Chart 1.10: Household Sector – Composition of Debt by Purpose**



Note: Figures may not add up due to rounding.

Source: Bank Negara Malaysia

Bank lending to households continued to grow in the second half of 2022 (5.9%; June 2022: 5.7%). For the year as a whole, loan growth has recovered close to pre-pandemic levels (2015-2019 average: 6.2%). Credit growth continues to closely track household incomes as evidenced by the relatively stable median debt-to-income (DTI) ratio at 1.5 times (June 2022: 1.4 times) (Chart 1.11). Other indicators of debt-servicing capability remained sound as well. The median debt service ratios (DSRs) of newly approved and outstanding household loans remained prudent at 43% and 37%, respectively (June 2022: 42% and 35%). Two-thirds of newly approved loans in 2022 had DSRs below 60%, a proportion unchanged since 2018.

**Chart 1.11: Household Sector – Median Debt-to-Income Ratios by Income Group**

Source: Bank Negara Malaysia

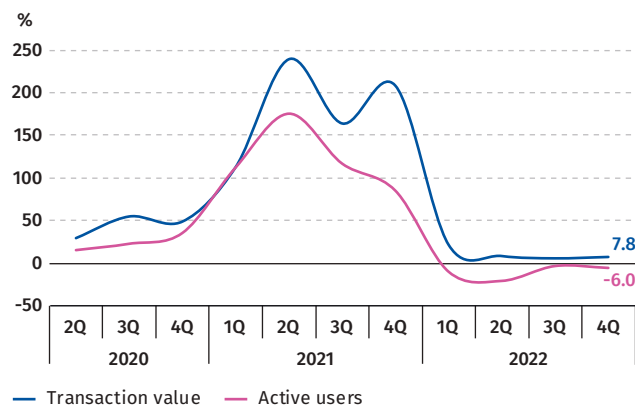
A quarter of household borrowers have DSRs exceeding 60% and they account for 33.9% of total banking system loans. As the bulk (69%) of these credit exposures are held by middle- and high-income<sup>19</sup> borrowers, credit risks are assessed to be contained by their larger buffers available to support loan repayments in the event of financial difficulties. Impairments have remained low among borrowers with DSRs over 60% (1.2% of outstanding loans of borrowers in this segment). Forward-looking indicators such as the share of riskier loans for this segment has also been declining (Stage 2 loans ratio: 7.4%; June 2022: 9.1%), broadly consistent with the trend observed for overall household loans. Nevertheless, banks have indicated that they are increasingly vigilant over the impact from rising interest rates and higher costs of living on available household buffers. This could mean that further improvements in indicators of household asset quality could be more modest going forward.

Buy-now-pay-later (BNPL) schemes grew at a more moderate pace in 2022 (Chart 1.12) amid tapering customer demand. The schemes continue to target selected segments of Malaysian households with the majority of users being younger and lower-income borrowers. About 44% of BNPL users are aged between 18 and 30 years old.<sup>20</sup> More than 80% of BNPL users earn less than RM3,000 a month,<sup>21</sup> and therefore, are more susceptible to financial stress. The relatively easier access to BNPL facilities may place users at a

<sup>19</sup> The middle-income group refers to individuals earning a monthly income of between RM5,000 to RM10,000 while the high-income group includes individuals earning above RM10,000 per month. Individuals with monthly income less than RM5,000 are categorised as lower income.

<sup>20</sup> Based on data from the top four non-bank BNPL players which account for 96% of transaction value in 4Q 2022.

<sup>21</sup> Only selected BNPL players provide income information.

**Chart 1.12: Household Sector – Quarterly Growth of Transaction Value and Active Users for BNPL Schemes**

Note: Based on data from the top four non-bank BNPL players which account for 96% of transaction value in 4Q 2022. These exposures are not currently captured in the total of household debt.

Source: Bank Negara Malaysia

higher risk of spending beyond their means, without considering their ability to promptly repay the full loan amount. Given the lack of transparency over fees and charges, particularly late payment charges and processing fees imposed under these schemes, users may also be unaware of the total amount that they must repay. Anecdotal evidence among selected larger BNPL players point to an increasing trend in missed repayments, suggesting that such risks may be rising (share of BNPL users with overdue payments: 4Q 2022: 17.0%; 2Q 2022: 14.0%; 4Q 2021: 7.0%).

Financial stability risks associated with BNPL schemes remained limited as BNPL exposures accounted for only 0.05% of total household debt.<sup>22</sup> Nevertheless, the Bank is cognisant of the conduct risks that BNPL poses to consumers and has taken steps to mitigate this for BNPL schemes offered by entities that are regulated by the Bank. This includes requiring licensed financial institutions (banks, prescribed DFIs) and approved e-money issuers to adhere to existing responsible lending standards for BNPL schemes offered.<sup>23</sup> They are also required to conduct more holistic suitability and affordability assessments at the point of onboarding new customers that take into account the customer's exposures/borrowings with other lenders. The Bank will also impose additional

<sup>22</sup> As at 4Q 2022, the average total amount spent by an active BNPL account holder is RM545.20.

<sup>23</sup> The Bank has issued a consultation letter on BNPL in October 2022 to banks and prescribed DFIs to solicit feedback on enhancements to the Policy Documents on Responsible Financing (PDRF) and Personal Financing (PDPF) relating to BNPL. The revised PDRF and PDPF are scheduled for issuance in the first half of 2023.

measures to improve disclosures of all applicable fees and charges to BNPL users, as well as any applicable terms and conditions at the point of onboarding. Further, consistent with principles on the fair treatment of financial consumers issued by the Bank, licensed financial institutions and approved e-money issuers will be required to demonstrate that the imposition of late payment charges on consumers who missed scheduled repayments are not excessive.

In parallel, the Ministry of Finance, the Bank and the Securities Commission Malaysia remain committed to expediting the tabling of the proposed Consumer Credit Act (CCA).<sup>24</sup> Once enacted, non-bank credit providers such as BNPL providers will be required to comply with relevant prudential and conduct standards. Apart from promoting a level playing field between banks and non-bank BNPL providers, these ongoing efforts aim to accord the same level of protection to financial consumers in relation to BNPL schemes regardless of which provider they deal with. These efforts will also help to mitigate risks from over-indebtedness building up among younger and lower-income borrowers.

With nearly 60% of household debt made up of housing debt, risks from higher-than-anticipated default rates and/or sharp falls in house prices remain in focus. As at end-2022, the median loan-to-value (LTV) ratio of outstanding housing loans remained stable at 65.5% (June 2022: 65.3%). This provides ample buffers for both borrowers and banks against declines in house prices. Owner-occupiers<sup>25</sup> continued to drive overall growth of house financing (contributing 71.4% to the overall housing loan growth as at December 2022). The bulk (66.7%) of these loans were granted to first-time home buyers.<sup>26</sup> Such home buyers typically borrow with larger initial financing margins (i.e., with initial LTV ratio of 90% and above). While this can increase access to housing loans, it also increases the risk of these loans falling into negative equity<sup>27</sup> if economic conditions worsen, affecting both bank and household resilience should

it become widespread. Housing loan guarantees<sup>28</sup> and loan affordability assessments conducted by banks continue to play an important role in mitigating the credit risks associated with such loans. Some banks have also strengthened their assessments of loan affordability to account for the possibility of further rises in interest rates. Consequently, notwithstanding higher initial financing margins, the median DSR for newly-granted home financing remained prudent at 50.9%, below the 2015-2019 average of 54.8%.

Credit risks among individual property investors,<sup>29</sup> who are more likely to default if their mortgages fall into negative equity or if their rental income is lost, remain limited. Loan growth in this segment has slowed a little (2022: 5.2%; 2021: 5.6%). Banks also continue to maintain prudent lending standards when financing borrowers in this segment. The bulk (88.4%) of new loans were extended to individual property investors with higher monthly incomes of at least RM5,000. The median income of these borrowers (RM10,275) is almost double that of owner-occupiers (RM5,452), pointing to better loan repayment capacity and financial buffers. The median LTV ratio of outstanding housing loans of individual property investors remained prudent at 62.0%. Loan from this segment also remained performing, with only 1.1% of such loans in a negative equity position.

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### Overall household resilience remains intact amid rising borrowing costs, supported by healthy debt-servicing capacity

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Missed loan repayments by households increased given the current environment of rising borrowing and living costs, albeit marginally. This is largely anticipated. The household loan impairment ratio has edged up slightly, while the delinquency ratio is expected to normalise closer to the pre-pandemic level as more borrowers exit repayment assistance programmes (2015-2019 average: 1.0% and 1.3%, respectively) (Chart 1.13). Banks expect impairment ratios to rise modestly in 2023, driven mainly by financial strains among vulnerable household borrowers, especially among those in lower-income

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<sup>24</sup> The CCA will also pave the way for the establishment of the Consumer Credit Oversight Board (CCOB) as an independent competent authority to oversee consumer credit providers and credit service providers. The CCA bill is expected to be tabled at the Parliament in the second half of 2023.

<sup>25</sup> Proxied by individual borrowers with one housing loan.

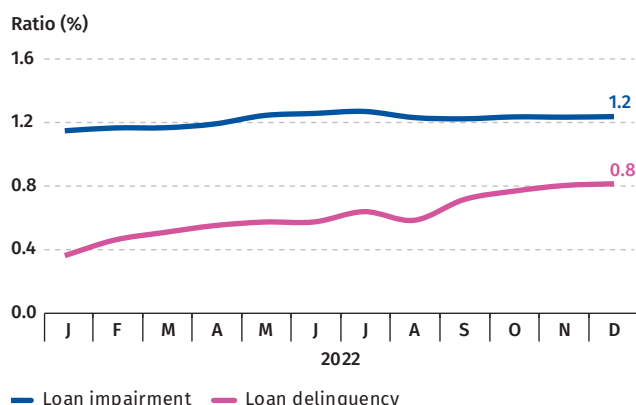
<sup>26</sup> Proxied by individual borrowers with no record of outstanding or settled housing loans prior to the approval of the new housing loan application.

<sup>27</sup> Where the outstanding housing loan exceeds the collateral value, in this case, the house price.

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<sup>28</sup> Comprise guarantee schemes offered by Cagamas Berhad and Syarikat Jaminan Kredit Perumahan Berhad (SJKP). Collectively, housing loans approved under these guarantee schemes account for 3.8% of total housing loans in the banking system.

<sup>29</sup> Individual property investor refers to an individual borrower with more than one housing loan.

**Chart 1.13: Household Sector – Loan Impairment and Delinquency Ratios in the Banking System**

Source: Bank Negara Malaysia

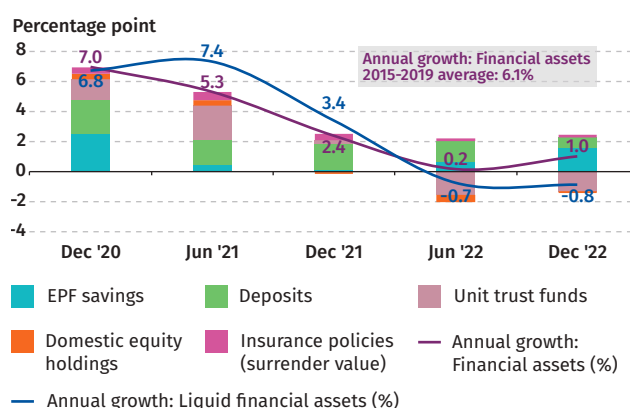
groups, and those who are either self-employed or employed in economic sectors that are still recovering from the pandemic. Bespoke repayment assistance remains in place to support such borrowers, including personal financial management assistance provided through AKPK, to help them get onto a firmer financial footing.

During periods of exceptionally low interest rates, risks of overborrowing can increase as loans become more affordable. A review of new floating-rate loans disbursed between July 2020 and April 2022 (when the OPR stood at a historical low of 1.75%) affirmed that these loans continue to hold up well following the successive OPR increases. Repayment trends for new floating-rate loans taken out during this period have been largely in line with that observed for all other household loans. Impairment and delinquency ratios among these new loans also remain lower than the household sector average, both at 0.5%, respectively. This implies continued prudence observed by banks in the conduct of affordability assessments.

As of December 2022, the share of household loans classified as Stage 2 by banks improved further to 6.7% (June 2022: 8.0%), in line with the continued decline in household debt under repayment assistance (December 2022: 1.9%; June 2022: 3.2% of total loans from the banking system and DFIs). Most borrowers who have exited repayment assistance programmes have resumed servicing their loans without much difficulty. Loan delinquencies and impairments among these borrowers, while higher than for overall household loans, remained low at 1.4% and 1.8%, respectively. The trend in Stage 2 loans is expected to continue to

improve in 2023 as more Stage 2 borrowers who have exited repayment assistance programmes complete a minimum observation period of loan servicing (usually six months, with a number of banks observing longer periods of up to 12 months) before their loans are reclassified as Stage 1. As noted earlier, banks remain vigilant to the possible increase in credit risk posed by borrowers with higher debt service burdens, as well as those exiting repayment assistance programmes, and continue to actively engage these borrowers.

Household financial assets continued to grow at a slower pace than household debt in the second half of 2022 (1.0%; June 2022: 0.2%; 2015-2019 average: 6.1%) due mainly to the weaker equity market performance and lower growth of savings held as deposits (Chart 1.14). Despite the slower expansion, households continue to hold financial assets in excess of debt, with the aggregate value of financial assets remaining steady at 2.1 times of total household debt (June 2022: 2.1 times; December 2019: 2.2 times). While this continues to support overall household resilience, increasing vulnerabilities are emerging among household borrowers who are highly leveraged and have limited financial buffers, particularly in the current environment of escalating cost of living pressures. For example, 51.5% or 6.67 million Employees Provident Fund (EPF) members under the age of 55 have extremely low savings of less than RM10,000 in their EPF savings accounts.<sup>30</sup> Furthermore, a recent survey by RinggitPlus revealed that in 2022, 70% of Malaysians save less than RM500 a month or did not save at all (2021: 52%).

**Chart 1.14: Household Sector – Annual Growth of Financial Assets**

Source: Bank Negara Malaysia, Bursa Malaysia, Employees Provident Fund and Securities Commission Malaysia

<sup>30</sup> '6.67mil EPF members have less than RM10,000 savings: Chief strategy officer'. New Straits Times. Refer to <https://www.nst.com.my/business/2023/01/873081/667mil-epf-members-have-less-rm10000-savings-chief-strategy-officer>.

## Key Developments in the Second Half of 2022

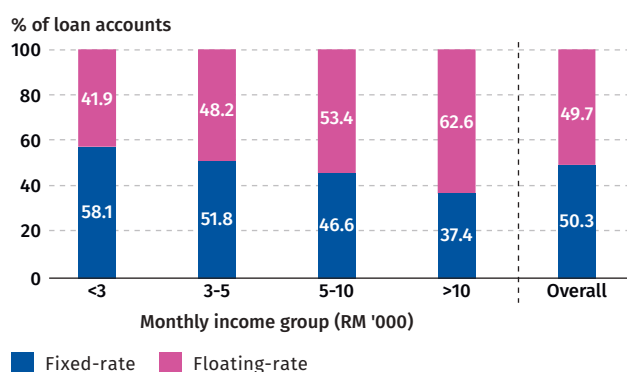
Meanwhile, 63% of respondents indicated that they could only survive 3 months or less with their savings (2021: 50%).<sup>31</sup> Maintaining sound lending standards and rebuilding household buffers will therefore remain important.

Consistent with earlier studies by the Bank, the debt servicing capacity of household borrowers continues to be most affected by income and employment shocks, rather than increases in borrowing costs. Stress tests conducted by the Bank show that if borrowers face severe labour market shocks with the unemployment rate rising to as high as 6.0%, up to 4.3% of household loan exposures in the banking system could be at risk of default by end-2025.<sup>32</sup> This remains comfortably within banks' excess capital buffers. As expected, the bulk (65%) of at-risk household borrowers earn below RM5,000 per month. However, the latest stress tests also shows that additional borrowers earning between RM5,000 and RM10,000 monthly could be susceptible to distress under severe economic shocks, reflecting reduced buffers in the more recent period among these households. Improvements in income and employment prospects therefore remain key in supporting household debt servicing capacity going forward. Beyond severe economic shocks, household borrowers are assessed to be generally resilient to upward movements in borrowing costs. This is due largely to the composition of their debt, as half of total household loan accounts are on fixed-rate terms which do not fluctuate with changes in OPR (Chart 1.15). The impact of higher borrowing costs on debt-servicing capacity varies by income group. For lower-income borrowers, their larger share of fixed-rate loan accounts helps cushion the immediate effects of higher borrowing costs relative to other borrowers.

While some borrowers continue to experience financial difficulty due to the uneven recovery and rising cost of living, lower bankruptcy cases were recorded in 2022 (5,695 cases; 2021: 6,554 cases).<sup>33</sup> This is on account of various factors, which include the bankruptcy threshold being raised to

RM100,000 from RM50,000, effective September 2021.<sup>34</sup> For banks, bankruptcy action also remains as the last recourse, as other pre-bankruptcy rescue mechanisms are available. These include referrals to, and Voluntary Arrangement services offered by, AKPK that allow financially distressed borrowers an opportunity to regain control of their finances. Enrolments into the Debt Management Programme offered by AKPK increased to 34,670 borrowers in 2022, up from 23,711 in 2021 (Chart 1.16). Distressed borrowers also continued to avail themselves of repayment assistance arrangements offered by their banks.

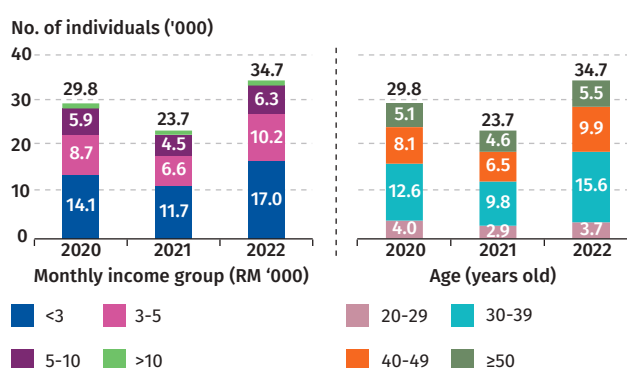
**Chart 1.15: Household Sector – Share of Fixed-rate and Floating-rate Loan Accounts by Income Group**



Note: Excludes credit cards.

Source: Bank Negara Malaysia

**Chart 1.16: Household Sector – Debt Management Programme Approved by AKPK**



Source: Credit Counselling and Debt Management Agency (AKPK)

<sup>31</sup> Based on the RinggitPlus Malaysian Financial Literacy Survey 2022. Refer to <https://ringgitplus.com/en/blog/wp-content/uploads/2022/12/RMFLS-2022-Survey-Report-FINAL.pdf>.

<sup>32</sup> Refer to the Chapter on 'Assessing the Resilience of Financial Institutions' for more details.

<sup>33</sup> Bankruptcy Statistic 2022. Refer to <https://www.mdi.gov.my/index.php/legislation/statistics/75-bankruptcy>.

<sup>34</sup> The bankruptcy threshold under Section 5(1)(a) of the Insolvency Act 1967 has been raised to RM100,000 from RM50,000 with effect from 1 September 2021. Prior to that, the bankruptcy threshold was temporarily raised to RM100,000 from RM50,000 in October 2020 under the Temporary Measures For Reducing The Impact Of Coronavirus Disease 2019 (COVID-19) Act 2020.

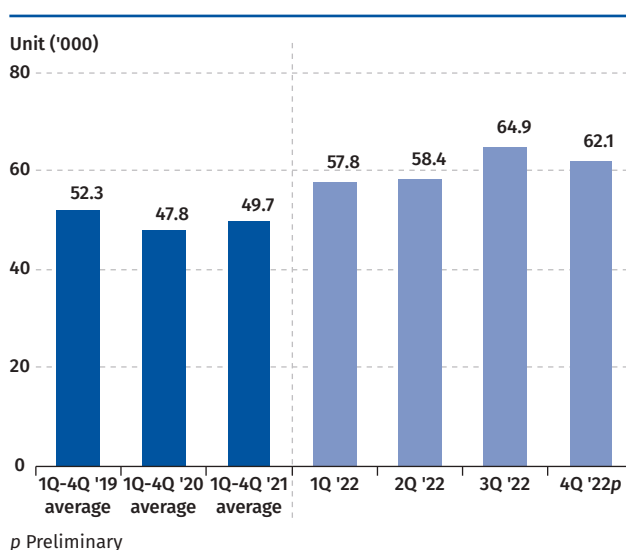
## Developments in the Residential Property Market

Activity in the housing market continued to be robust following the resumption of economic activities and improved employment conditions. Property market transactions continued to hover above the pre-pandemic levels in the second half of 2022, driven largely by transactions for the purchase of properties priced at RM500,000 and below (Chart 1.17). Consequently, the growth in house prices<sup>35</sup> trended higher, towards its long-term average (3Q 2022: 5.1%; 1H 2022: 2.5%; 2015-2019 average: 5.3%). Despite rising inflationary and cost of borrowing pressures, activity in the housing market is anticipated to sustain its recovery momentum, backed by the gradual improvement in income and business conditions, and policy measures. Such measures include the extension of the full stamp duty exemption for properties priced at RM500,000 and below, and 75% stamp duty discount on properties priced above RM500,000 to RM1 million.

Nonetheless, the housing market continues to face downside risks arising from persisting demand and supply imbalances. The number of unsold housing units has been on a declining trend, but remained high compared to the historical average (151,683; 4Q 2021 (peak): 183,918; 2015-2019 average: 130,210) (Chart 1.18).<sup>36</sup> Almost two-thirds of these units have remained unsold for more than three years, largely due to the price levels that are beyond the affordability of households, particularly in key states. The slow take-up rate of these units is not expected to materially depress broader house prices given that there are no significant concentrations of these units to key areas or projects. Projects with high levels of unsold units (i.e. above 80% unsold rate) accounted for only 10% of total projects with unsold units. This reduces the risk of large numbers of developers engaging in widespread and deep price cuts to clear unsold stock, which could have broader spillovers to the housing market. Meanwhile, the incoming supply of newly launched residential properties continued to shift towards the mass market segment, with a higher share of properties priced at RM300,000 and below (44.3%; 2021: 38.4%; 2015-2019 average: 35.2%). This is a positive development in helping to reduce further risks of demand-supply imbalances.

