

Key Developments in the First Half of 2022

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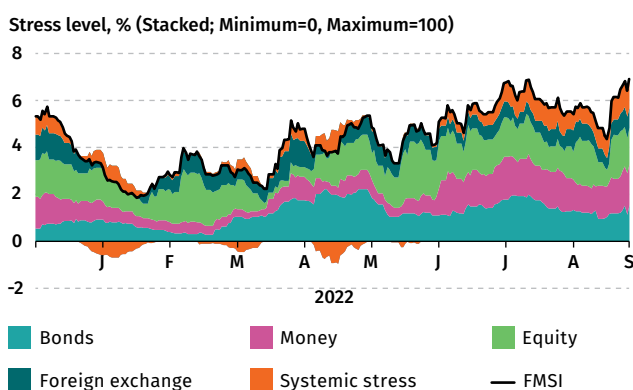
Key Developments in the First Half of 2022

MARKET RISK

Domestic financial market conditions remained orderly despite significant volatility in global markets

The Malaysian financial markets continue to be significantly influenced by global developments. Growing concerns over global growth, rising inflation and volatile commodity prices have led to a tightening in global financial market conditions. A quicker than anticipated monetary policy normalisation in major economies to rein in inflation, along with prospects of a much longer war in Ukraine as well as continuing risks of disruptions to economic activity due to COVID-19 restrictions in parts of the world, are adding to financial market volatility. Domestically, market stress levels have been elevated since the second quarter of 2022, reflecting a global risk-off sentiment in response to rising global bond yields. Stress levels, nonetheless, remain below the level observed at the onset of the COVID-19 pandemic between March and April 2020 (Chart 1.1).

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



Note: The FMSI reached a peak of 28.2% at the onset of the COVID-19 pandemic in March 2020.

Source: Bloomberg, Reuters and Bank Negara Malaysia estimates

The domestic equity market declined in tandem with regional peers, retracing gains recorded in the earlier part of the year (Chart 1.2). The FBM KLCI has shed 142.6 points year-to-date (YTD),¹ with the total market capitalisation of Bursa Malaysia down by 9.0%. Trading value and volume in the domestic equity market have declined to pre-pandemic levels. This was driven by the subdued investor sentiment in the equity market following recessionary fears in advanced economies and continued inflationary pressures.

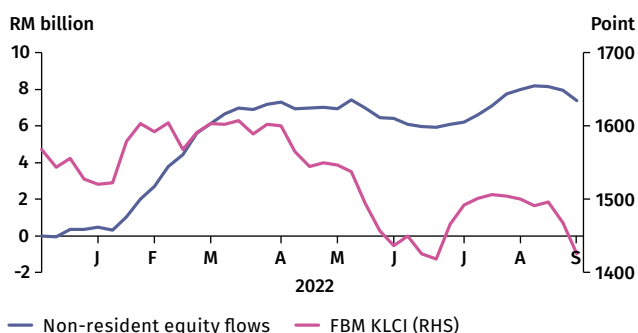
Domestic institutional investors remained net sellers of domestic equities in contrast to pre-pandemic flows (YTD: -RM9.7 billion; 2015-2019 average: +RM8.2 billion). This partly reflected profit-taking activities by domestic institutional investors amid buying interest by non-resident investors. Notwithstanding the global risk-off sentiment, non-residents recorded net inflows into the domestic equity market for the first time in four years (YTD: +RM7.4 billion). The bulk of these flows were recorded in the financial services and plantation sectors given improvements in the outlook for the banking sector following the Overnight Policy Rate (OPR) hikes since May, and higher crude palm oil prices.

Retail investors' trading activity has fallen sharply and now accounts for around 24% (2021: 35%; 2015-2019 average: 18.5%) of total value traded in the equity market. This was likely due to a combination of several factors, including rising deposit rates, heightened market volatility and a resumption of retail spending following the reopening of the economy. As at end-June 2022, just over 18% of household financial assets were in equity² (2019: 20%). The bulk of these investments are not funded by borrowings, thus shielding households from debt-related stress due to sharp equity price swings.

¹ Data as of 23 September 2022.

² Including non-fixed price unit trust funds mainly invested in equity.