Financing activity for the purchase of residential property improved, in line with market activity. Loan applications increased in the second half of 2022 across all price ranges (Chart 1.19). With improved visibility on repayment behaviour, banks have been forthcoming in approving housing loans while observing prudent loan affordability assessments. This has resulted in the overall loan approval rate recovering above its pre-pandemic average level (76.4%; 2021: 73.4%; 2015-2019 average: 75.9%).

**Chart 1.17: Property Market – Housing Transaction Volume**

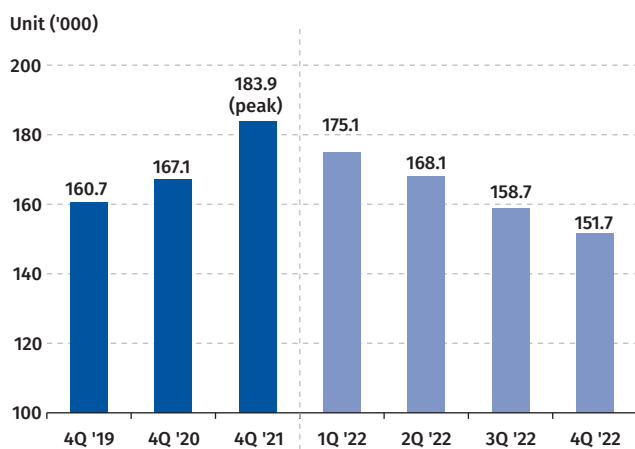


Source: National Property Information Centre (NAPIC)

<sup>35</sup> As measured by the Malaysian House Price Index.

<sup>36</sup> Comprises overhang and unsold under construction (35.6% and 64.4% of total unsold units, respectively) for residential, serviced apartments and small office, home office (SOHO) units.

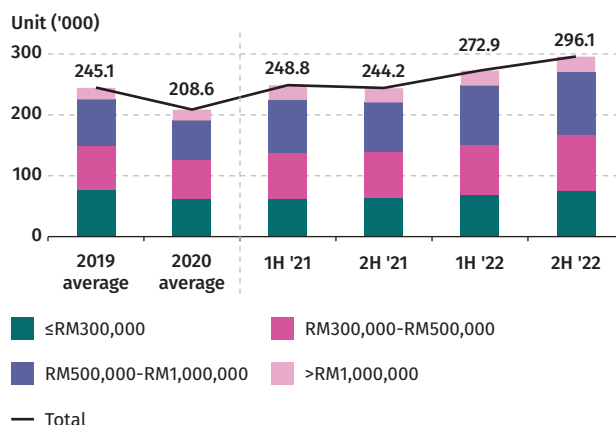
**Chart 1.18: Property Market – Volume of Unsold Housing Units**



Note: Figures include both overhang and unsold under construction for residential, serviced apartments, and small office, home office (SOHO) units.

Source: National Property Information Centre (NAPIC)

**Chart 1.19: Property Market – Volume of Housing Loan Applications by Price Segment**



Note: The loan/financing data from 2021 onwards are based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology.

Source: Bank Negara Malaysia

## OPERATIONAL RISK

### Financial institutions remained operationally resilient despite challenges

Financial institutions continue to be operationally resilient, with no major system-wide disruptions in the second half of 2022. Operational risk losses remained small relative to the banking sector's capital and profits (0.04% and 0.4%, respectively). However, a rise in the number of payment-related fraud incidents, both globally and domestically, highlighted growing concern with cybercrimes, with more frequent attacks being observed and higher costs for affected parties as well as the wider economy. In Malaysia, 19,165 cases of online banking fraud involving RM94.6 million were reported by customers of financial institutions in the second half of 2022, up from the 9,735 cases totalling RM39.9 million reported in the first half of the year.

Efforts to combat cybercrime require a comprehensive and coordinated approach between regulators, law enforcement agencies, and the private sector. Internationally, the Financial Action Task Force (FATF)<sup>37</sup> acknowledges this need and has embarked on new initiatives focusing on cyber-enabled fraud and ransomware. These include publication of reports on latest trends and methods as well as recommendations to effectively curb ransomware activities. In addition, several financial regulators have issued supervisory guidance to financial institutions to strengthen controls against online banking fraud, while governments have led national anti-fraud campaigns to enhance consumer awareness.<sup>38</sup> In Malaysia and several other countries, national anti-scam centres have been established, in an effort to centralise rapid and effective responses to online scams.

The Bank and the financial industry have continued to intensify ongoing efforts to educate the public on cyber hygiene measures that play a critical

role in preventing fraud. In addition, the Bank has required all banking institutions to further tighten fraud countermeasures against the increasingly sophisticated and continuously evolving nature of financial scams, which prey on social behaviours that increase vulnerabilities to fraud.<sup>39</sup> These measures include a requirement for banks to expedite the migration from short messaging service (SMS) one time password (OTP) to more secure forms of authentication for online activities or transactions by June 2023. Banks are also required to implement other safeguards, which include:

- removing all clickable hyperlinks in SMS and email communications;
- restricting customers to one mobile device for the authentication of online banking transactions;
- strengthening processes for enrolling new mobile devices and changing "trusted devices";
- tightening fraud detection rules and triggers for blocking suspicious transactions; and
- enhancing the cyber hygiene of customer devices used for online banking or payments services.

As of December 2022, all major banking groups have offered alternative authentication methods, and are progressively migrating all their customers to more secure methods. Banks also continue to refine and improve other security measures. These include stepping-up verification processes for mobile device enrolment, conducting call-back verifications, continuously fine-tuning fraud detection rules to block suspicious transactions, and conducting ongoing brand monitoring to detect and take down fake websites in collaboration with the Malaysian Communications and Multimedia Commission (MCMC). In addition, banks with elevated numbers of fraud cases have each appointed a Senior Independent Director to oversee the handling of fraud and data breach incidents, and coordinate with the National Scam Response Centre (NSRC) for faster tracing and interception of stolen funds. In November 2022, the financial industry also established a task force to develop strategies and to coordinate the timely implementation of industry-wide actions to combat financial fraud. These also include continuous efforts to raise public awareness of scam tactics, and to familiarise online banking users with the security features and controls that have been implemented.

<sup>37</sup> FATF is the global money laundering and terrorist financing watchdog. This inter-governmental body sets international standards that aim to prevent these illegal activities and the harm they cause to society. As a policy-making body, the FATF works to generate the necessary political will to bring about national legislative and regulatory reforms in these areas.

<sup>38</sup> For example, the United Kingdom's "Take Five to Stop Fraud" and the Australian government's "Stay Smart Online" campaigns.

<sup>39</sup> Countermeasures taken to combat the increase in online banking related frauds are listed in the BNM Financial Stability Review for First Half 2022.

### Investigating Scam Incidents

The process of tracing, intercepting and potential recovery of stolen funds is complex and typically involves a considerable amount of time and resources, requiring coordination between various agencies, financial institutions and telecommunications companies. Critically, victims must inform their financial institutions or the NSRC immediately upon identifying unauthorised transactions, or after realising that they have been scammed. Using this information, financial institutions will temporarily block the affected accounts and begin tracing the movements of the funds. Law enforcement agencies would then initiate investigation, issue the necessary enforcement orders, and ultimately pursue the criminals behind the syndicates. While these steps appear straightforward, instantaneous fund movements into multiple accounts in different banks followed by immediate cash withdrawals pose significant challenges to the investigation. The sheer volume of transactions involved also complicates the task of distinguishing fraudulent transactions from genuine ones as a result of comingling of funds.

While operational losses from financial scams do not currently pose a risk to overall financial stability, their rising trend, left unabated, can affect public confidence in banks and payment infrastructure in more significant and uncertain ways. This calls for a nation-wide, coordinated response to educate the public, maintain strong preventive controls and bring criminals to justice.

Financial institutions continue to make substantial progress in strengthening overall technology risk management capability. In 2022, over 90% of financial institutions achieved substantial compliance with the Risk Management in Technology (RMiT) standards issued by the Bank, up from the 35% in 2020. Amidst the continued digitalisation of financial services, financial institutions continued to prioritise the management of technology risks and invest heavily in upgrading their information technology (IT) infrastructure. These upgrades have served to enhance system performance and service availability, improve resilience against operational disruptions, and mitigate risks of technology obsolescence. Supervisory reviews also revealed more focused oversight by boards and senior management teams on ensuring their IT systems, as well as the resources to maintain them, are able to cope with current and future anticipated needs. These supervisory engagements will also be used to expedite the closure of identified gaps in relation to good technology risk management and cyber security practices.

An ongoing priority for the Bank has been the management of risks associated with third-party service providers (TPSPs). While some progress has been made in mitigating operational disruptions from third-party system outages and data leakages,

there remains a need to enhance visibility on sub-contractors hired by TPSPs, i.e., fourth-party service providers (4PSPs), especially given the concentration and contagion risks posed by some 4PSPs. An emerging area of risk relates to a growing reliance on and concentration in cloud service providers. To ensure financial institutions are carefully evaluating and managing such risks in their cloud strategies, the Bank will publish supplementary guidance to the RMiT policy document in 1H 2023 which will outline key expectations on cloud risk management for financial institutions. The Bank will also consult with the industry in 2H 2023 to establish common scenarios for an industry-wide joint business continuity plan (BCP) with critical IT TPSPs. Further measures are underway to conduct joint crisis simulation exercises (CSE) involving the Bank and selected industry players aimed at testing and further strengthening financial institutions' existing recovery and response plans in mitigating widespread operational disruptions. Collectively, these efforts are expected to improve visibility over the interconnectedness of service providers with the view to strengthen supply-chain risk management capabilities in the financial sector.

While operational disruptions relating to system outages and data leakages resulting from third-party failures have remained low so far, a growing trend of cyber breaches calls for continued vigilance. Major threats identified by the financial industry include breaches occurring in the environment of service providers, as well as increasingly sophisticated cybercrime campaigns such as malware-as-a-service and targeted phishing campaigns. These incidents further underscore the need to intensify the sharing of timely cyber threat intelligence. In this regard, seven new financial institutions were onboarded

to the Financial Sector Cyber Threat Intelligence Platform (FinTIP)<sup>40</sup> in the second half of 2022, bringing the number of entities participating in the network to 40. FinTIP continues to support efforts by the industry to further strengthen its cyber defences through the sharing of cyber threat intelligence among financial institutions. Ongoing efforts are being taken by FinTIP to enhance the coverage of localised threat intelligence sharing beyond the financial industry. This is achieved by collaborating with local cybersecurity agencies to capture real-time and enriched threat intelligence for a more timely assessment of the threat landscape.

Financial institutions continue to identify cyber risk as a top risk facing the industry in 2023 amid growing digitalisation and use of technology in finance, as well as widespread remote working arrangements which increase the potential for exploitation of vulnerabilities. This is expected to keep financial institutions focused on prioritising efforts to improve cyber resiliency.<sup>41</sup> Other key operational

risks identified by financial institutions in the period ahead include regulatory non-compliance, competition for critical talent and outsourcing-related risks (Diagram 1.1).

## Payment and settlement systems continued to maintain high system availability

The Real-time Electronic Transfer of Funds and Securities System (RENTAS)<sup>42</sup> and major retail payment systems (RPS) continued to maintain high system availability, with no cyber incidents detected in the second half of 2022.

In order to ensure high system availability, the Bank and Payments Network Malaysia Sdn Bhd (PayNet), as payment system operators of RENTAS and major RPS, respectively, continued to enhance control measures to maintain a strong degree of resilience

Diagram 1.1: Key Operational Risks and Mitigating Actions



### Cyber threats

- Robust TPSP management process for constant identification, assessment and management of risks
- Implementation of 3-tier architecture, strengthened with security devices such as intrusion implementation systems (IPS) and intrusion detection systems (IDS)
- Annual penetration testing and 24/7 security monitoring, DDoS protection, access controls, patch management and cyber insurance
- Continuous security education and awareness, and specialised security training and certifications for IT personnel



### Regulatory non-compliance

- Regular gap analysis and escalation of exceptions to senior management and board
- Timely compliance reviews of new regulatory requirements using risk-based approaches
- Enhancing internal procedures to introduce segregation of duties, independent checks, segmented system access control and multi-tier authorisation processes
- Action plans to support sustainability risk management, such as reviewing investment portfolios and introducing green energy funds



### Competition for critical talent

- Benchmarking exercises to enhance recruitment and retention
- Enhancing talent management and succession planning



### Outsourcing-related risks

- Strengthening internal processes for outsourcing and third-party risk management
- Establishing a working committee with service providers to monitor adherence to the service level agreement (SLA)
- Regular meetings with service providers on deliverables and issues
- Regular oversight by risk committees on outsourcing arrangements, with dedicated resources, proper governance and regularly updated risk registers
- Ensuring service providers maintain adequate business continuity plans (BCPs) and disaster recovery plans (DRPs)



### Human error in executing tasks

- Strengthening internal controls and automating manual processes prone to human error
- Developing a thorough understanding of root causes to develop more effective processes and controls

Source: Bank Negara Malaysia

<sup>40</sup> FinTIP is a technology platform for local financial institutions to rapidly share cyber security threat intelligence and best practices.

<sup>41</sup> Based on the 2022/2023 Emerging Operational Risk Survey conducted by Bank Negara Malaysia.

<sup>42</sup> RENTAS is a real-time gross settlement system for interbank fund transfers, debt securities settlement and depository services for scrippless debt securities.

against cyber threats, strengthen the management of critical service providers (CSPs) and further improve business continuity management (BCM):

- Various initiatives are being pursued to continuously strengthen the Bank and PayNet's cyber defence and response capabilities.
- RENTAS and Designated Payment Systems (DPS) were subjected to enhanced BCM requirements following the issuance of strengthened BCM expectations by the Bank in December 2022. The enhanced requirements, coupled with live-runs and BCP scenarios conducted successfully during the year, will further strengthen responses in the event of disruptions; and
- In line with recommendations by the Committee on Payments and Market Infrastructures (CPMI),<sup>43</sup>

RENTAS and RPS operators are also enhancing policies and procedures for stronger management of CSPs. These include improvement in the governance and monitoring process, stronger due diligence and selective on-site reviews of CSPs.

Effective 10 February 2023, the Real-time Retail Payments Platform (RPP) has been prescribed as a designated payment system under the Financial Services Act 2013 and Islamic Financial Services Act 2013. This designation accords the Bank with additional powers under the law to issue directives to RPP participants and assume control of the operations of RPP in specific circumstances to safeguard financial stability and the provision of critical payment services.

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<sup>43</sup> Annex F of the Principles for Financial Market Infrastructures published by CPMI outlines five oversight expectations for critical service providers i.e., risk identification and management, information security, reliability and resilience, technology planning and communication with users.

## Artificial Intelligence in the Malaysian Financial System: Opportunities, Risks, and the Way Forward

### Introduction

Recent years have seen artificial intelligence and machine learning (AI/ML) come of age with proven, real-world solutions being deployed across industries.

Breakthroughs in algorithms and techniques, greater abundance of data, and advancements in computational power have contributed to AI/ML's transformative impact and potential for businesses. At the same time, the growing pool of tech talent and expertise, scalable cloud infrastructure, and low cost solutions (e.g., open-source technology) have also lowered the barriers to adoption of AI/ML, thus hastening its adoption.

### AI/ML promises new opportunities in finance...

In the area of financial services, the greater adoption of AI/ML techniques offers new propositions for enhancing customer experience and product offerings, particularly through product personalisation at-scale, and faster and more convenient service. AI/ML also helps unlock insights that enable FSPs to make better decisions, while also automating processes. In turn, these have the potential to help FSPs better manage risks, improve operational efficiency and productivity, and reduce cost.

In 2021, BNM conducted a preliminary survey on the use of AI/ML by FSPs with 25 respondents comprising banks, insurers and payments operators in Malaysia. The respondents were selected based on size and track record of digital initiatives, as well as participation in the Open API Implementation Group.<sup>1</sup> Diagram 1 captures the actual and potential use cases for AI/ML identified by respondents, which span across various functions and business lines.

The survey revealed that many FSPs in Malaysia are already actively using AI/ML techniques, with more initiatives under development. At present, AI/ML is most commonly being deployed in the areas of customer analytics and engagement, as well as for e-KYC and digital customer onboarding. Some banking institutions are also supplementing their credit underwriting processes with AI/ML techniques for selected financing products. The higher risk sensitivity of these AI/ML models promote prudent exposure to higher risk borrowers and more accessible services to deserving but underbanked customers. The survey also revealed strong interest and support from the senior management and boards of the FSPs. About half of the respondents considered AI/ML adoption as a potential game changer for the way they do business and are already looking for opportunities beyond the context of known use cases and current AI/ML projects. Diagram 2 sets out a summary of the key findings from the survey.

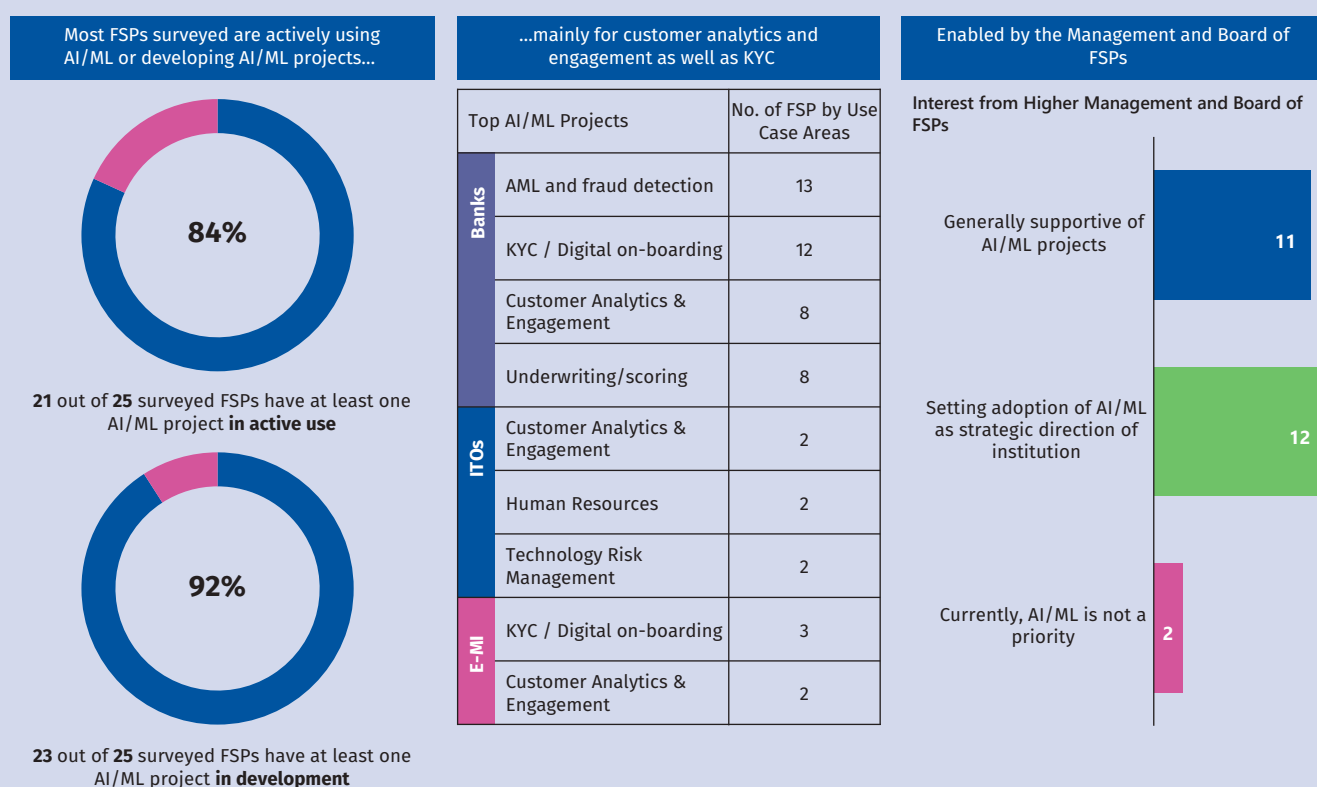
<sup>1</sup> Established by BNM in 2018 to promote standardisation of Open Application Programming Interface (API), which would enhance third party access to data, supported by the security, legal and governance frameworks necessary to protect customer data and financial institutions' core systems.

Diagram 1: Examples of AI/ML Use cases in Financial Services



Source: Bank Negara Malaysia

Diagram 2: Summary of Selected

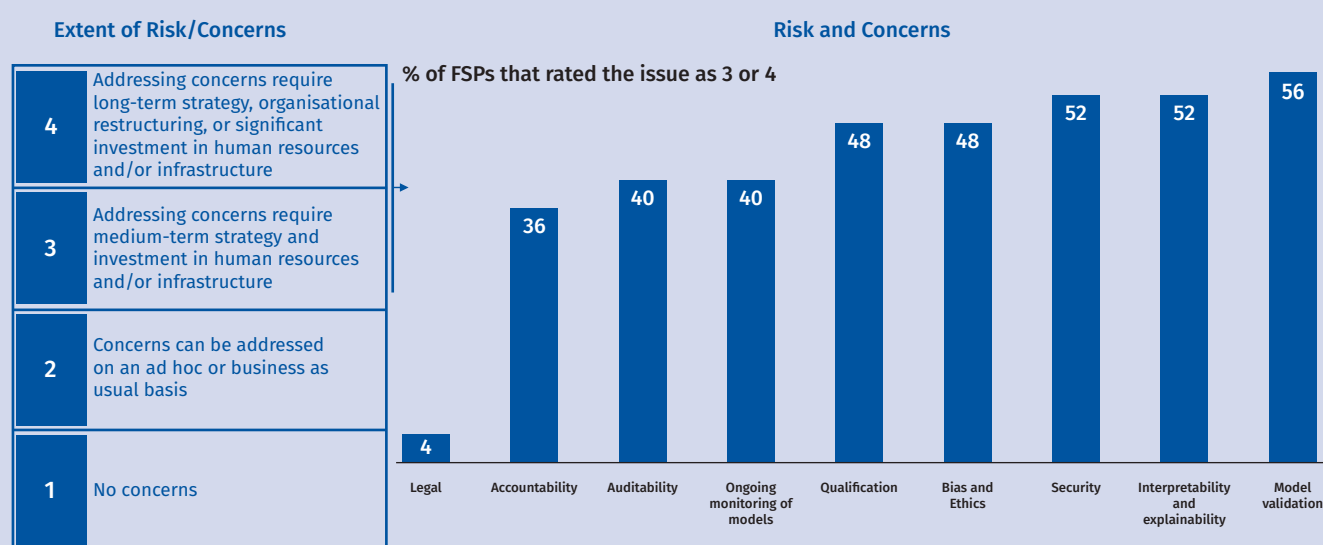


Source : Bank Negara Malaysia

### ...and risks which need to be carefully managed

However, the introduction and more pervasive use of AI/ML also raises a number of risks which the financial sector will need to manage. The survey surfaced several key AI/ML risks and concerns, as identified by FSPs (see Diagram 3).