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



Source: Bloomberg

Domestic institutional investors remained active in the government bond market

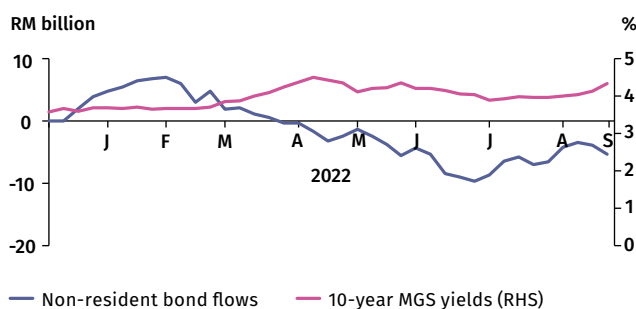
Non-resident portfolio flows in the domestic government bond³ market turned negative from the second quarter, partly reflecting safe-haven flows as concerns over slower global growth increased. This was further compounded by the narrower UST-MGS spread following aggressive rate hikes by the US Federal Reserve. The average yield differential between Malaysian Government Securities (MGS) and US Treasuries (UST) narrowed to 137 basis points (bps) YTD (2015-2019 average: 166 bps). Total net non-resident outflows amounted to RM5.3 billion YTD (Chart 1.3). Consequently, the share of non-resident holdings in the government bond market decreased to 23.0% YTD (December 2021: 25.4%; 2015-2019 average: 27%).

Domestic institutional investors, such as banks, non-bank financial institutions (NBFIs) and insurers and takaful operators (ITOs), remained active in the government bond market. Banks have been the largest net buyer of government bonds since the onset of the pandemic (YTD: RM24.2 billion; January-September 2021: RM24.9 billion). By end-2022, banks will revert to complying with the Statutory Reserve Requirement (SRR) without recognising holdings

³ Refers to both Malaysian government bonds and sukuk, unless otherwise stated.

of MGS and Malaysian Government Investment Issues. While this could see some changes in their demand for government bonds, it is not expected to result in disruptive adjustments in the funding markets given ample liquidity in the banking system. Issuances of Malaysian government bonds continued to record healthy bid-to-cover ratios, averaging 2.3 times (2015-2019 average: 2.3 times), while the average daily trading volume in the secondary market stood at RM2.8 billion (2015-2019 average: RM3.1 billion), reflecting continued orderly market conditions. Investor confidence in the Malaysian domestic bond market is expected to be sustained by the strong economic performance and stable sovereign rating outlook.⁴

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



Source: Bank Negara Malaysia and Bloomberg

The corporate bond market also continued to function smoothly, preserving relatively stable funding conditions for businesses. Credit spreads between 10-year AAA papers and 10-year MGS have been tighter than the pre-pandemic average, reflecting sustained investor interest in corporate bonds (YTD average: 46.5 bps; 2015-2019 average: 55.4 bps). Gross corporate bond issuances remained healthy, although issuances were below levels recorded in the same period in 2021 (January-July 2022: RM60.1 billion, January-July 2021: RM63.8 billion) as some issuers deferred fund raising activities given the elevated volatility observed in domestic bond yields. However, issuances are expected to recover gradually moving forward following further normalisation of economic activity.

⁴ Fitch (BBB+), Moody's (A3) and S&P (A-) carry a stable outlook on Malaysia. S&P has revised Malaysia's rating outlook to 'stable' from 'negative' in June 2022 while reaffirming the rating at 'A-', following two years of negative outlook that had been in place since June 2020 at the height of the COVID-19 pandemic.

The US dollar has strengthened significantly over the course of the year and has remained at a two-decade high since 26 April 2022. The combination of aggressive policy rate hikes in the US, flight to perceived safe US dollar assets following the military conflict in Ukraine and more moderate global growth outlook, had affected most major and emerging market currencies, including the ringgit. YTD, the ringgit has depreciated by 8.6% against the US dollar. This depreciation was in line with other major and regional currencies,⁵ which have weakened by between -4.8% and -19.1%, against the US dollar. Against other major trade partners, the ringgit has remained broadly stable as reflected in the marginal appreciation of 0.2% in the Nominal Effective Exchange Rate.⁶ Notwithstanding the depreciation in the ringgit against the US dollar, adjustments in the onshore foreign exchange (FX) market have remained orderly, with the 1-month USD/MYR implied volatility averaging at 4.2%, below recent historical averages (2021: 4.3%; 2015-2019 average: 6.5%). Trading volumes in the domestic FX market have also remained healthy, with the onshore trading volume averaging

USD13.3 billion daily (2021: USD11.2 billion). These conditions are expected to ensure that the domestic FX markets will continue to support businesses and market participants in managing their FX exposures.

The global cessation of the non-USD London Interbank Offered Rate (LIBOR) and 1-week and 2-month USD LIBOR settings on 31 December 2021 occurred without market disruption. Legacy LIBOR exposures for these settings have since transitioned to alternative rates,⁷ while 72% of legacy contracts have successfully incorporated fallback provisions as of June 2022. LIBOR exposures of the Malaysian banking industry continued to decline (June 2022: RM744 billion; December 2021: RM876 billion) as the industry makes further progress in transitioning to alternative risk-free rates (RFR). Malaysian banks have begun trading Secured Overnight Financing Rate derivatives since the end of 2021 and are ready to support a growing demand for RFR-referenced loans. The remaining USD LIBOR exposures are expected to transition smoothly by June 2023, with banks actively engaging clients to manage potential transition risks.

⁵ Japanese yen, Singapore dollar, Thai baht, Philippines peso, Indonesian rupiah and Vietnamese dong.

⁶ Refers to the weighted average of home country's currency against the currencies of major trading partners.

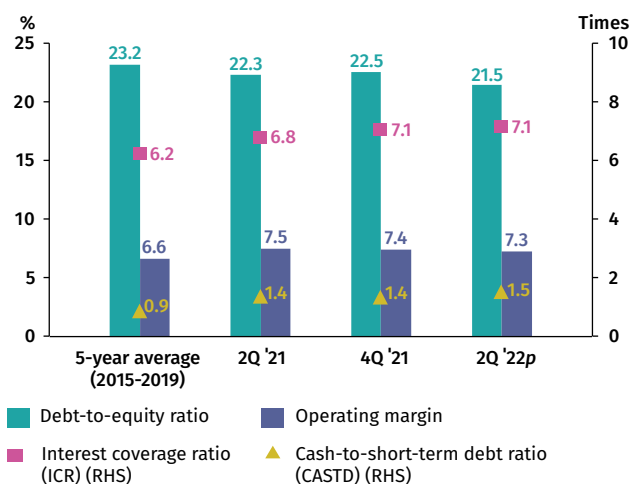
⁷ For example, risk-free rates and cost of funds.

CREDIT RISK

Business performance continued to recover, but conditions remain challenging in some sectors amid rising input costs and labour shortages

The first half of 2022 saw further recovery in the business operating environment, as Malaysia transitioned to endemicity. Businesses were allowed to operate at full capacity. Most firms, particularly those in the wholesale and retail trade sector, reported strong performance in 2Q 2022, supported by a surge in festive-related spending and COVID-19 support measures. The reopening of international borders since 1 April 2022 also facilitated the recovery in tourism-related sectors. Hotel occupancy rates recovered from its low of 11% in 2Q 2020 to 46.6% in 2Q 2022 (4Q 2021: 49.9%; 2019 average: 56.6%). The financial performance of businesses remained above pre-pandemic average, with the median interest coverage ratio (ICR)⁸ and operating margin at 7.1 times and 7.3% (4Q 2021: 7.1 times and 7.4%; 2015-2019 average: 6.2 times and 6.6%), respectively (Chart 1.4). Firms continued to hold precautionary liquid buffers to manage business uncertainty, with the aggregate cash-to-short-term debt ratio (CASTD)⁹ remaining high.

Chart 1.4: Business Sector – Key Financial Performance Indicators



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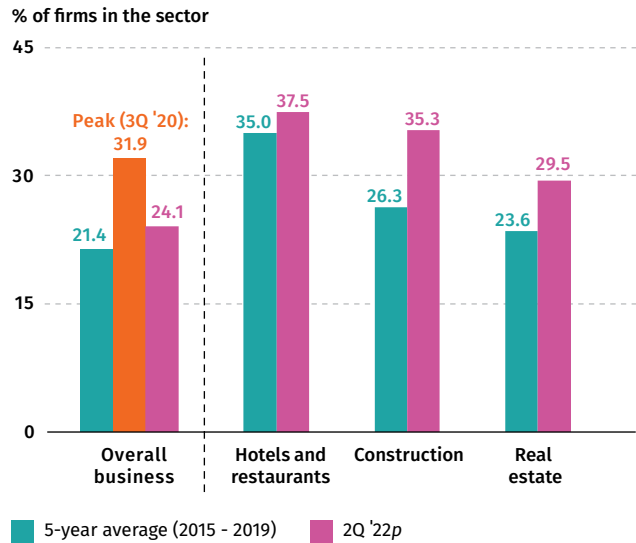
Note: Prudent thresholds for ICR and CASTD are two times and one time, respectively.

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

⁸ Prudent threshold for ICR is two times.

⁹ Prudent threshold for CASTD is one time.