Diagram 3: Risk and Concerns Identified in Adopting AI/ML



Source: Bank Negara Malaysia

Respondents to the survey cited model validation as the topmost concern of FSPs. Model risk is the risk that models fail to produce accurate results. As most AI/ML models and algorithms are significantly more complex than traditional linear models, model outputs can be difficult to explain and validate. The opacity of AI/ML systems may also delay the detection of any errors or inaccuracies. Timely validation of models, incorporating algorithms that are trained using updated data sets, is crucial in managing model risk and maintaining the predictive ability of the model. Without this, model performance typically deteriorates over time and could result in inaccurate predictions or larger than expected errors, which renders the model unreliable for decision-making. This could lead to undesirable outcomes, such as financial losses, or biased or unfair decisions which impact customers negatively, in turn, exposing FSPs to reputational and legal risks.

Another major aspect of model validation relates to data management and assurance of data quality. Some AI/ML systems require large volumes of data – including high-velocity transaction data – from a variety of sources. This requires robust enterprise data governance to ensure data reliability and quality. The use of a broader range of data, including personal data, also raises concerns about data security and privacy. According to an earlier survey on consumer trust conducted by BNM in 2021,<sup>2</sup> security and privacy are the most important determinants of consumer willingness to share personal data with financial institutions (See Diagram 4).

**Diagram 4: Determinants of Consumer Trust in Sharing Data in Malaysia**

**Q: I am more willing to share data with my financial institution with the following conditions:**

The institution ensures my personal data is stored in safe and secure manner at all times

73.4%

The institution promises not to sell it to other companies

70.0%

The institution helps me to analyse it to better understand about myself

49.6%

I can access the data in a useable and useful format for me to share with other institutions of my choice

48.7%

It results in the institution being able to provide me a better customer experience

27.8%

The institution shares insights with me, based on data collected (anonymously) from all its consumers

25.2%

My data could help this institution offer benefits to other consumers or society at large

5.3%

\*Percentages based on items ranked in top 3

Source : Bank Negara Malaysia

At a broader level, increased adoption of AI/ML by FSPs could potentially introduce new risks to financial stability, particularly if the models are poorly calibrated or inappropriately used. Examples of undesirable outcomes include discrimination of certain consumer groups, reduced operational resilience, or amplification of financial shocks from algorithm-driven behaviours. Such risks remain low at present based on the nature and extent of adoption of AI/ML by FSPs. Most FSPs are also approaching the implementation of AI/ML with appropriate caution and care. For instance, the implementation of AI/ML for credit underwriting is typically limited to selected financing portfolios, with close monitoring of the results before the scope is expanded gradually. There are also safeguards put in place by the FSPs to ensure AI/ML systems are kept in-check, such as monitoring of False Acceptance Rate for identity verification using e-KYC solutions.

<sup>2</sup> The survey titled “Consumer Trust Survey” was issued to the public in December 2021. The survey garnered 413 responses from individuals of all ages, income groups and education levels.

## Regulations to promote responsible use of AI/ML

The global regulatory landscape governing the use of AI/ML remains relatively nascent. Nonetheless, an increasing number of financial regulators in economies such as Singapore, Hong Kong and the UK have published high level principles or issued guidance on best practices on the responsible use of AI/ML in the financial sector. Some of these documents were produced in collaboration with industry or academic experts. These issuances generally aim to ensure sound and transparent AI/ML systems, promote clear assignment of accountability, and ensure that FSPs pay careful consideration to fairness and other ethical concerns.

### Diagram 5: Regulatory Requirements in Managing Risks from AI/ML Adoption

**Fair Treatment of Financial Consumers (2019)** requires FSPs to ensure that consumers are not subject to unfair discriminatory practices

**Risk Governance (2013)** states that “... use of models for identifying and measuring risk should be supported by robust processes for managing model risk”

**Management of Customer Information and Permitted Disclosure (2021)** sets out requirements relating to FSPs’ practices and controls in handling customer information

**Guidelines on Data Management and MIS Framework (2012)** requires financial institutions to establish and maintain a sound data management and management information system (MIS) framework

**Risk Management in Technology (2020)** requires the technology risk management framework of a financial institution to include identification of risks from the adoption of new or emerging technology, and the associated controls and mitigations

Source: Bank Negara Malaysia

For Malaysia, FSPs are expected to observe existing regulatory requirements (see Diagram 5) in their use of AI/ML applications. While the existing body of standards addresses key risks and considerations that remain relevant to the use of AI/ML by FSPs, greater adoption – in terms of pervasiveness as well as specific use cases that have a higher bearing on critical risk drivers – could call for refinements to existing standards. In particular, further guidance around model interpretability and explainability may be needed as more insight is gained on FSPs’ evolving practices. BNM will continue to closely monitor developments and innovations in the industry to inform its regulatory and supervisory approach in ensuring that the risks associated with AI/ML are understood and well managed.



# Financial Institution Soundness and Resilience

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# Financial Institution Soundness and Resilience

## THE BANKING SECTOR

### Banks' strong funding and liquidity positions remained supportive of intermediation activities

Banks continued to maintain adequate liquidity buffers in the second half of 2022. The expiry of the SRR flexibility<sup>1</sup> at the end of 2022 had a limited impact on banking system liquidity. All banks had sufficient excess liquidity placed with the Bank to replace the MGS and MGII holdings that were used to comply with the SRR. The Net Stable Funding Ratio (NSFR) and Liquidity Coverage Ratio (LCR) remained healthy, at 118.2% and 154.0% as at December 2022, respectively (Chart 2.1 and Chart 2.2). The healthy funding position of the banking system supported lending to households and businesses amid the ongoing economic recovery while ensuring that banks remained resilient against liquidity shocks, both over the short- and longer-term horizon.

Banking system deposits continued to grow at a healthy pace of 5.9%, above pre-pandemic levels (2015-2019 CAGR: 4.4%) (Chart 2.3). Deposits also grew faster than loan growth, thus ensuring adequate funding to support intermediation activities. Deposits from individuals and businesses continued to account for the bulk of banking system deposits at 36.1% and 33.1%, respectively. While the rising interest rate environment has placed some pressure on the value of banks' high-quality liquid assets (HQLA),<sup>2</sup> banks continued to have sufficient HQLA

(December 2022: RM753.4 billion) to meet stressed cash outflows over at least a 30-day period. More than 80% of these HQLA are in the form of placements with the Bank and government bonds, which banks can access and pledge in the interbank market or with the Bank for additional liquidity. All banks also have access to the standing facilities and Restricted Committed Liquidity Facility (RCLF)<sup>3</sup> with the Bank.

Expectations of rising rates are posing some challenges to banks from a widening maturity mismatch and rising cost of deposits as rate-sensitive depositors (businesses and NBFIs) shifted significantly towards shorter-term deposits (Chart 2.4) in anticipation of further increases in the OPR. These depositors also demanded higher deposit rates for longer-term deposits to compensate for the potential loss in deposit returns if the OPR rises further.

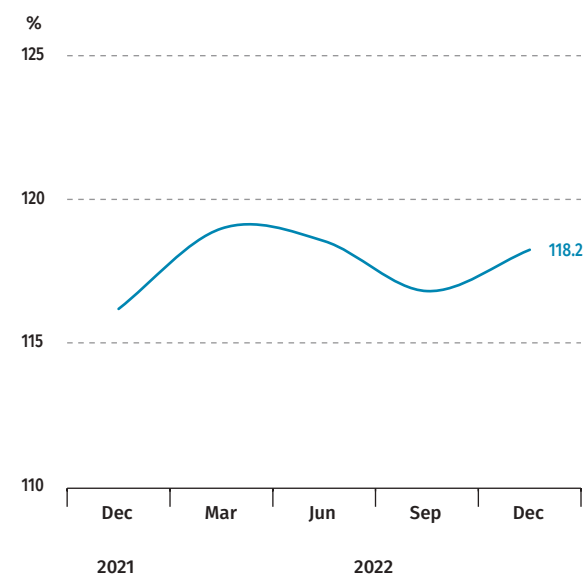
The changes in depositor behaviour and seasonal volatility in deposits typically observed at year-end saw some banks increasingly tap the interbank market, particularly for longer-term funding. This has placed some upward pressure on interbank rates, particularly in the fourth quarter of 2022 (3-month interbank rate: +62 bps). However, the impact on banks' cost of funds remained manageable, with the increase in cost remaining broadly in line with the increase in OPR during the period (OPR: +100 bps; banks' cost of funds: +98 bps) (Chart 2.5). More importantly, the increase has not resulted in any notable tightening in bank lending. Banks continued growing their loan portfolios at above pre-pandemic levels (5.7%; 2015-2019 CAGR: 5.3%) (Chart 2.6), while the pricing of new and existing outstanding loans broadly reflected changes in the OPR.

<sup>1</sup> The flexibility to allow banks to use MGS and MGII to meet the SRR compliance was introduced at the onset of the pandemic to provide greater flexibility for banks in their liquidity management and support the continued smooth functioning of the bond market.

<sup>2</sup> These HQLA are in the form of available unencumbered assets, and are valued at mark-to-market prices.

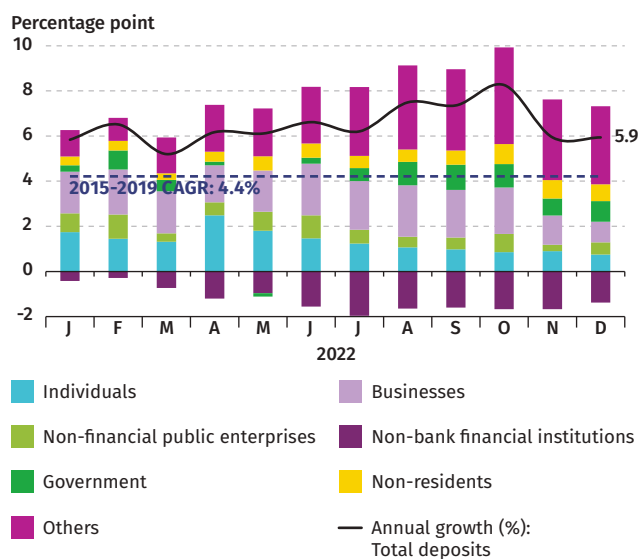
<sup>3</sup> The RCLF was introduced by the Bank in 2016 to allow banks to obtain liquidity for tenures greater than one month from the Bank. Banks that intend to use the RCLF will be charged a fixed facility rate and will be required to designate a pool of unencumbered eligible securities that would be sufficient to support the total size of the RCLF.

## Chart 2.1: Banking System – Net Stable Funding Ratio



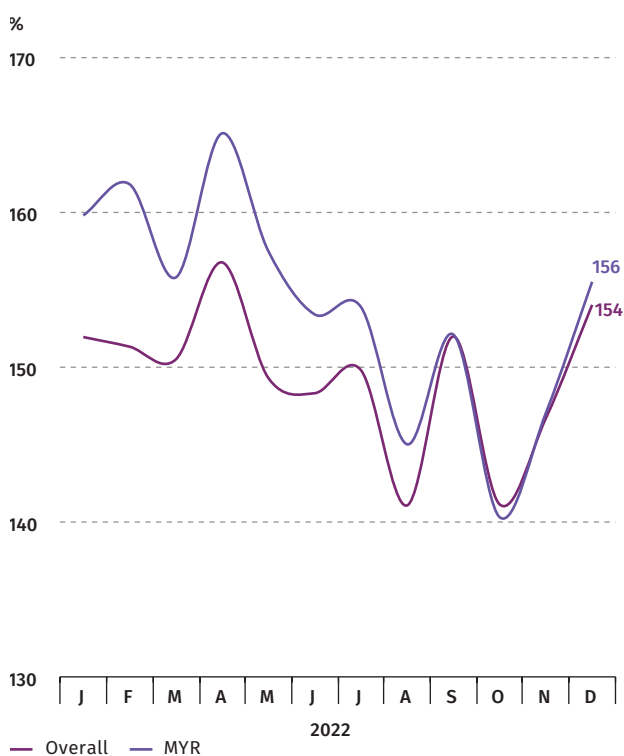
Source: Bank Negara Malaysia

## Chart 2.3: Banking System – Contribution to Growth in Deposits Accepted



Source: Bank Negara Malaysia

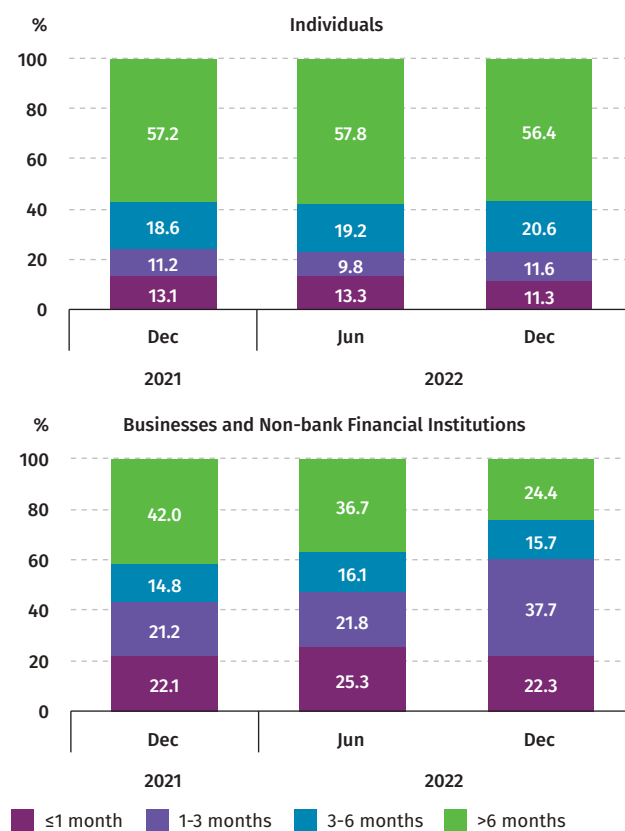
## Chart 2.2: Banking System - Liquidity Coverage Ratio



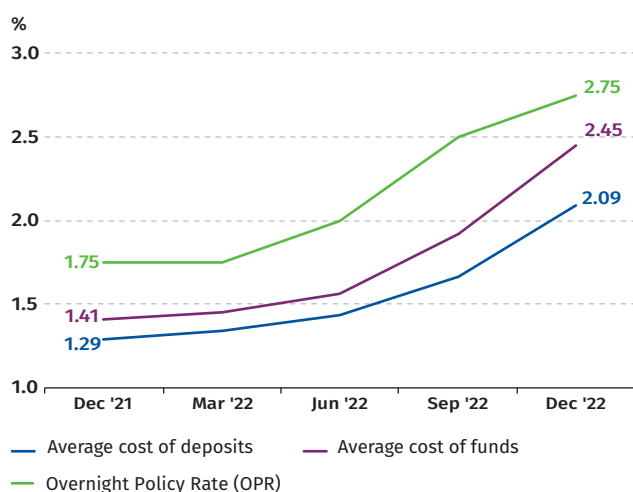
Note: 1. MYR LCR is calculated based on HQLA and expected net cash outflows denominated in ringgit.  
2. Overall LCR is calculated based on HQLA and expected net cash outflows denominated in all currencies.

Source: Bank Negara Malaysia

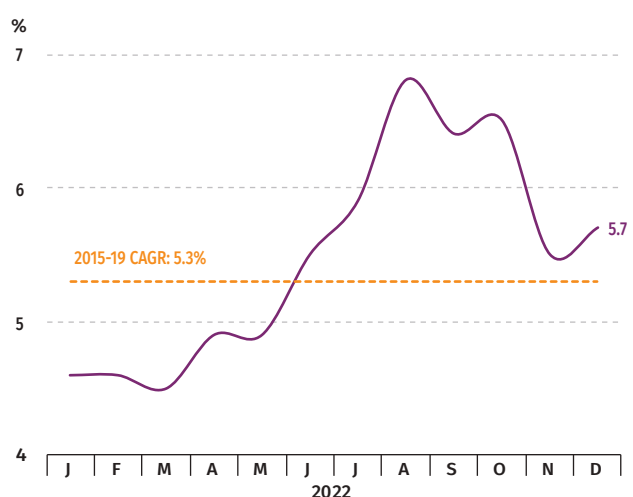
## Chart 2.4: Banking System – Composition of Fixed Deposits by Original Maturity



Source: Bank Negara Malaysia

**Chart 2.5: Banking System – Average Cost of Deposits, Average Cost of Funds and OPR**

Source: Bank Negara Malaysia

**Chart 2.6: Banking System – Annual Loan Growth**

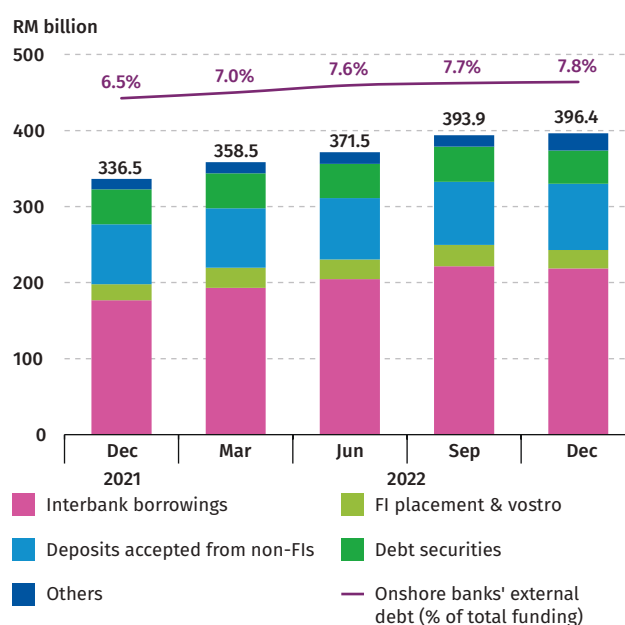
Source: Bank Negara Malaysia

## Risks from banks' external debt exposures remained manageable

Banks' external debt increased by RM24.9 billion in the second half of 2022 to RM396.4 billion (Chart 2.7), largely driven by higher interbank borrowings by banks in the Labuan International Business and Financial Centre (LIBFC) from their related offshore counterparts (2H 2022: +RM5.1 billion). The bulk of these borrowings were subsequently channelled into financing and investment activities with non-resident counterparties,

thus limiting any domestic spillovers from adverse risk developments. Several domestic banking groups (DBGs) also tapped the international interbank market to bridge temporary foreign currency (FCY) liquidity gaps from maturing deposits.

Overall risks from FCY external debt exposures of banks continued to be well-contained. FCY external debt-at-risk (DAR)<sup>4</sup> remained manageable at RM80.4 billion or 20.3% of total banking system external debt. Banks continued to maintain sizeable FCY liquid assets, sufficient to cover up to 2.6 times of FCY DAR (June 2022: 2.6 times; 2015-2019 average: 2.9 times) (Chart 2.8). The remaining 79.7% of external debt largely comprised interbank exposures with related counterparties or more stable long-term debt, thereby limiting rollover risk faced by banks. Amid elevated levels of market volatility during the period, banks' foreign exchange net open position (FX NOP) from domestic operations declined to a historical low of 3.6% (June 2022: 4.4%) of banks' total capital (Chart 2.9), reflecting the lower risk appetite of banks for uncovered exposures. This conservative FX NOP position limits further FCY liquidity risks from movements in the ringgit.

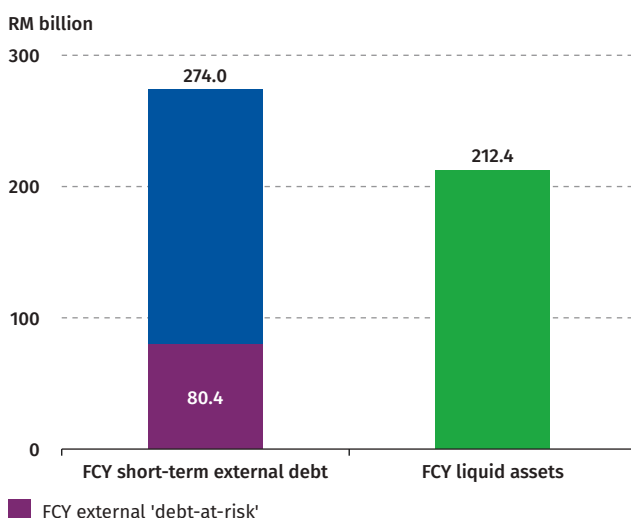
**Chart 2.7: Banks' External Debt – by Instrument**

Note: Banks' external debt in this context refers to external debt of DBGs, LIFBs and banks in the Labuan International Business and Financial Centre (LIBFC).

Source: Bank Negara Malaysia

<sup>4</sup> Banks' external debt-at-risk comprises financial institutions' deposits, interbank borrowings, and short-term loans from unrelated non-resident counterparties, which are considered to be more susceptible to sudden withdrawal shocks.

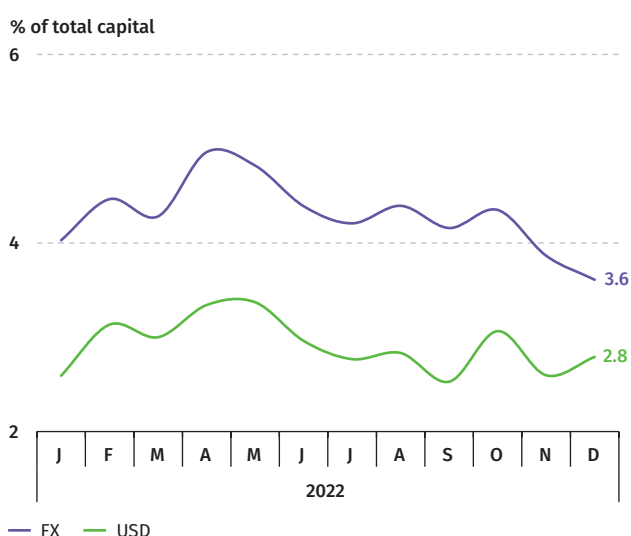
**Chart 2.8: Banking System – FCY External ‘Debt-at-Risk’ and Liquid Assets**



Note: Liquid assets comprise cash and cash equivalents, unencumbered debt securities held and interbank placements.

Source: Bank Negara Malaysia

**Chart 2.9: Banking System – FX and USD Net Open Positions**



Source: Bank Negara Malaysia

## Credit risk outlook improved, but banks remain vigilant

The share of loans under repayment assistance programmes declined further to 4.2% of total banking system loans (June 2022: 5.7%). The resumption of loan servicing by borrowers who exited such programmes has helped improve

banks' visibility over repayment behaviour. This in turn contributed to an improved outlook for credit conditions among banks with the share of Stage 2 loans correspondingly declining closer to pre-pandemic levels (Chart 2.10).

The gross impairment ratio stood at 1.7% at the end of 2022 (June 2022: 1.8%) (Chart 2.11). In value terms, impaired loans increased at a slower pace compared to the first half of 2022. A small number of vulnerable household and SME borrowers continued to have difficulties paying their loans after exiting repayment assistance programmes. Most of these loans had previously been identified through banks' proactive engagements with the borrowers, and were therefore already provided for through Stage 2 provisions or management overlays. Meanwhile, non-SME loan impairments declined to 2.8% in December 2022 (June 2022: 3.1%). Moving forward, while credit conditions are expected to broadly improve along with economic growth, elevated levels of input costs for businesses and living expenses for households could pose some downside risks to impairments in 2023.

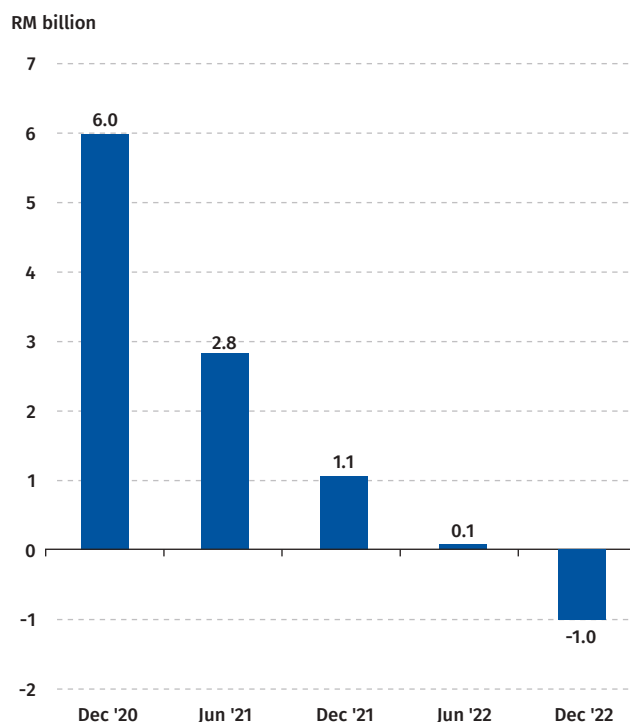
In line with the improvements observed in overall repayment trends, some banks have written back provisions assigned through management overlays during the pandemic for retail borrowers with good repayment behaviour. This, coupled with write-offs of some legacy loans during the period, resulted in provisions recording a decline in the second half of 2022 (Chart 2.12). Loan-loss coverage ratios, including regulatory reserves, nonetheless remained high (December 2022: 118.2%; June 2022: 115.3%; 2015-2019 average: 112.5%) as banks remain vigilant against unfolding credit risks, particularly for loans that are still under, or newly exiting, repayment assistance programmes. Banks' earlier build-up of provisions continues to provide prudent buffers against future expected losses, with the ratio of total provisions to total loans remaining well above pre-pandemic levels despite the modest release in provisions during the year (December 2022: 1.7%; 2018-2019 average: 1.4%). Annualised credit costs have started to normalise towards pre-pandemic levels (December 2022: 20 bps; 2015-2019 average: 14 bps) (Chart 2.13). Moving forward, credit cost is expected to continue to decline as banks write back some of the pandemic-period management overlay provisions in line with refinements to, and revalidation of, provisioning models.

Chart 2.10: Banking System – Stage 2 Loans Ratio



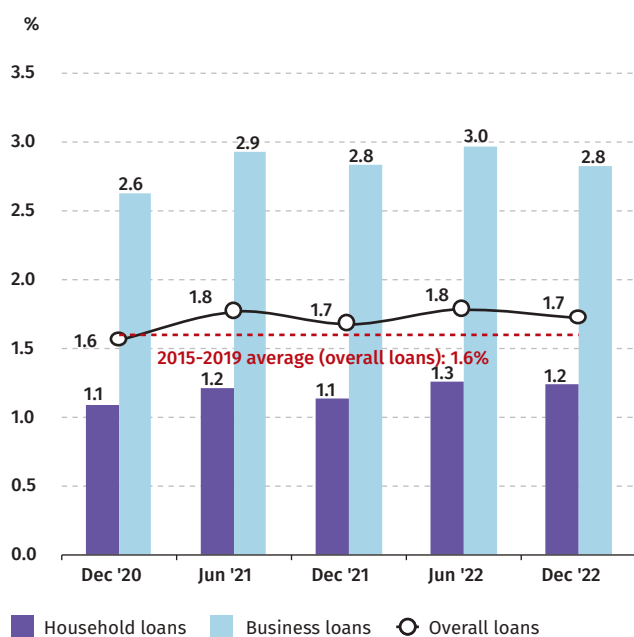
Source: Bank Negara Malaysia

Chart 2.12: Banking System – Half-yearly Change in Provisions



Source: Bank Negara Malaysia

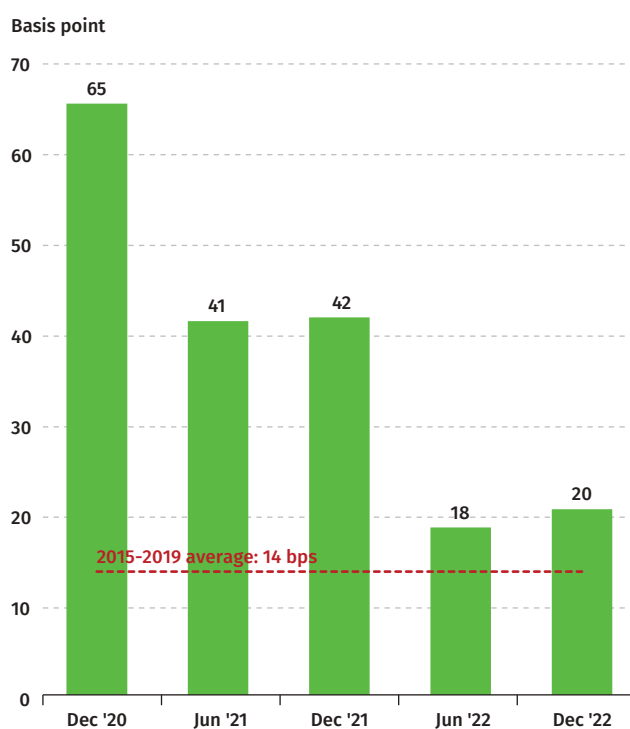
Chart 2.11: Banking System – Gross Impaired Loans Ratio



Note: The loan/financing data from 2021 onwards are based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology.

Source: Bank Negara Malaysia

Chart 2.13: Banking System – Annualised Credit Cost Ratio



Source: Bank Negara Malaysia

## Sustained recovery in banks' earnings but downside risks remain

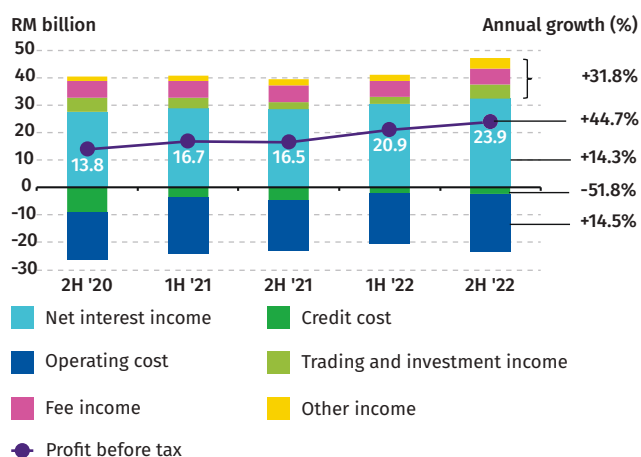
Bank earnings continued its recovery momentum from the first half of 2022 (Chart 2.14). Net interest margins were sustained by both stronger loan growth and higher lending rates, which outpaced the increase in funding costs. Returns on assets and equity of the banking system correspondingly improved to 1.4% and 12.4% (June 2022: 1.3% and 11.8%), respectively. Similarly, market valuations of listed banks, as measured by the price-to-book (P/B) and price-to-earnings (P/E) ratios also trended higher to 0.9 and 12.2 (June 2022: 0.8 and 11.0), respectively (Chart 2.15). Nevertheless, these valuations have not fully recovered to pre-pandemic levels (2015-2019 average: 1.1 and 11.5), reflecting investor concerns over lingering uncertainties in the operating environment for banks in 2023.

Trading and investment income provided some support to banks' profits in the second half of 2022 despite increased global market volatility during the period (December 2022: 10.2% of banking system's total income; June 2022: 6.9%; 2015-2019 average: 10.4%). Active risk management by banks and market optimism following the slowdown in the pace of tightening by the Fed led to an improvement in banks' trading and investment income (2H 2022: +RM5.1 billion; 1H 2022: +RM2.8 billion). The decline in domestic bond yields in the last two months of 2022, coupled with a stronger ringgit in the last quarter saw banks record gains from their fixed income and FX portfolios.

Banks' holdings of government bonds have increased since the onset of the pandemic (December 2022: 9.9% of banking system total assets; December 2021: 9.4%; 2015-2019 average: 6.8%), exposing banks to higher interest rate risks. Banks continue to monitor these risks carefully to ensure it remains within their internal risk appetite. Of late, a larger share (35.4%; December 2021: 31.8%; 2015-2019 average: 25.2%) of government bonds held by banks is recorded at amortised cost. This has reduced fluctuations in banks' capital positions in an environment of rising interest rates. The high capital buffers of banks also continue to preserve banks' ability to absorb any realised mark-to-market losses from this portfolio. Under a scenario of a 200 bps increase in yield, the mark-to-market losses would reduce the aggregate capital base by 6.2% or total capital ratio by 1.1 percentage points. This remains well

within the internal capital targets set by most banks. Among the large DBGs, internal capital targets are set at levels between 4 to 7 percentage points higher than the regulatory minimum to buffer against additional risks including interest rate risk in the banking book.<sup>5</sup> Going forward, financial market volatility is likely to remain elevated and could continue to weigh on banks' trading and investment income although current market risk management strategies by banks point to a modest impact on profitability.

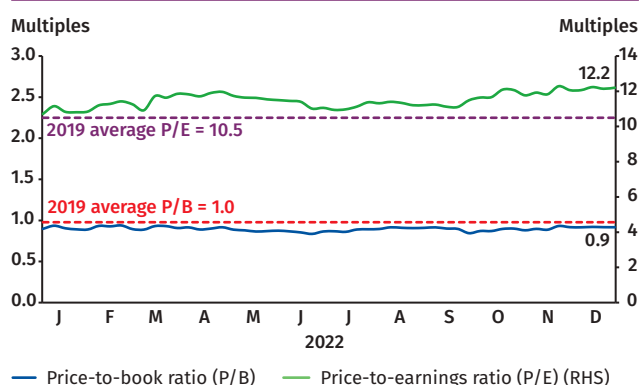
**Chart 2.14: Banking System – Income, Cost and Profit before Tax**



Note: 1. Annual growth computed based on figures for 2H 2021 and 2H 2022.  
2. Figures may not add up due to rounding.

Source: Bank Negara Malaysia

**Chart 2.15: Banking System – Price-to-Book and Price-to-Earnings Ratios of Publicly Listed Banks in Malaysia**



Note: Refers to median ratio of all publicly listed banks in Malaysia.

Source: Bloomberg

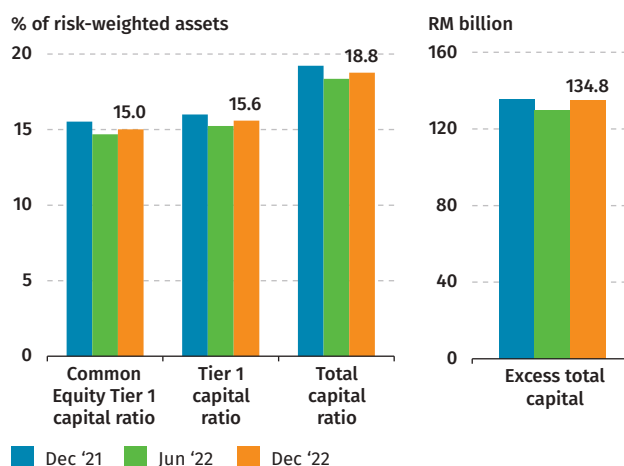
<sup>5</sup> All banks are required to assess their interest rate risk in the banking book on an ongoing basis as part of their Pillar 2 internal capital adequacy assessment process. This simulates the impact of a sharp increase in yields for assets held in the banking book and assesses the adequacy of capital to withstand these shocks.

The banking system remained well-capitalised, bolstering banks' capacity to support lending activity and absorb unexpected losses

The banking system total capital ratio remained strong (18.8%; June 2022: 18.4%), with capital buffers of RM134.8 billion in excess of the regulatory minimum (Chart 2.16). Improvements in profitability will provide further support for banks' capital buffers, with most banks maintaining capital conservation strategies (including dividend reinvestment programmes) to preserve their buffers. This in turn will continue to support credit to the economy and preserve banks' capacity to absorb unexpected losses. Active risk management and hedging by banks will also help mitigate the impact of volatile market conditions on their capital positions. Work is ongoing by the Bank to progressively adopt key elements of the Basel III reforms package to further improve the

risk-sensitivity of the capital framework (Diagram 2.1). This will reinforce the capital strength of the banking system going forward.

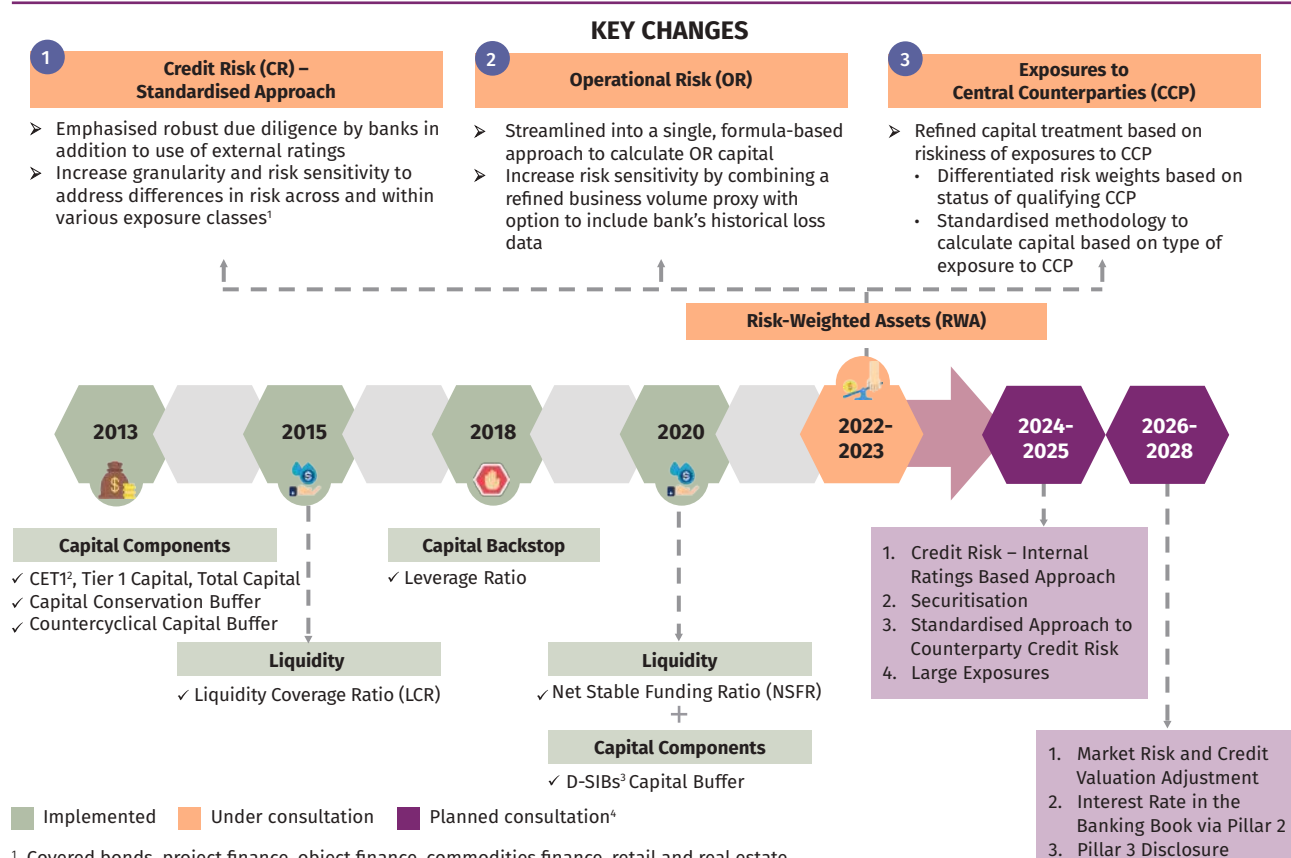
**Chart 2.16: Banking System – Capitalisation**



Note: Excess total capital refers to total capital above the regulatory minimum, which includes the capital conservation buffer requirement of 2.5% and bank-specific higher minimum requirements.

Source: Bank Negara Malaysia

**Diagram 2.1: Malaysia's Progress in Adopting Basel III Reform Package**



<sup>1</sup> Covered bonds, project finance, object finance, commodities finance, retail and real estate

<sup>2</sup> Common Equity Tier 1 capital

<sup>3</sup> Domestic systemically important banks

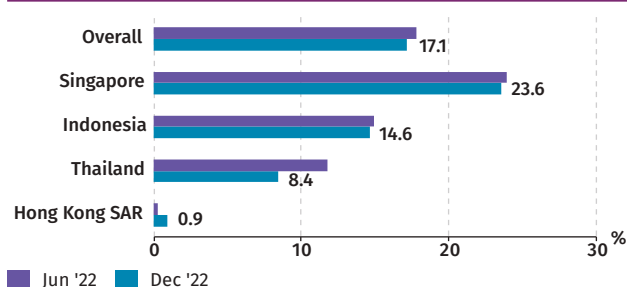
<sup>4</sup> Consultation timelines will take into consideration future developments

Source: Bank Negara Malaysia

## DBGs' overseas operations remained resilient, with improved repayment trends in most jurisdictions

The profitability of overseas operations<sup>6</sup> of DBGs fell in the second half of 2022 but was stronger compared to the corresponding period in 2021 (Chart 2.17). The slight decline in profitability was observed in operations in Singapore, Indonesia and Thailand, which accounted for more than 80% of total overseas operations in terms of assets (Chart 2.18). The decline was driven by the lower trading income and higher credit costs recorded in some jurisdictions in the last quarter of 2022. Nonetheless, profitability in major operations continued to be supported by net interest income on the back of sustained strong loan growth (December 2022: 9.1%; June 2022: 11.3%; 2021: 7.9%). Similar to Malaysia, improvements in repayment trends were also observed in these economies. The share of loans under pandemic repayment assistance programmes has halved from 4.5% in December 2021 to 2.0% of total overseas operations loans. This has led to better asset quality (Chart 2.19) and lower additional provisions from DBGs' overseas operations, further supporting improvements in profitability compared to 2021. Overseas operations also remained largely funded by local customer deposits (Chart 2.20), thus limiting the risk of liquidity and funding stress and contagion risks to DBGs. Capital levels maintained at DBGs' overseas operations also remain healthy, providing additional buffers against potential credit losses without the need to rely on additional parental support.

**Chart 2.17: Banking System – Return on Equity of Overseas Operations by Jurisdiction**

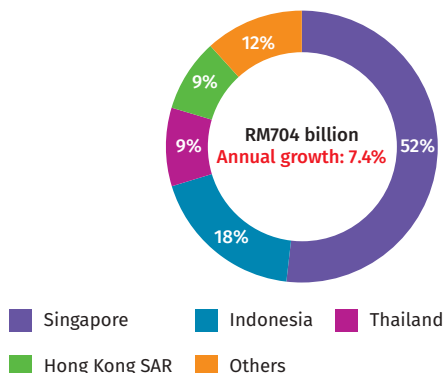


Note: 1. Overall average ROE is weighted by the asset size of selected overseas operations.  
2. Average ROE is weighted by the asset size of each domestic banking groups' overseas operations in respective jurisdictions.

Source: Bank Negara Malaysia

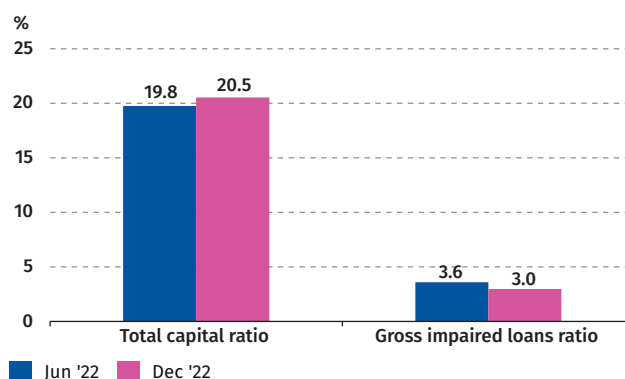
<sup>6</sup> Refers to DBGs' overseas offices, namely branches and subsidiaries operating outside of Malaysia and LIBFC. DBGs are present in 14 economies, with major operations in Singapore, Indonesia, Thailand and Hong Kong SAR.

**Chart 2.18: Banking System – Asset Profile of Major Overseas Operations**



Source: Bank Negara Malaysia

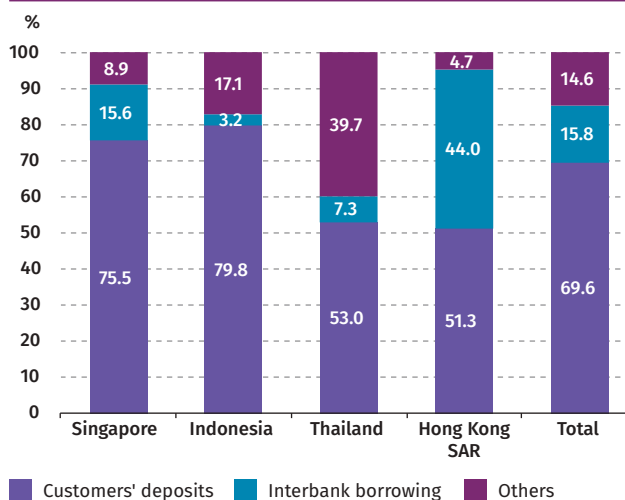
**Chart 2.19: Banking System – Key Financial Indicators of Overseas Operations**



Note: The average key financial indicators are weighted by the asset size of selected overseas operations.

Source: Bank Negara Malaysia

**Chart 2.20: Banking System – Funding Profile of Major Overseas Operations**



Note: Figures may not add up due to rounding.

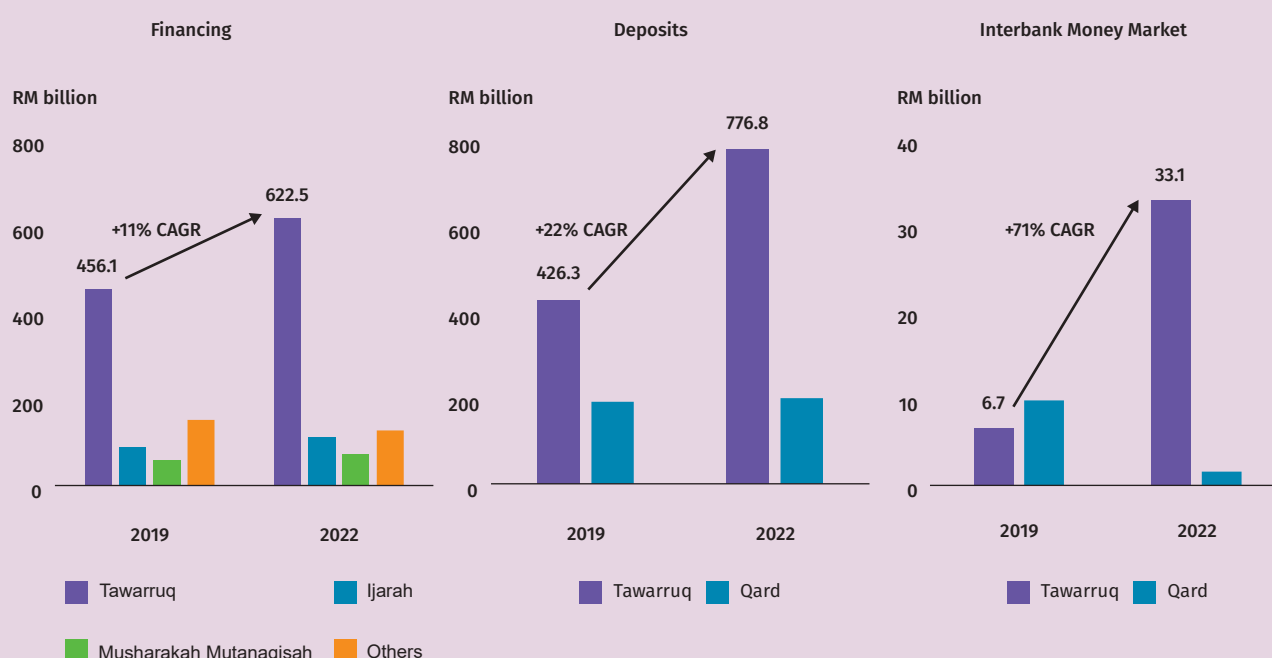
Source: Bank Negara Malaysia

# Managing Transmission of Vulnerabilities in Commodity Markets Associated with the Application of *Tawarruq* in the Islamic Banking System

## Application of *Tawarruq* in Islamic Banking

A wide range of Shariah contracts<sup>1</sup> arrangements are currently applied to facilitate Islamic banking transactions. Of these, *tawarruq* is the most widely used contract in key product segments which include financing, deposits and interbank money market (Diagram 1).<sup>2</sup> This is largely due to its ability to facilitate placement of funds<sup>3</sup> and provide cash for different finance purposes such as working capital, trade financing and purchase of properties.

**Diagram 1: Trend and Composition of *Tawarruq* and Other Shariah Contracts by Key Products Segments of Islamic Banks as at 31 December 2022**



Note: Interbank Money Market data refers to fund placements only, excluding placement with Bank Negara Malaysia

Source: Bank Negara Malaysia, Islamic banks and DFIs

*Tawarruq* entails two separate sale and purchase transactions of commodities<sup>4</sup> involving four parties – an Islamic bank, its customer and two commodity suppliers. The combination of transactions serves to create a debt obligation on the part of the counterparty that purchases the commodity on a deferred basis at an agreed price (determined in reference to a specified profit rate) (Diagram 2). A wide range of commodities is used in *tawarruq* transactions. These include crude palm oil (CPO), plastic resin, metals, rubber, crude oil and digital commodities which are sourced domestically or globally (Diagram 3). The trading of these commodities is managed by Islamic banks through the use of commodity brokers and exchanges (CBEs).

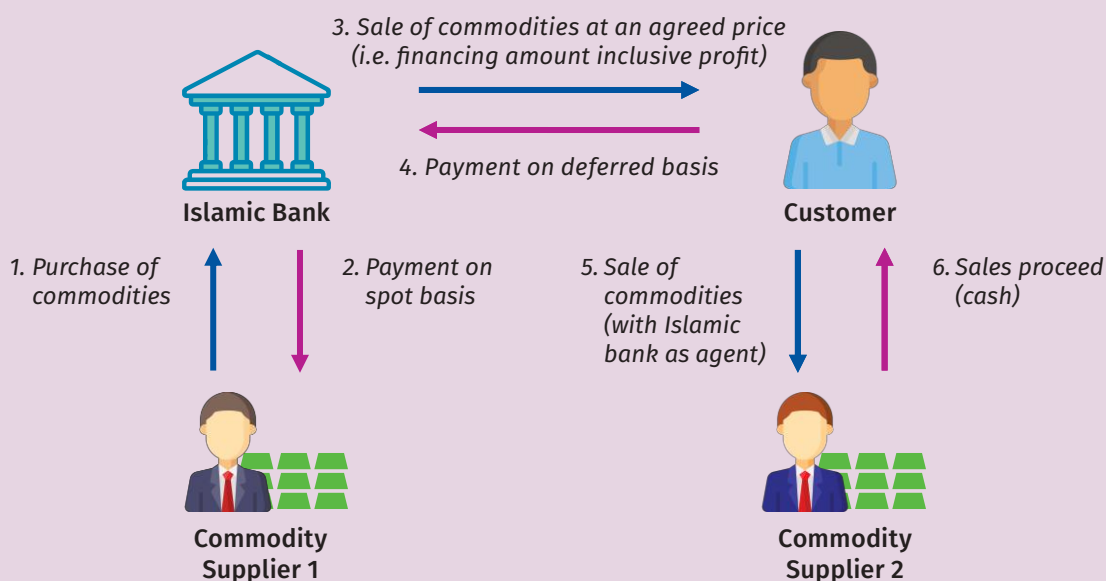
<sup>1</sup> The Shariah contracts consist of *murabahah*, *musharakah*, *mudarabah*, *istisna'*, *wakalah*, *wadi'ah*, *hibah*, *wa'd*, *kafalah*, *qard*, *bai' al-sarf*, *ijarah*, *rahn* and *tawarruq*

<sup>2</sup> Data excludes Islamic window

<sup>3</sup> Interbank money market, deposits, and cash management

<sup>4</sup> Except for gold and currencies

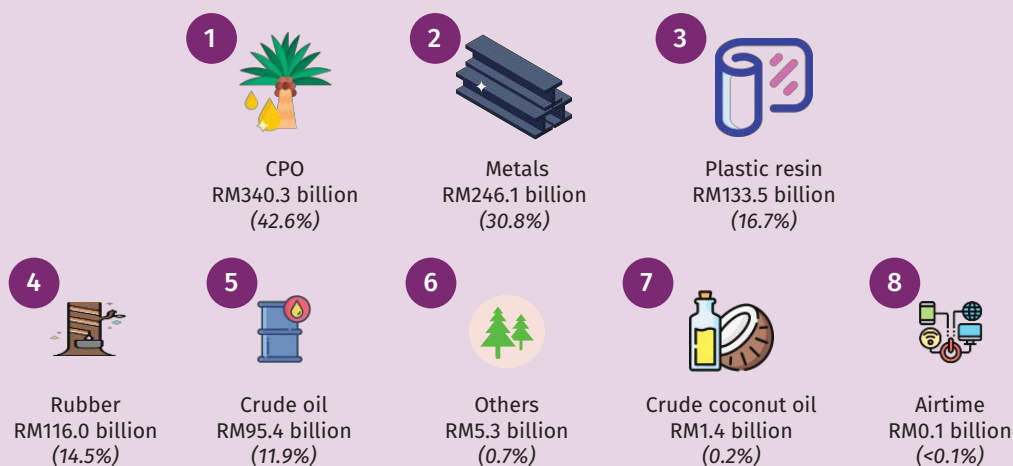
**Diagram 2: Illustration on *Tawarruq* Mechanism (Financing)**



Source: Bank Negara Malaysia

**Diagram 3: Commodities Used for *Tawarruq***

**Amount and composition of commodities used by trading volume  
(as at December 2022)**



Note: "Others" include palm olein, palm stearin, refined palm oil as well as hardwood and softwood timber

Source: Islamic banks and DFIs

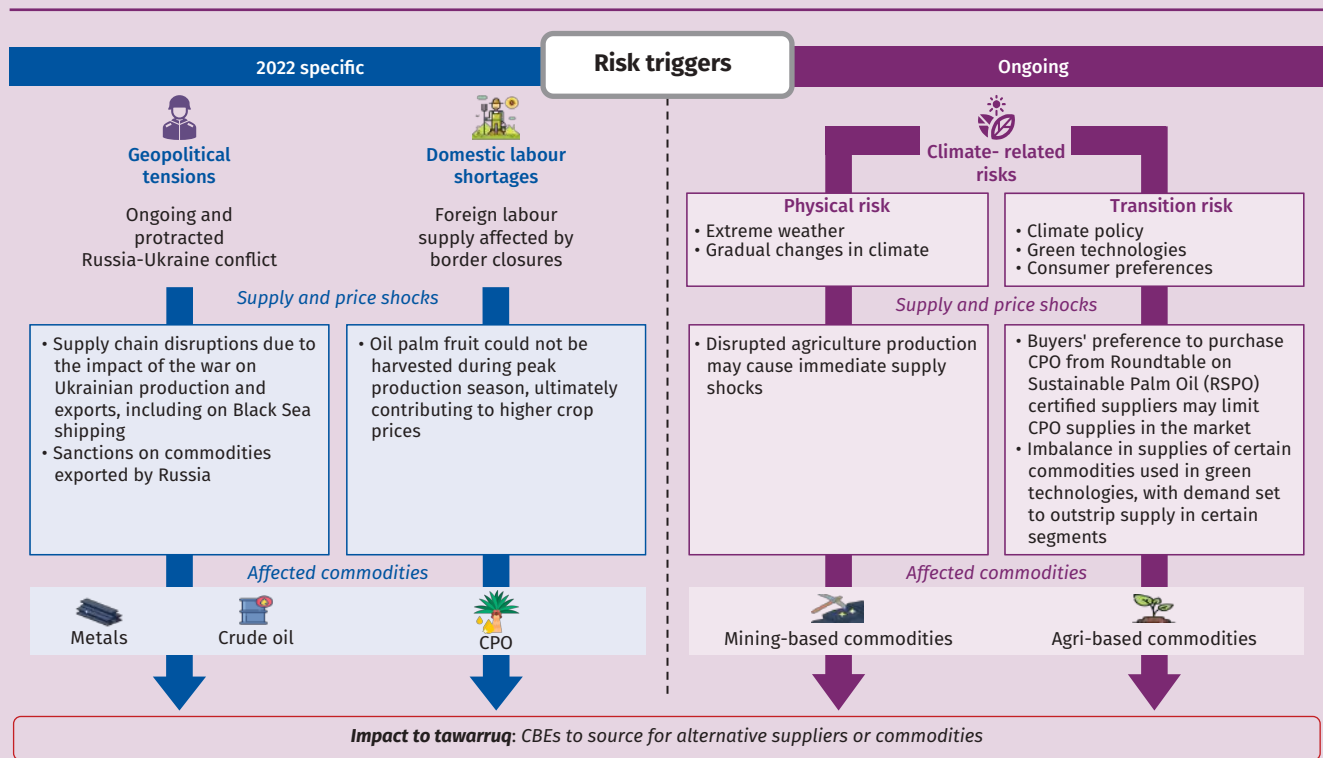
## Key Vulnerabilities Observed in Commodity Markets and Their Transmission to *Tawarruq* Transactions

The year 2022 saw increased volatility in commodity markets. Ongoing geopolitical tensions, particularly the military conflict in Ukraine and the subsequent imposition of sanctions on Russia, have affected the supply of metals such as aluminium and nickel. Meanwhile, domestic CPO production was also affected by disruptions in harvesting activity due to prolonged labour shortages during the year.<sup>5</sup> These developments led to significant volatility in the global commodity markets which saw global commodity prices reaching record highs before moderating since the third quarter of 2022.<sup>6</sup>

While the impact of supply disruptions on the commodity markets have been manageable thus far, risks of a further worsening in supply disruptions remain should geopolitical tensions intensify. Over the medium to longer term, physical and transition risks from climate change impacts will also have an important bearing on the outlook for commodity markets.

The volatility in global commodity prices affect *tawarruq* transactions in a number of ways (Diagram 4).

**Diagram 4: Key Vulnerabilities in the Global and Domestic Commodity Markets and Impact on *Tawarruq* Transactions**



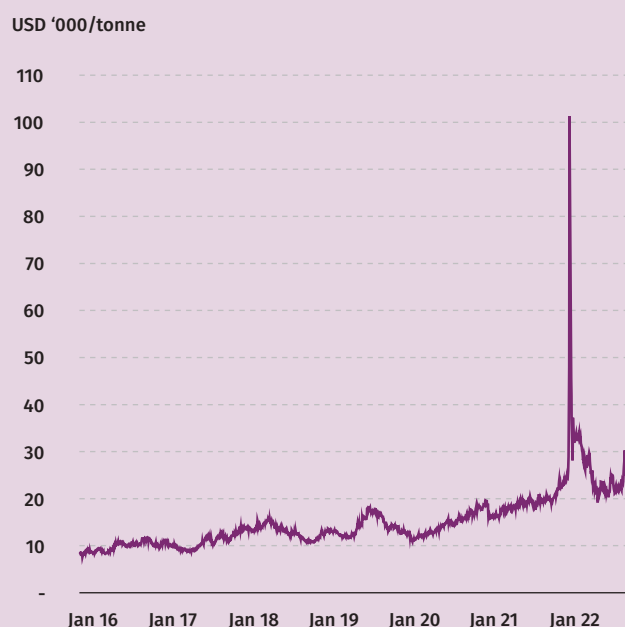
<sup>5</sup> Source: BNM Q2 2022 Quarterly Bulletin

<sup>6</sup> Source: World Bank

The imposition of sanctions on Russia resulted in extreme volatility in nickel prices in early 2022 as Russia is the producer of 17% of the world's top-grade nickel. On 8 March 2022, nickel futures prices surged by an unprecedented 250% in two days to trade above USD100,000 a tonne (Diagram 5). This caused severe mark-to-market losses for counterparties with short positions in futures contracts on the London Metal Exchange (LME). Consequently, LME had to suspend nickel trading to restore order and enable settlement due on transactions.<sup>7</sup> As the LME sets the global benchmark price for many metals including nickel, the suspension caused a temporary absence of a global benchmark price for nickel. This in turn halted *tawarruq* transactions based on nickel in Malaysia, although its overall impact was limited given the small share of *tawarruq* transactions based on nickel (RM56.0 billion, 6.1% of total commodities used for *tawarruq* transactions).

In such event, Islamic banks will need to find alternative commodities as substitutes. In an extreme scenario where substitution cannot be made, Islamic banks may not be able to enter into new *tawarruq* transactions, disrupting day-to-day *tawarruq* based banking operations.

**Diagram 5: Extreme Price Volatility in Nickel in 2022, Particularly in March**



Source: Bloomberg

<sup>7</sup> Source: Reuters

## Risk Mitigation to Promote Ecosystem Resilience

The Islamic finance industry has implemented several risk management strategies to manage these risks. For example, Islamic banks have, over the years, taken steps to diversify underlying commodities used in trades. Islamic banks are also using multiple CBEs to execute trades. These risk management strategies are further complemented by additional measures taken by CBEs to contain spillover risks. For instance, CBEs typically lock-in prices with commodity suppliers and hedge against intra-day price movements (Diagram 6). These measures have helped Islamic banks navigate the recent shocks in commodity markets, thus preserving orderly intermediation in the domestic Islamic banking system.

**Diagram 6: Two Lines of Defence: Risk Management and Controls At Islamic Banks and CBEs**



Source: Islamic banks, DFIs and CBEs

## Measures moving forward

At a system wide level, reducing *tawarruq* concentrations through diversification into non-commodity based Shariah contracts will further enhance the resilience of Islamic banking activities to the risk of extreme supply shocks in global commodity markets. The industry is taking concerted efforts to grow alternative Shariah contracts, as evidenced by an encouraging CAGR of 6.2%<sup>8</sup> in such contracts for the past three years. In addition, various product innovations are taking place, albeit to different degrees across Islamic banks. For example, diminishing partnership (*musharakah mutanaqisah*) has been adopted by a number of Islamic banks as an alternative Shariah contract to facilitate the financing of both completed and under construction properties. Investment account products based on agency contract (*wakalah*) and profit and loss sharing contract (*mudarabah*) are also gaining traction as alternatives to *tawarruq* based deposits. The industry is also advancing initiatives to explore *wakalah* as the Shariah contract for interbank placements between Islamic banks. Moving forward, these innovations are expected to continue to gain traction and further reduce the concentration in *tawarruq*.

<sup>8</sup> Includes only financing activities based on alternative Shariah contracts

## Recent Market and Regulatory Developments in the Digital Asset Space

Recent years have seen global interest in digital assets<sup>1</sup> grow significantly. The digital asset market has also been characterised by high risks associated with significant volatility. After sustained increases since June 2020, the market capitalisation of digital assets peaked at USD3.1 trillion in November 2021. This trend has reversed since then amid geopolitical uncertainties, rising interest rates and inflationary pressures. By December 2022, market capitalisation of digital assets stood at USD830 billion, down 73% from its peak.<sup>2</sup> The reversal of crypto's rise – termed as the 'crypto winter' – has been further exacerbated by high profile failures, including that of the TerraUSD stablecoin and the collapse of FTX, one of the largest digital asset exchanges, which led to a broader decline in confidence and reignited concerns over risks associated with digital assets.

Spillovers from crypto's recent reversal have had little impact on Malaysia's financial system. The digital asset market in Malaysia remains small relative to the domestic financial market, with limited linkages between the two. The cumulative net deposit outflow from banks to the four regulated domestic digital asset exchanges represents only 0.6% of the total banking system deposits for individuals as at end-December 2022. Interest by banks to engage in digital asset activities also remains mostly at an exploratory stage. Growing linkages could however increase financial stability risks.

An increasing involvement of banks in digital asset activities would strengthen such linkages. Banks' involvement in the digital asset space can take a variety of forms, including investing in digital assets, offering a range of digital asset-related services such as custody, trading and asset tokenisation, or lending against digital assets as collateral. These activities create channels through which risks can be transmitted from digital asset markets to the broader financial system.

Potential financial stability concerns stem from several sources. Digital assets are considered an emerging asset class, with their performance during stress periods yet to be fully tested. Many digital assets are characterised by a high degree of volatility and are difficult to liquidate, exposing banks to considerable market and liquidity risks. Digital assets also rely heavily on relatively new technology and involve unregulated players in the ecosystem. These may result in heightened and more pronounced operational and legal risks than that typically associated with traditional banking products and business models.

With these considerations in mind, the Basel Committee on Banking Supervision (BCBS) has clarified the prudential treatment of cryptoasset exposures<sup>3</sup> of banks under the Basel standards on capital and liquidity (Diagram 1), aimed at preserving financial stability outcomes from banks' involvement in digital asset activities. The standards apply the 'same risk, same activity, same treatment' principle, where the same capital and liquidity requirements are applied on exposures and activities that serve the same economic functions and carry the same risks, regardless of the underlying technology. In addition, the standards also account for specific risks associated with the unique characteristics of digital assets which are not seen in traditional assets.

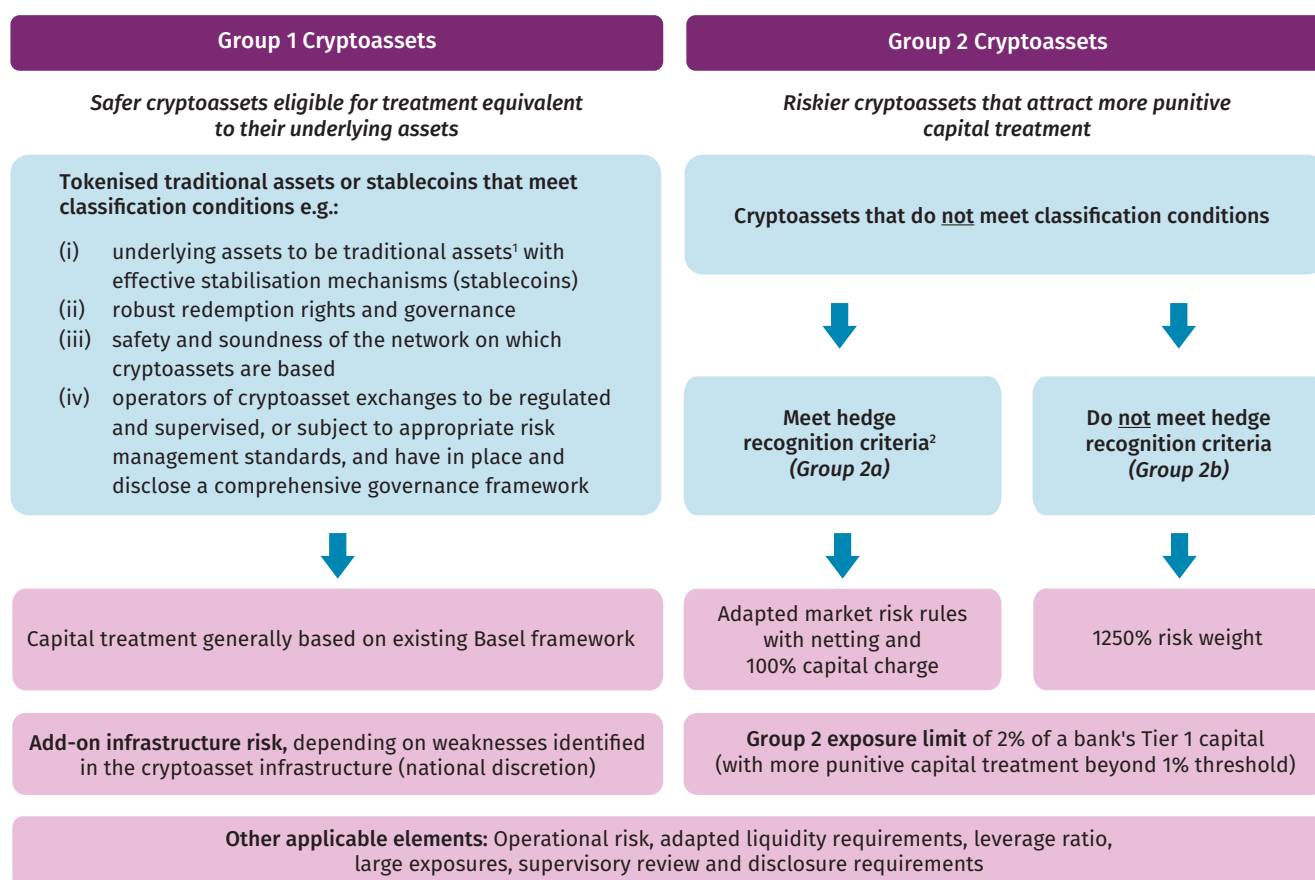
The publication of this global standard will inform the Bank's work towards strengthening the regulatory framework to account for emerging risks in this area. Given the cross-border nature and implications of digital asset activities, consistency with global standards will be an important consideration. The Bank will also continue to coordinate closely with the Securities Commission Malaysia in monitoring developments surrounding digital asset-related activities in Malaysia, and balancing the risks and opportunities associated with such activities in progressing a more vibrant digital financial services landscape as envisaged in the Financial Sector Blueprint.

<sup>1</sup> For the purposes of this article, the terms 'digital assets' and 'cryptoassets' are used interchangeably. They refer broadly to digital representations of value that depend primarily on cryptography and distributed ledger or similar technology. Examples include stablecoins and unbacked digital assets.

<sup>2</sup> Source: CoinGecko.

<sup>3</sup> <https://www.bis.org/bcbps/publ/d545.pdf>

Diagram 1: Summary of BCBS Standard on the Prudential Treatment of Cryptoasset Exposures



Given the rapid pace of market developments, the Basel Committee will also issue additional refinements and clarification over time. This includes addressing issues such as the risk posed by cryptoassets that use permissionless blockchains and the calibration of Group 2 exposure limit.

■ Qualifying criteria ■ Prudential treatment

<sup>1</sup> E.g., equities, bonds and commodities.

<sup>2</sup> These include various thresholds relating to the market capitalisation, trading volume and price observations for cryptoassets to meet.

Source: Basel Committee on Banking Supervision (BCBS), summarised by Bank Negara Malaysia

## THE INSURANCE AND TAKAFUL SECTOR

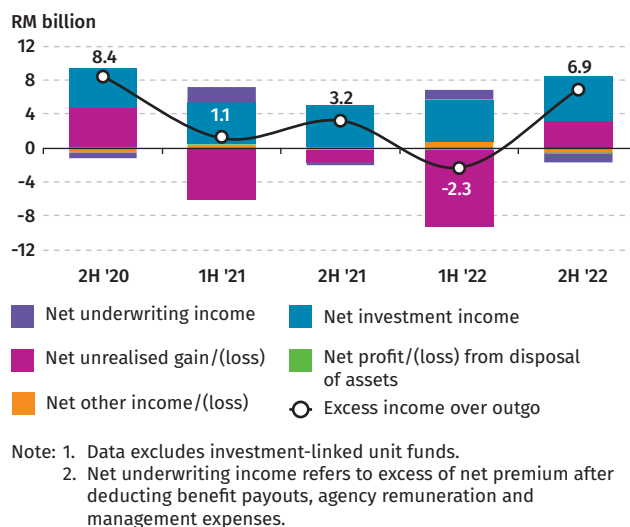
### Profitability of insurance and takaful funds recovered on the back of improved investment performance

In the second half of 2022, overall profitability of insurance and takaful funds improved compared to earlier in the year due to better investment returns. Life insurance and family takaful funds recorded higher net unrealised gains from investments as bond yields fell and equity markets improved, particularly towards the end of the year, resulting in positive excess income over outgo (Chart 2.21). However, for the year as a whole, profitability of life insurance and family takaful funds remained below pre-pandemic levels, reflecting the volatile financial market conditions, especially in the first half of the year.

Underwriting performance was adversely affected by an increase in medical payouts (2H 2022: RM4.3 billion; 1H 2022: RM3.5 billion; 2020-2021 half-yearly average: RM2.9 billion). This was mainly driven by higher claims associated with both necessary and elective medical procedures which were postponed during the pandemic, as well as medical inflation. Going forward, medical payouts are expected to rise further in line with the cost of medical treatments and normalisation of claims patterns to its long-term trends. The impact of medical inflation on insurers and takaful operators (ITOs) is expected to be manageable as premiums and contributions for medical products are reviewed periodically to take into account emerging claims experience. This helps to align the price of insurance and takaful coverage with the cost of providing such coverage.<sup>7</sup> Nonetheless, ongoing efforts from various stakeholders to address medical inflation will remain important to preserve access to affordable medical insurance and takaful coverage. This includes measures to promote greater cost transparency, advocate greater oversight of medical treatment costs, and improve the design of product and payment options to better suit consumer needs and promote responsible behaviours.

<sup>7</sup> Refer to the box article on 'Evaluating the Impact of Medical Repricing Deferrals on Life Insurers and Family Takaful Operators' in the BNM Financial Stability Review for First Half 2021 for further details.

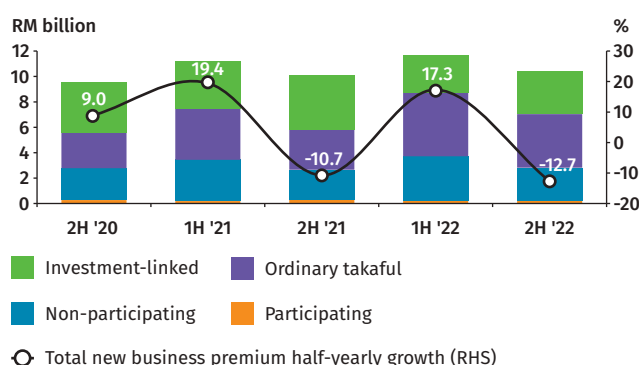
Chart 2.21: Life Insurance and Family Takaful Fund – Composition of Income and Outgo



Source: Bank Negara Malaysia

The decline in underwriting income has also been on account of new business premiums declining. This was consistent with general seasonal trends (Chart 2.22) with the exception of Mortgage Reducing Term Takaful products which continued to trend upwards on the back of improving property market activity. Investment-linked new business premiums also grew by 12.5% in the second half of the year (2H 2015-2019 average: 17.4%), reflecting the intensification of campaign rollouts by ITOs in the latter half of the year to achieve year-end sales targets.

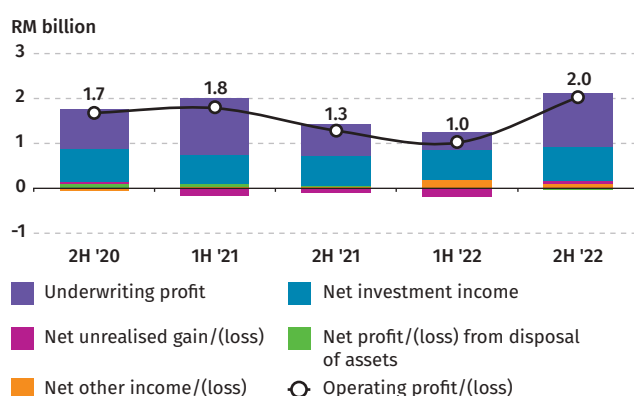
Chart 2.22: Life Insurance and Family Takaful Sector – New Business Premium Growth and Product Composition



Source: Bank Negara Malaysia

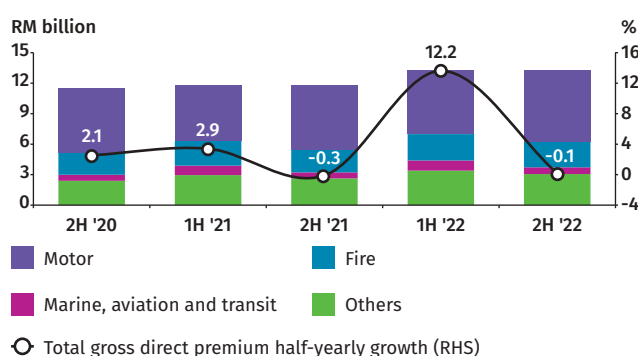
For general insurance and takaful funds, operating profit in the second half of 2022 strengthened (Chart 2.23), driven by stronger underwriting and investment performance. The higher underwriting profits mainly reflected the absence of large claims recorded in the first half of 2022 in the aftermath of severe floods at the end of 2021. Meanwhile, gross direct premiums continued to be supported by the continued growth in motor premiums amid high vehicle delivery for orders made during the sales tax exemption period.<sup>8</sup> The fire segment also recorded a smaller decline in premiums in the second half of 2022 compared to the previous year with the recovery in property market activities (Chart 2.24). Given the significant contribution to underwriting performance from these two major lines of business, the ongoing gradual liberalisation of applicable insurance tariffs will have an important bearing on future performance.

**Chart 2.23: General Insurance and Takaful Fund – Composition of Operating Profits**



Source: Bank Negara Malaysia

**Chart 2.24: General Insurance and Takaful Sector – Gross Direct Premium Growth and Product Composition**



Source: Bank Negara Malaysia

In the reinsurance market, recent renewals indicate signs of hardening. ITOs reported increased reinsurance rates on renewal of cover, higher reinstatement cost for reinsurance coverage when limits are exhausted, and higher deductible thresholds that apply for claims, especially for excess of loss treaties.<sup>9</sup> More onerous clauses such as loss participation clauses which require ITOs to partially contribute to reinsured losses, have also been introduced. In addition, ceding commissions paid to ITOs have been on a reducing trend. The hardening in the reinsurance market has been driven mainly by large losses from natural catastrophes in recent years leading to reduced global capacity. ITOs expect the hardening cycle to persist in the near term. While this could place upward pressure on direct premium rates, particularly affecting costs borne by businesses for commercial insurance, steps being taken by ITOs to optimise their reinsurance programmes would help moderate the impact on business costs. Any impact is further mitigated by the relatively low contribution of insurance costs to total business costs. The Bank continues to monitor the impact of developments in this area on end-consumer premiums and the adequacy of reinsurance arrangements put in place by ITOs to protect against a more volatile claims environment.

To date, most (80%) ITOs have entered the next phase of liberalisation of motor and fire tariffs,<sup>10</sup> having met the requisite prudential and market conduct conditions and committed to plans to digitalise their motor claims process. ITOs have been observed to use the pricing flexibility accorded by the liberalisation to better capture the underlying risks within their product segments and improve product offerings with new and more innovative design features to preserve affordability amid increasing competition (e.g., pay as you drive products). With the resumption of travel activities and normalisation of motor claims, motor premium rates which were lowered during earlier periods when movement control orders were in place have also started to normalise in line with claims experience. Overall, these developments have had a relatively modest impact, with motor rates staying within a +/- 15% band from the previous tariff rates,

<sup>9</sup> Refers to types of reinsurance contracts/retakaful certificates that protect ITOs from particularly large or catastrophic losses, where re-ITOs agree to cover a portion of losses that exceed a certain threshold.

<sup>10</sup> Greater pricing flexibilities for motor and fire products will be accorded to ITOs that meet the Bank's expectations and requirements on reforms to the motor claims ecosystem.

<sup>8</sup> The registration deadline with the Road Transport Department (JPJ) was extended to 31 March 2023, for buyers who booked their cars by 30 June 2022 under the sales tax exemption period.

while fire tariff rates have been reduced by 15% for the more profitable segments with greater flexibility provided to match the underlying risk. Adjustments to premiums and contribution rates have also continued to take place in a gradual manner.

Looking ahead, ITOs will remain susceptible to heightened financial market volatility given their sizeable bond and equity investments. The upwards reversion of medical claims to their long-term trend will also have some impact on profitability in 2023, as mobility continues to normalise. Over the longer term, the impact of COVID-19 variants on premium growth and profitability remains to be seen, as higher awareness can lead to both higher demand for insurance and higher related claims. The ongoing phased liberalisation of motor and fire tariffs may weigh on the performance of some general ITOs in the short-term given higher competition for market share. However, in the longer run, premium adjustments that are commensurate with the risk of individual segments will support risk-based pricing consistent with a more sustainable business model and aligned with efforts to encourage safe driving. This in turn is necessary to preserve the continued provision of protection coverage by the private sector. The Bank will continue to monitor developments in rate adjustments to ensure that any adjustments (upwards or downwards) do not create market dislocations that could affect access to coverage or disproportionately impact segments of the insured population. In addition, the increasing severity and frequency of flood-related claims<sup>11</sup> underscores the susceptibility of general ITOs' profitability to climate-related risks. The demand for insurance protection is anticipated to rise moving forward as climate events continue to manifest. Hence a more robust approach to managing climate-related risks will be crucial, along with strong capital and sound reinsurance arrangements, to ensure that ITOs are adequately resilient to potential downside risks.

Another notable development in the industry is the coming into force of MFRS 17 Insurance Contracts on 1 January 2023.<sup>12</sup> In general, the new accounting standard does not significantly affect short-term insurance/takaful contracts as the effect of the

new measurement model is similar to that used in MFRS 4. However, for long-term insurance or takaful contracts, more consistent applications of accounting treatments under MFRS 17 along with the explicit recognition of unearned income through a "contractual service margin" could more fundamentally affect the measurement and presentation of insurance contracts in financial statements by life and family ITOs. Based on a survey conducted by the Bank, all ITO respondents expect shareholders' equity positions to still remain positive under the new accounting standard. The degree to which the financial results and operations are affected, however, will vary across companies, depending on their business mix, and the assumptions and methods used to derive liabilities under the new measurement approach.<sup>13</sup> For example, some life and family ITOs expect to report higher shareholders' equity under the new standard as higher liabilities arising from the recognition of contractual service margins are offset by other changes in assumptions and methodology.

The implementation of MFRS 17 will not materially affect regulatory capital requirements<sup>14</sup> as the Bank's Risk-Based Capital Framework (RBCF), including the basis for valuation of insurance and takaful liabilities, remains applicable for ITOs. The Bank's current basis for valuation of insurance and takaful liabilities under the RBCF differs from MFRS 17 but remains prudent as it requires ITOs to consistently provision for the risk of adverse deviation, use risk-free rates to discount guaranteed cashflows, and adopt prudent valuation methodologies.<sup>15</sup> Nonetheless, the Bank is conducting a review of the existing RBCF, taking into account market and technical developments since it was first issued in 2009 (for insurers) and 2012 (for takaful operators). In light of changes in the financial reporting requirements and the ongoing review of the RBCF, Perbadanan Insurans Deposit Malaysia (PIDM) is also currently consulting on an approach to simplify the Differential Levy Systems Frameworks for insurance companies and takaful operators to reflect these changes.<sup>16</sup>

<sup>11</sup> Total losses from the 2021 flood event stood at RM2.2 billion, approximately seven times higher than the largest recorded losses in the past decade (2017: RM 323.4 million).

<sup>12</sup> MFRS 17 Insurance Contracts contains more comprehensive accounting treatments for insurance and takaful contracts and will supersede MFRS 4 Insurance Contracts. The application of MFRS 17 is expected to provide more relevant information on the impact of insurance contracts on an entity's financial position and performance.

<sup>13</sup> The MFRS 17 introduces a measurement model which is applied to all insurance contracts, consisting of fulfilment cash flows (discounted present value of cashflows adjusted for non-financial risk) and the contractual service margins (the unearned profit from the contract).

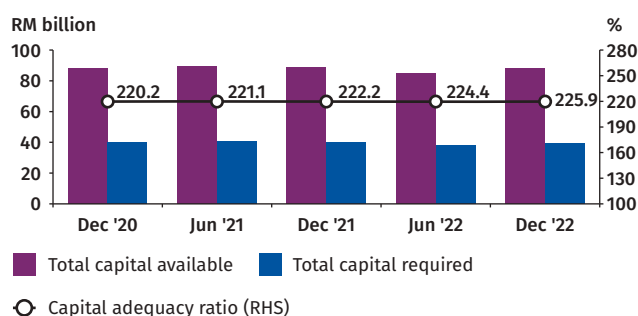
<sup>14</sup> Except for marginal impact from the reclassification of financial assets.

<sup>15</sup> For example, setting up of sterling reserves for non-unit liabilities of investment-linked business.

<sup>16</sup> For further details, please refer to the PIDM Consultation Paper on the Proposed Revised Differential Levy Systems Frameworks (<https://www.pidm.gov.my/pidm2022/media/downloads/2023/CP/Consultation-Paper-on-DLS-Frameworks.pdf>).

Moving ahead, the insurance and takaful sector is expected to remain resilient, supported by strong capital and liquidity positions. The aggregate industry capital adequacy ratio of 226% remains well above the regulatory minimum of 130% (Chart 2.25). Capital buffers in excess of regulatory requirements stood at RM37.5 billion. Macro stress tests conducted by the Bank also affirm that under adverse scenarios, most insurers would remain resilient with sufficient capital buffers (refer to the section on 'Assessing the Resilience of Financial Institutions' for more details).

**Chart 2.25: Insurance and Takaful Sector – Capital Adequacy Ratio**



Source: Bank Negara Malaysia

## ASSESSING THE RESILIENCE OF FINANCIAL INSTITUTIONS

Every year, the Bank conducts multi-year, top-down macro and micro solvency stress test exercises to assess the possible impact of protracted financial and macroeconomic stresses on individual banks and insurers, as well as on the broader financial system.

The latest top-down macro solvency stress test was conducted in early 2023 and covers a three-year horizon up to end-2025. The exercise is premised upon two adverse scenarios to evaluate the resilience of financial institutions to distinct paths of contractions or slowdown in economic growth. The scenarios do not reflect the Bank's actual economic forecasts. Rather, they are designed to assess the ability of financial institutions to endure severe shocks.

The first adverse scenario (AS1) assesses the resilience of financial institutions to a temporary but severe disruption in the operating environment. AS1 assumes that the Malaysian economy contracts sharply in 2023 by a magnitude larger than that seen during the COVID-19 pandemic. Under this scenario, a sharp contraction in global growth and heightened geopolitical tensions are expected to adversely affect Malaysia's export and production levels. Most businesses will rationalise or downsize operations given their limited cash buffers and an absence of policy support to mitigate the sharp rise in costs. This subsequently leads to large job losses, with the unemployment rate peaking at 5.4%. Credit conditions are also tighter as financial institutions become increasingly risk averse in 2023. GDP growth subsequently makes a strong V-shaped recovery in 2024 and normalises thereafter. This is supported by the easing of global monetary policy as inflation falls and global economic recovery gains momentum.

The second adverse scenario (AS2) assumes a less severe but more prolonged economic contraction or slowdown than in AS1. It aims to assess the capacity of financial institutions to endure a difficult operating environment over a more extended period of time. In this scenario, GDP records negative growth in 2023 and 2024, before recovering mildly in 2025. Unemployment rate peaks at 6.0% in 2024 and remains high throughout the stress test horizon with severe scarring effects in the labour market from the weak economic conditions.

In the latest stress tests, heightened global risk aversion is assumed under both scenarios amid uncertain global growth prospects. This results in large and volatile portfolio outflows from emerging market economies. Persistent inflation and monetary policy tightening in advanced economies also lead to tighter global financial conditions in both scenarios, although the monetary policy stance under AS2 is less restrictive than in AS1. Bond yields rise further, with the rise more prolonged under AS2 due to persistently tight global financial conditions. The ringgit trends weaker, to levels beyond historical lows against the US dollar in both scenarios, with sharper adjustments in 2023 under AS1. The FBM KLCI experiences a sharper decline and subsequently a higher rebound under AS1, while the recovery remains sluggish under AS2 amid a tepid economic recovery and prolonged policy uncertainty.

Refinements made to selected key assumptions in the latest stress test are outlined in Table 2.1.<sup>17</sup>

In some instances, the stress test prioritises conservatism over strict coherence with the broader macroeconomic scenario to capture potential additional downside risk impacts. For example, the stress test assumes the OPR being on a downward trend,<sup>18</sup> which adversely impacts the profits of banks. However, borrowing costs for businesses are assumed to be higher due to rising bond yields and a depreciating ringgit. It also assumes households' borrowing costs are not reduced despite the lower OPR assumptions. Where relevant, judgemental overlays are also applied to selected large non-SMEs to account for company-specific developments that are not captured within the model's parameters for assessing potential impairments. For banks' credit exposures, non-SME borrowers that fail the simulation are assumed to trigger cross-defaults across their entire business group, even though other subsidiaries may be financially strong. Defaulting household borrowers are also assumed to cross-default on all their

<sup>17</sup> For further details on the stress test methodology, please refer to the boxes on 'Key Features of the Enhanced Macro Solvency Simulation for Banks', 'Forecasting Business Impairments: Two-pronged Approach', and 'Forecasting Households' Time to Default' in the BNM Financial Stability Review for First Half 2020.

<sup>18</sup> OPR is assumed to be on a downward trend to be coherent with the weakness in economic growth and elevated unemployment, as well as declining inflationary pressure. Separately, the Bank had also conducted an earlier sensitivity analysis to assess banks' ability to withstand higher credit losses from a sharp rise in OPR. Results affirm that the banking system remains resilient under such an assumption. Refer to the Chapter on 'Financial Institution Soundness and Resilience - The Banking Sector' in the BNM Financial Stability Review for First Half 2022 for further details.

loans. Loans of defaulted borrowers are assumed to remain impaired throughout the stress horizon even if improvements in debt-servicing capacity are subsequently observed. Notably, the stress test continues to assume no further loan repayment assistance or policy support measures<sup>19</sup> are made available to households and businesses throughout the stress test horizon. The current exercise also incorporates loss and exposure estimations from large DBGs<sup>20</sup> overseas subsidiaries and branches in four jurisdictions. The combination of augmented and additional stress assumptions, on top of the higher impairment ratio at the start of the stress test horizon capturing COVID-19 impacts (MST 2023: 2.1%; MST 2022: 1.4%),<sup>21</sup> led to higher projected impairments under MST 2023 compared to the previous exercise.

## Stress test results reaffirm the resilience of financial institutions even under severe simulated shocks

Results indicate that by the end of 2025, overall impairments are projected to increase to 6.9% and 7.7% (MST 2022: 6.1% and 6.6%) of total banking system loans under AS1 and AS2, respectively, driven largely by households (Chart 2.26). Most (65%) household borrowers projected to be at-risk of defaulting under both AS1 and AS2 are borrowers earning below RM5,000 per month given their thin financial buffers (Chart 2.27). Nevertheless, these borrowers account for a lower share (42%) of new

**Table 2.1: Macro Stress Test – Key Changes to Assumptions in Banking System Stress Test**

Section	Key Assumption Change
Credit risk models	<ul style="list-style-type: none"> <li>Maturing SME loans with bullet repayment terms assumed to default<sup>(i)</sup></li> <li>Incorporation of additional shocks from tightening financial conditions<sup>(ii)</sup> to non-SME business borrowers</li> </ul>
Credit costs	<ul style="list-style-type: none"> <li>Estimated based on the highest coverage ratios<sup>(iii)</sup> in 2021 and 2022, and assumed constant during stress test horizon</li> </ul>
FX exposures	<ul style="list-style-type: none"> <li>Incorporation of gains or losses from FX exposures</li> </ul>
Capital and risk-weighted assets (RWA)	<ul style="list-style-type: none"> <li>Recognition of higher RWAs arising from higher FCY exposures translated into ringgit</li> </ul>
Overseas operations	<ul style="list-style-type: none"> <li>Incorporation of losses from major overseas branches and subsidiaries of large DBGs with significant overseas operations</li> </ul>

**Note:**

<sup>(i)</sup> SMEs in all sectors are assumed to face similar difficulty repaying bullet loans under AS1 and AS2. Previous Macro Stress Test 2H 2021 assumed only SMEs in vulnerable sectors that were more affected by the pandemic had difficulty repaying bullet loans.

<sup>(ii)</sup> Higher interest payments for foreign currency borrowings and higher refinancing costs for maturing corporate bonds.

<sup>(iii)</sup> Coverage ratios are defined as the ratio of provisions to loans of the same stage defined under MFRS 9. For example, Stage 3 coverage ratio is the ratio of Stage 3 provisions to Stage 3 loans.

Source: Bank Negara Malaysia

<sup>19</sup> These may include flexibilities to withdraw from retirement savings, wage subsidy programmes, or cash transfers from the Government.

<sup>20</sup> The stress test covers DBGs with significant overseas operations.

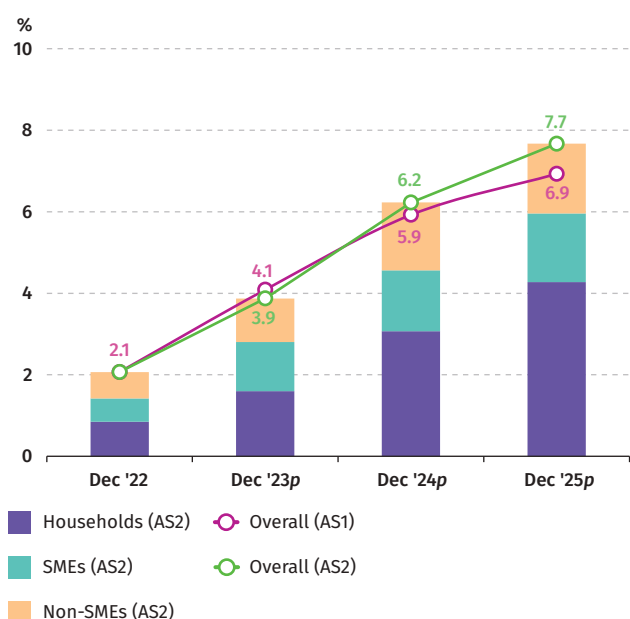
<sup>21</sup> The figures refer to the actual impairment ratios that were used as the baseline for impairment ratio projections under both stress test exercises. MST 2023 refers to the current macro solvency stress test exercise while MST 2022 refers to the exercise which was published in the BNM Financial Stability Review for the Second Half 2021. The baseline impairment ratio for MST 2023 includes losses from overseas operations of selected domestic banking groups. Excluding the overseas operations losses, the MST 2023 baseline impairment ratio is 1.8%.

impairments by value, reflective of their smaller loan sizes relative to higher income groups. Borrowers earning between RM5,000 and RM10,000 monthly would also be susceptible to distress under severe economic shocks, forming 29% of total at-risk borrowers and a higher share of 43% of new impaired debt by value. For businesses, non-SMEs make up more than half of total business impairments,

commensurate with their larger outstanding loan sizes and the conservative cross-default assumption. SME impairments are notably higher under AS2 (1.7%; AS1: 1.4% of total banking system loans) as their relatively smaller cash buffers are more severely eroded under a protracted economic downturn.

Credit risk continues to drive stress test losses to the banking system. Under AS1 and AS2, cumulative

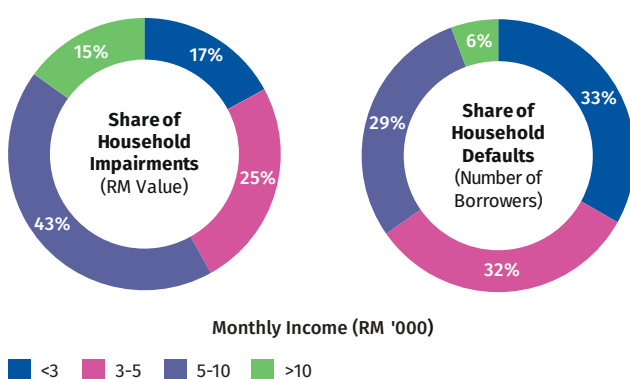
**Chart 2.26: Macro Stress Test: Banking System – Impaired Loans Ratio Under Adverse Scenarios 1 and 2**



Note: Impairment figures are inclusive of exposures from selected DBGs' overseas operations.

Source: Bank Negara Malaysia

**Chart 2.27: Macro Stress Test: Household Sector – Impairment Profile Under Adverse Scenario 2**



Note: Figures may not add up due to rounding.

Source: Bank Negara Malaysia

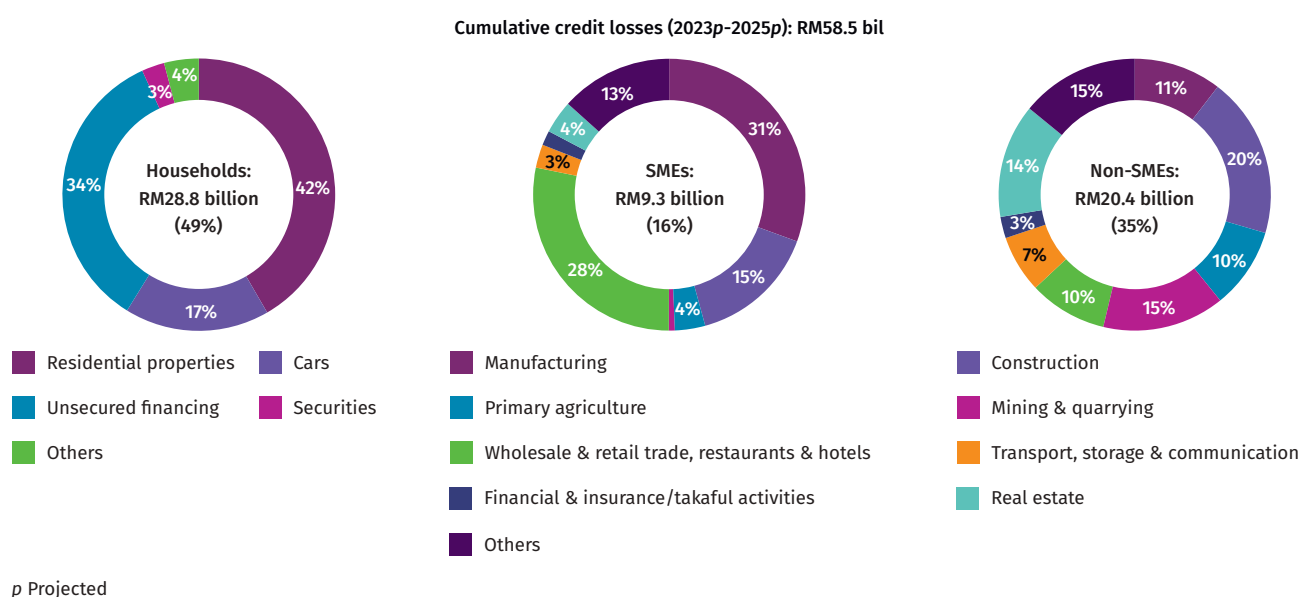
credit costs over the 3-year stress horizon are projected to amount to RM53.1 billion and RM58.5 billion, respectively (or 58% and 63% of total losses) (Chart 2.28).<sup>22</sup> About 20% of the cumulative credit costs originate from banks' overseas operations, the bulk of which were losses from defaults of large non-SMEs. Meanwhile, the projected increase in yields is expected to cause sizeable revaluation losses on bonds held in the fair value through other comprehensive income portfolio (FVOCI) (RM36 billion or 39% and RM33 billion or 36% of total losses under AS1 and AS2, respectively), directly reducing banks' capital buffers (Chart 2.29).

Overall banking system profitability may decline by 60% in the first year of stress as a result of higher credit costs and trading book losses. Losses from FX movements remain limited, comprising 0.9% and 0.5% of total losses under AS1 and AS2, respectively. A subsequent recovery in net interest income would improve profits slightly. While expected losses from overseas operations remain sizable for large DBGs, their impact on DBGs is substantially mitigated by healthy capital buffers maintained by the respective overseas entities.

The aggregate capital ratios of the banking system will remain comfortably above the regulatory minima (Chart 2.30). The vast majority (over 80%) of banks would be able to maintain capital ratios above their internal capital targets, although 24 out of 54 banks, with a cumulative share of 25% of total banking system assets, would report losses in at least one year throughout the stress horizon. Only two banks, which account for less than 1% of total banking system assets, are projected to breach the minimum regulatory capital requirements under these adverse scenarios. Overall, the results of the stress test affirm that banks can withstand significant macroeconomic and financial shocks and are well-positioned to sustain lending to businesses and households.

<sup>22</sup> In the previous stress test exercise, the projected credit cost over a three-year-horizon stood at RM38.4 billion and RM41.7 billion under AS1 and AS2, respectively. Refer to BNM Financial Stability Review for Second Half 2021 for details.

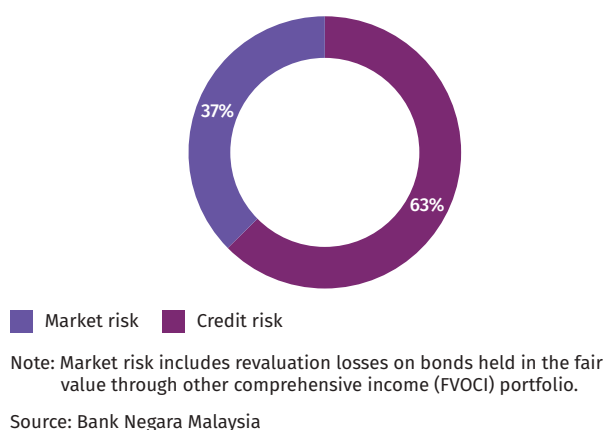
Chart 2.28: Macro Stress Test: Banking System – Drivers of Cumulative Credit Losses Under Adverse Scenario 2



Note: 1. (...) refers to % of overall cumulative credit costs.  
2. Figures may not add up due to rounding.

Source: Bank Negara Malaysia

Chart 2.29: Macro Stress Test: Banking System – Key Loss Drivers Under Adverse Scenario 2

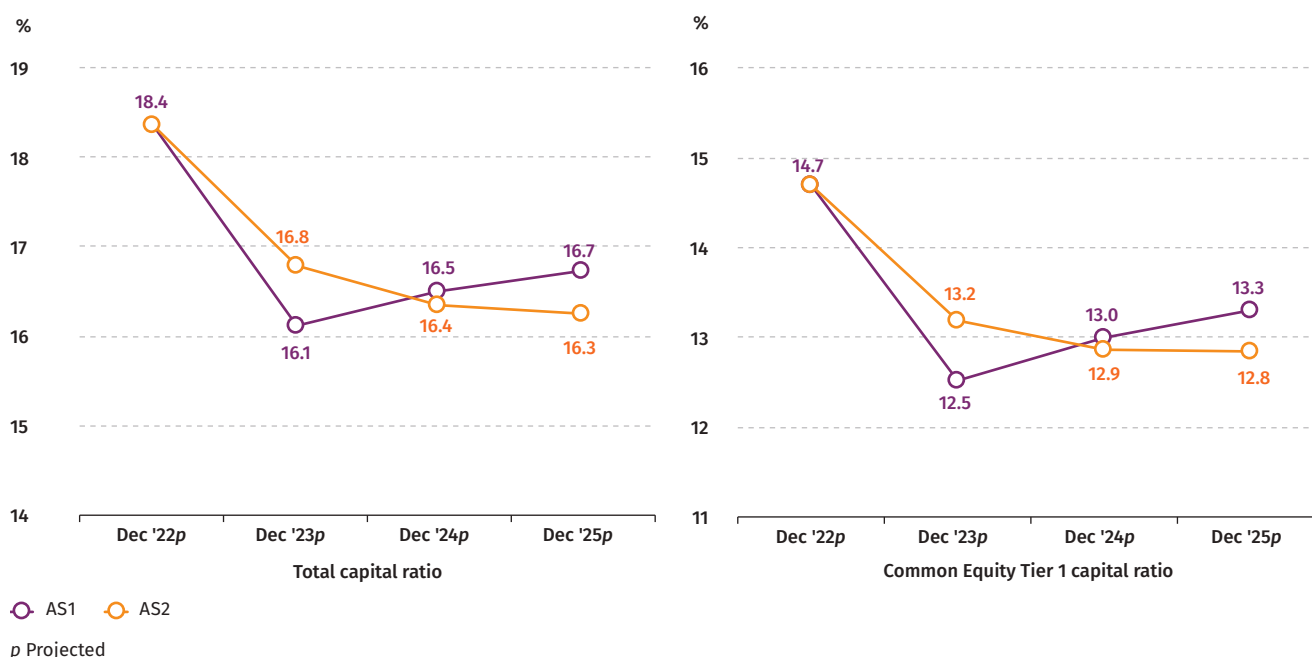


The macro solvency stress test for insurers also adopts identical AS1 and AS2 scenarios. In addition, key insurance-specific assumptions are included, such as (i) increased medical benefit payouts due to medical inflation and more elective procedures as the country moves to endemicity; (ii) conservative assumptions on the growth of life insurance liabilities and premiums; (iii) higher general insurance claims as motor parts become more expensive due to supply disruptions, and occurrence of sizeable flood events; (iv) lower premium rates following intensified competition in the motor and fire segments; and (v) the hardening of the reinsurance market due to lower global reinsurance capacity.

Under both AS1 and AS2, the insurance sector is assessed to maintain aggregate capital adequacy ratio (CAR) above the regulatory minimum (Chart 2.31). Market risk remains the largest loss driver for life insurers (Chart 2.32), with rising bond yields and the weak equity market performance affecting their significant holdings of financial assets. Nonetheless, underwriting income from new business premiums is expected to cushion the impact on CAR. Only one small life insurer, accounting for less than 3% of total life insurance assets, would breach the regulatory minimum post-shock. Meanwhile, general insurers' CAR is projected to be lower particularly under AS2, largely due to revaluation losses on their bond investments, higher claims from the motor and fire segments, and lower premiums amid intensified competition. The macro solvency stress test exercise is also supplemented with an assessment on the ability of insurers to meet short-term liquidity needs under stressed conditions, including higher policy benefit payouts due to surrenders, medical-related payouts and flood claims. The liquidity assessment affirms that insurers have sufficient liquid assets<sup>23</sup> to fulfil these obligations.

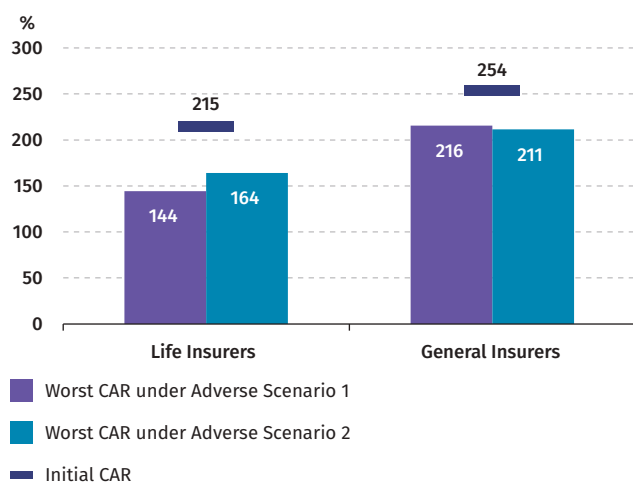
<sup>23</sup> Refers to cash and deposits, and MGS.

**Chart 2.30: Macro Stress Test: Banking System – Capital Ratios Under Adverse Scenarios 1 and 2**



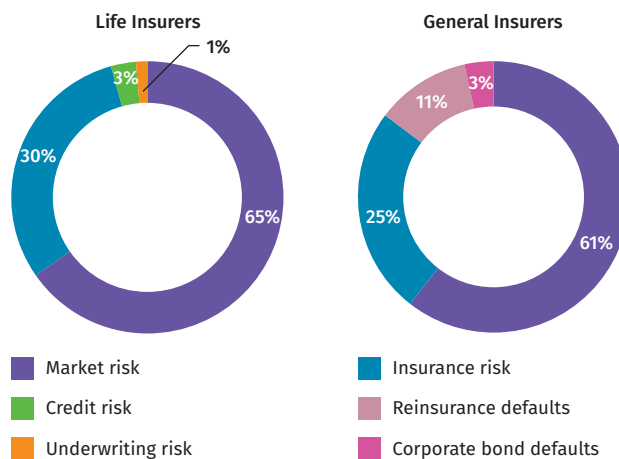
Source: Bank Negara Malaysia

**Chart 2.31: Macro Stress Test: Insurance Sector – Capital Adequacy Ratio (CAR) Under Adverse Scenario 1 and 2**



Source: Bank Negara Malaysia

**Chart 2.32: Macro Stress Test: Insurance Sector – Loss Drivers Under Adverse Scenario 2**



Note: Figures may not add up due to rounding.

Source: Bank Negara Malaysia

It is important to note that the stress tests, by design, use extremely conservative assumptions to assess the resilience of banks and insurers to adverse shocks. Nonetheless, the actual impact of stress scenarios on financial institutions is likely to be less severe, on account of various factors, including:

- Pre-emptive actions by financial institutions to shore up capital buffers through capital retention strategies, new issuances or injections from parent institution(s);
- The strong operational and financial capacity of

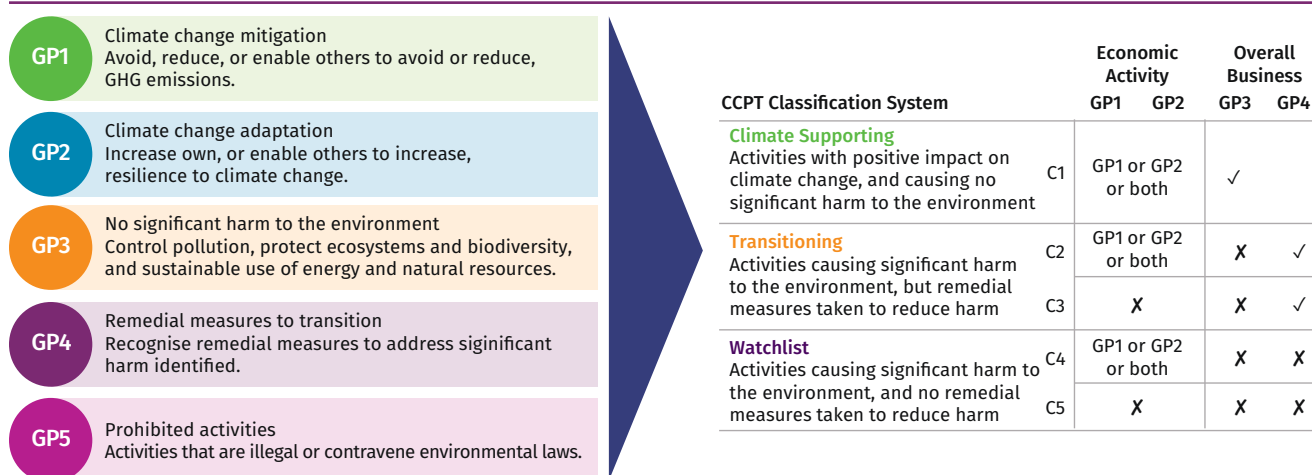
financial institutions to support households and businesses in financial distress before economic scarring occurs;

- Recovery actions for impaired loans would reduce the loss assumption used in this stress test;
- Substantial provisioning buffers built up that would cushion the impact of future credit costs; and
- Policy interventions likely to be taken by the Bank, Government and/or other authorities to alleviate the effects of severe financial and economic shocks.

## Implementation Progress of the Climate Change and Principle-based Taxonomy (CCPT) in the Financial Sector

The CCPT is a framework<sup>1</sup> to facilitate financial institutions in identifying and categorising economic activities that contribute to climate resilience. Beginning July 2022, financial institutions have started submitting half-yearly reports to the Bank on their exposures in line with the CCPT guiding principles and classification system (Diagram 1).

**Diagram 1: CCPT Guiding Principles and Classification System**



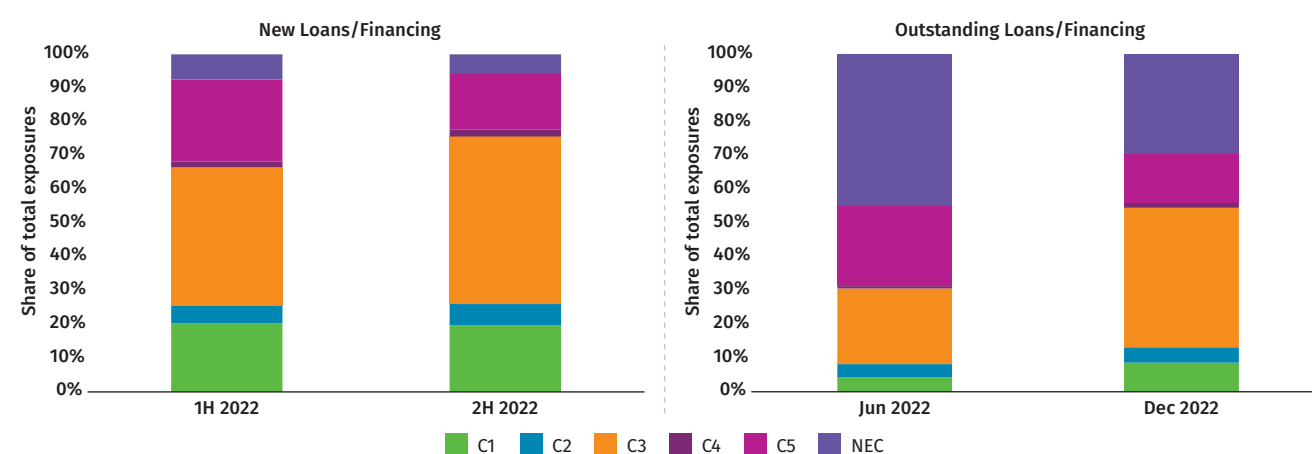
Note: There are five guiding principles (GP) in the CCPT.

Source: Document on Climate Change and Principle-based Taxonomy, 30 April 2021

## Encouraging progress observed in the classification of exposures

Although CCPT reporting is still in its early days, financial institutions are making progress in improving the quality and coverage of reporting. Financial institutions were able to classify 94.5% of total new loans/financing approved in 2H 2022, and 70.5% of outstanding loans/financing as at December 2022, up from 92.5% and 55.0% respectively for the period ending June 2022 (Chart 1). The improvement follows increased efforts by financial institutions to incorporate climate-related factors in the annual credit reviews of their customers.

**Chart 1: CCPT Classification of New and Outstanding Loans/Financing**



Note: Exposures to non-SME and SME segments. NEC refers to 'not elsewhere classified' due to exposures exempted from CCPT reporting and accounts pending review.

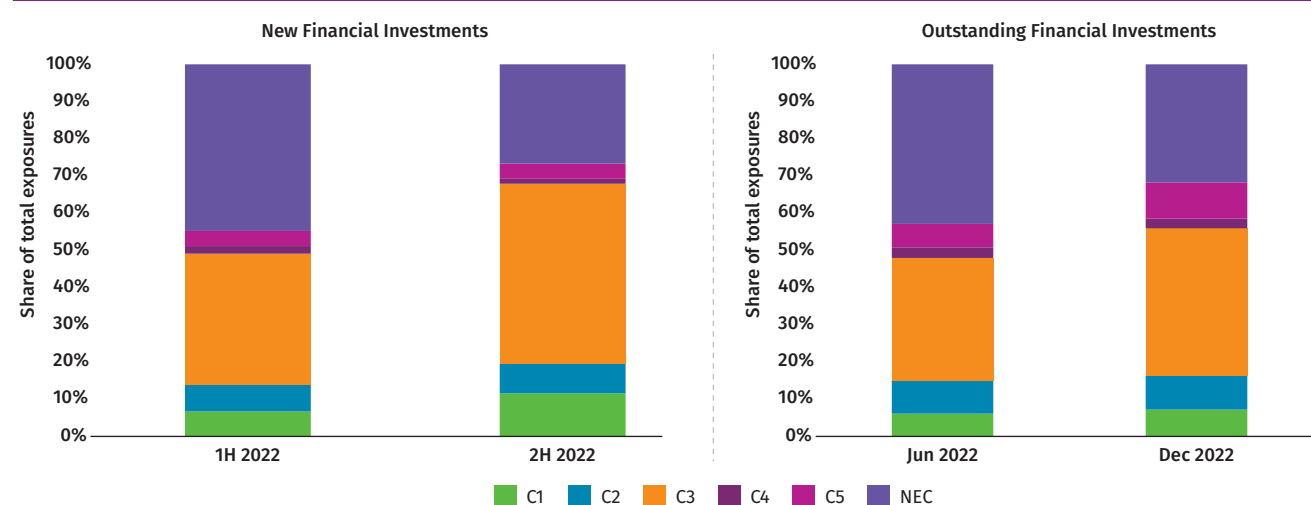
Source: CCPT Reporting, June and December 2022

<sup>1</sup> Refer to the box article titled 'Implementation of the CCPT in the Financial Sector' in the BNM Financial Stability Review Second Half 2021.

In 2H 2022, a higher share of new loans/financing was classified by financial institutions in the climate transitioning categories, namely C2 and C3 (55.9%; 1H 2022: 46.3%). This was also observed for outstanding loans/financing (December 2022: 45.9%; June 2022: 26.3%). The larger share reflects financial institutions' continued support for businesses undertaking initiatives to transition to lower-carbon activities and operations, alongside better visibility into their customers' climate strategies, as engagements with customers in this area continue to improve.

Financial institutions are also demonstrating progress in classifying financial investment<sup>2</sup> exposures. Financial institutions were able to classify 73.3% and 68.3% of new and outstanding investments respectively in 2H 2022, up from 55.2% and 57.1% in 1H 2022 (Chart 2). Financial institutions have cited limited climate-related disclosures made by issuers of financial instruments as a key factor contributing to the challenge in classifying these exposures.

**Chart 2: CCPT Classification of New and Outstanding Financial Investments**



Note: NEC refers to 'not elsewhere classified' due to exposures exempted from CCPT reporting and accounts pending review.

Source: CCPT Reporting, June and December 2022

The reported CCPT classification still reflects considerable variance across financial institutions, in part driven by the quality of data available to financial institutions and differences in the criteria used to assess the CCPT guiding principles. In this regard, the Bank and financial institutions are taking active steps to improve consistency in assessments and address climate-related data gaps. In December 2022, the Joint Committee on Climate Change<sup>3</sup> (JC3) published the Climate Data Catalogue<sup>4</sup> as a starting point to address the critical data needs of the financial sector (Diagram 2). Following this publication, the JC3 will now focus on working with relevant data providers to resolve data accessibility issues, and improve the quality, comparability and consistency of climate-related data from identified data sources. The JC3 is also collaborating with the Value-based Intermediation Community of Practitioners to expand the CCPT use cases through the sector/project-specific use cases covered in the VBIAF<sup>5</sup> Sectoral Guides. These actions to improve the quality of classification for CCPT reporting will continue to be a key priority to mitigate risks of greenwashing.<sup>6</sup>

<sup>2</sup> Includes equities and bonds.

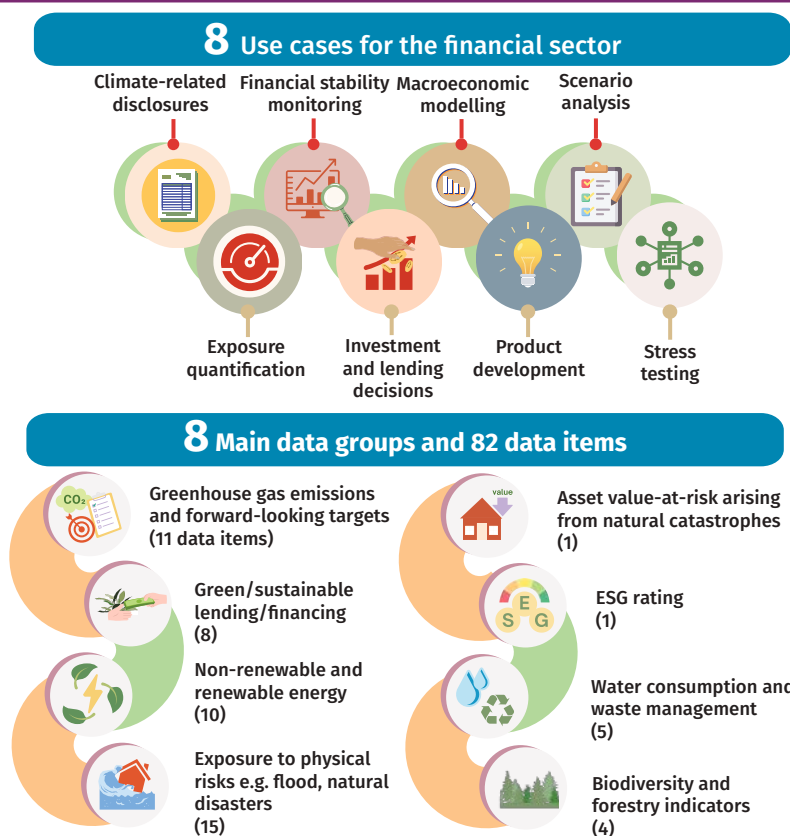
<sup>3</sup> The JC3 is a platform established in September 2019 to pursue collaborative actions for building climate resilience in the financial sector. The JC3's initiatives are undertaken by five sub-committees: Risk Management, Governance and Disclosure, Product and Innovation, Engagement and Capacity Building, and Bridging Data Gaps.

<sup>4</sup> The Climate Data Catalogue serves as a common source of reference on the availability and accessibility of climate and environmental data based on a priority list of financial sector use cases. Refer to Chapter 2.2 titled 'Towards a Greener Financial System' in the BNM Annual Report 2022.

<sup>5</sup> Value-based Intermediation Financing and Investment Impact Assessment Framework.

<sup>6</sup> Greenwashing refers to practices where companies make false or misleading claims about their climate change mitigation and adaptation efforts or overstate extent of their impact.

Diagram 2: Climate Data Catalogue



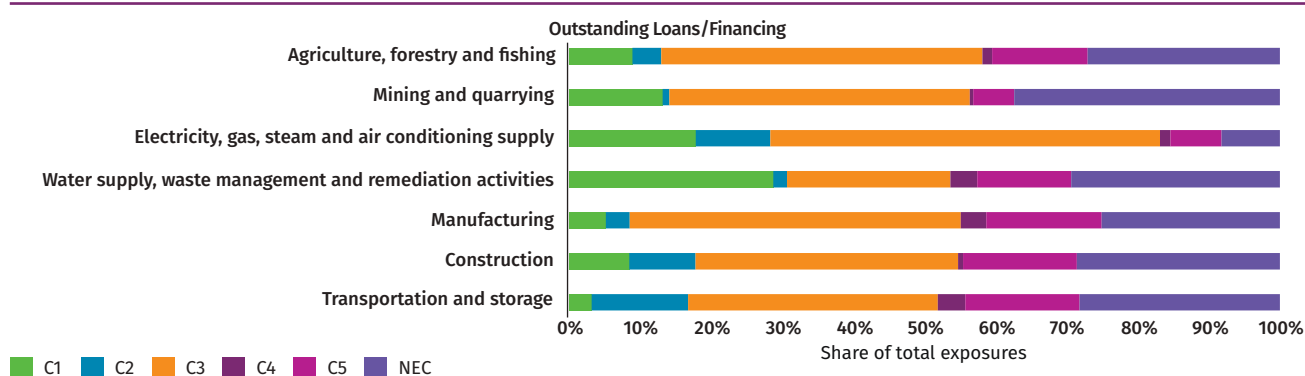
Note: The Climate Data Catalogue has 82 data items, of which 55 items are in the 8 main data groups and 27 items are under others.

Source: Bank Negara Malaysia

## Growing new innovative forms of financing to support transition

The high share of exposures observed in the transitioning and watchlist categories, namely C2 to C5 (including NEC), across most sectors (Chart 3) point to the critical need of significant green investments and transition finance to support climate mitigation and adaptation measures by businesses, particularly SMEs. Meeting this need requires new financing approaches to scale up financial flows towards climate transition activities. This includes utilising a diverse array of financing instruments, such as alternative finance solutions featuring public-private partnerships, and blended finance options with risk-sharing arrangements.

Chart 3: CCPT Classification for Selected Sectors



Note: Exposures to non-SME and SME segments. NEC refers to 'not elsewhere classified' due to exposures exempted from CCPT reporting and accounts pending review.

Source: CCPT Reporting, December 2022



# Annex





Table A.1

## Key Financial Soundness Indicators

	As at end				
	2H 2020	1H 2021	2H 2021	1H 2022	2H 2022p
	% (or otherwise stated)				
<b>Banking System</b>					
Total Capital Ratio	18.9	18.6	19.2	18.4	18.8
Tier 1 Capital Ratio	15.7	15.4	16.0	15.2	15.6
Common Equity Tier 1 Capital Ratio	15.2	14.9	15.5	14.7	15.0
Return on Assets <sup>1</sup>	1.0	1.1	1.1	1.3	1.4
Return on Equity <sup>1</sup>	8.4	9.7	9.5	11.8	12.4
Liquidity Coverage Ratio	148.2	149.1	153.4	148.3	154.1
Net Impaired Loans Ratio <sup>2,3</sup>	1.0	1.0	1.1	1.1	1.1
Capital Charge on Interest Rate Risk in the Trading Book to Capital Base	1.1	1.1	1.0	0.9	0.9
FX Net Open Position to Capital Base	5.2	4.7	4.0	4.4	3.6
Equity Holdings to Capital Base	1.5	1.3	1.3	1.3	1.3
<b>Insurance and Takaful Sector</b>					
Capital Adequacy Ratio	220.2	221.1	222.2	224.4	225.9
Life Insurance and Family Takaful					
Excess Income over Outgo (RM billion) <sup>4</sup>	8.4	1.1	3.2	-2.3	6.9
New Business Premium / Contribution (RM billion)	9.9	11.8	10.5	12.3	10.8
Capital Adequacy Ratio	203.4	207.9	212.0	217.3	216.8
General Insurance and General Takaful					
Operating Profit (RM billion)	1.7	1.8	1.3	1.0	2.0
Underwriting Profit (RM billion)	0.9	1.3	0.7	0.4	1.2
Gross Direct Premium / Contribution (RM billion)	10.5	10.8	10.8	12.1	12.1
Claims Ratio	54.2	52.7	56.5	63.8	52.1
Capital Adequacy Ratio	283.9	270.9	256.9	246.2	249.5
<b>Household (HH) Sector</b>					
HH Debt (RM billion) <sup>2</sup>	1,320.6	1,338.6	1,376.4	1,409.1	1,451.4
HH Financial Assets (RM billion)	2,901.3	2,896.0	2,971.3	2,901.9	3,002.4
HH Debt-to-GDP Ratio <sup>2</sup>	93.1	89.8	89.1	84.5	81.2
HH Financial Assets-to-Total HH Debt Ratio <sup>2</sup>	219.7	216.3	215.9	205.9	206.9
HH Liquid Financial Assets-to-Total HH Debt Ratio <sup>2</sup>	145.2	145.8	144.0	137.5	135.4
Impaired Loans Ratio of HH Sector (Bank Loans) <sup>2,3</sup>	1.1	1.2	1.1	1.3	1.2
Impaired Loans Ratio of HH Sector (Non-Bank Loans) <sup>5</sup>	1.4	1.5	1.0	1.1	1.1
<b>Business Sector</b>					
Return on Assets	1.1	2.2	2.4	2.6	2.2
Return on Equity	2.2	4.2	4.2	4.7	4.2
Debt-to-Equity Ratio	22.6	22.6	22.5	22.0	20.9
Interest Coverage Ratio (times)	4.8	7.0	7.2	7.9	6.0
Operating Margin	5.5	7.5	7.5	7.6	6.5
Impaired Loans Ratio of Business Sector <sup>2,3</sup>	2.6	2.9	2.8	3.0	2.8
<b>Development Financial Institutions<sup>6</sup></b>					
Lending to Targeted Sectors (% change)	7.7	6.2	3.6	2.6	1.1
Deposits Mobilised (% change)	6.6	7.5	1.4	2.3	3.9
Impaired Loans Ratio	5.1	5.5	5.3	5.9	5.5
Return on Assets	1.1	1.3	1.1	1.0	1.1

<sup>1</sup> Banking system profits are aggregated at the entity level and adjusted for dividend income received from domestic banking subsidiaries.

<sup>2</sup> The loan/financing data from 2021 onwards are based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology.

<sup>3</sup> Based on Stage 3 loans under the Malaysian Financial Reporting Standard 9 (MFRS 9).

<sup>4</sup> Excess income over outgo excludes investment-linked unit funds to reflect the core performance of ITOS' profitability more accurately and thus, may not be directly comparable to the data reported in previous publications.

<sup>5</sup> Based on loans with 3 months or more in-arrears.

<sup>6</sup> Refers to development financial institutions under the Development Financial Institutions Act 2002.

<sup>p</sup> Preliminary

Note: Figures may not necessarily add up due to rounding.

Source: Bank Negara Malaysia, Bursa Malaysia, Department of Statistics Malaysia, Employees Provident Fund, Securities Commission Malaysia, S&P Capital IQ and Bank Negara Malaysia estimates

Table A.2

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

	As at end				
	2H 2020	1H 2021	2H 2021	1H 2022	2H 2022 <sup>p</sup>
<b>Islamic Banking System</b>	RM million (or otherwise stated)				
Total Assets <sup>1</sup>	1,089,540.7	1,139,095.2	1,191,622.4	1,236,289.1	1,316,167.8
% of total assets of entire banking system <sup>1</sup>	34.2	35.1	35.5	35.4	36.3
Total Financing <sup>1</sup>	817,403.3	841,507.2	879,159.0	915,901.3	974,071.9
% of total loans / financing of entire banking system <sup>1</sup>	41.0	41.5	42.5	43.0	44.5
Total Deposits and Investment Accounts <sup>1</sup>	889,951.4	933,749.8	968,918.4	1,001,104.9	1,058,581.0
Total Deposits <sup>1</sup>	790,905.4	820,390.9	844,293.4	865,763.1	926,371.6
Total Investment Accounts <sup>1</sup>	99,046.0	113,358.9	124,625.0	135,341.8	132,209.3
% of total deposits and investment accounts of entire banking system <sup>1</sup>	38.9	39.7	39.8	40.2	41.6
	%				
Total Capital Ratio	18.6	18.4	19.2	18.3	18.7
Tier 1 Capital Ratio	15.0	14.8	15.5	14.8	15.3
Common Equity Tier 1 Capital Ratio	14.5	14.3	15.0	14.2	14.6
Return on Assets	0.7	1.3	1.1	1.2	1.3
Net Impaired Financing Ratio	0.9	0.9	0.9	1.0	1.0
<b>Takaful Sector</b>	RM million (or otherwise stated)				
Takaful Fund Assets	41,871.2	43,223.1	45,803.0	46,780.0	49,867.1
Family	37,025.5	38,272.5	40,258.9	41,182.8	43,647.7
General	4,845.7	4,950.6	5,544.1	5,597.2	6,219.4
% of insurance and takaful industry	11.9	12.3	12.6	13.2	13.4
Net Contribution Income	5,985.5	7,189.0	6,614.6	8,588.5	7,717.5
Family	4,527.5	5,776.3	5,093.2	6,886.3	5,856.1
General	1,457.9	1,412.8	1,521.5	1,702.1	1,861.4
% of insurance and takaful industry	18.2	21.9	19.4	24.3	21.6
Family Takaful					
New Business Contribution	3,401.9	4,682.1	3,817.5	5,439.9	4,618.9
General Takaful					
Gross Direct Contribution	1,817.1	1,861.7	1,966.4	2,229.5	2,407.2
Claims Ratio (%)	58.0	51.8	50.7	60.0	61.3

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

Note: Figures may not necessarily add up due to rounding.

Source: Bank Negara Malaysia