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



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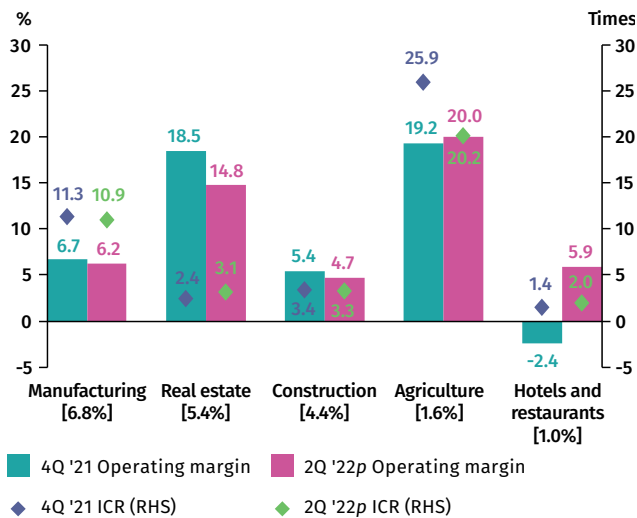
Source: S&P Capital IQ and Bank Negara Malaysia estimates

Improvements at the aggregate level, however, masked the uneven recovery in certain sectors. The overall share of firms-at-risk¹⁰ was stable (2Q 2022: 24.1%; 4Q 2021: 24.7%), although it remained above the pre-pandemic averages for the hotels and restaurants, construction, and real estate sectors (Chart 1.5). This reflects the persistent challenges faced by firms in these sectors. Engagements with firms indicated that key issues surrounding rising input costs and labour shortages have become more prevalent since the beginning of the year. Labour shortages have somewhat weighed on the revenue and financial standing of firms, particularly among smaller firms in the construction, palm oil and selected manufacturing sub-sectors (such as electrical and electronics, plastics, chemicals and chemical products). The implementation of the higher minimum wage in May 2022 has also added upward pressure on firms' operating costs. In the commercial real estate sector, pre-existing oversupply conditions and weak demand continued to weigh on occupancy and rental rates of office and retail space. Despite the challenges, the financial performance and debt servicing capacity for firms in these sectors have generally held up (Chart 1.6). This has been supported by financial buffers accumulated over the years and proactive inventory management strategies, especially among the larger firms. Nonetheless, banks continue to maintain a high level of vigilance over the loan performance of small and medium enterprises (SMEs) and large corporate exposures with weaker financials. This

¹⁰ Firms-at-risk are defined as listed non-financial corporates with ICR below the prudent threshold of two times.

includes intensified monitoring and engagements with borrowers, as well as proactive loan classification and provisioning practices to manage potential credit risks arising from such exposures.

Chart 1.6: Business Sector – Operating Margin and Debt-servicing Capacity Indicators for Selected Sectors



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Note: 1. Prudent threshold for ICR is two times.
2. [...] refers to loans to the sector as a share of total banking system loans.

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

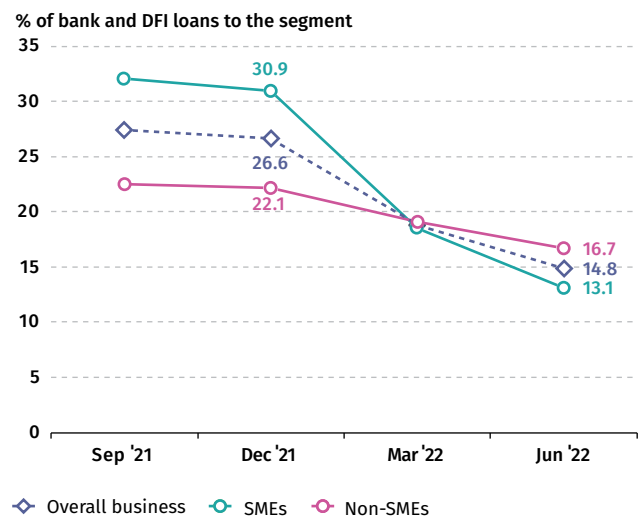
Most SMEs that have exited repayment assistance have resumed their loan repayments

Given their smaller cash buffers and thinner profit margins compared to larger firms, SMEs continued to account for the largest share (94%) of firms benefitting from repayment assistance.¹¹ Nevertheless, SME loans under repayment assistance have halved following the expiry of the PEMULIH programme. As of June 2022, 13.1% of total SME loans (or 2.3% of total loans from the banking system and development financial institutions (DFIs)) remained under repayment assistance (Chart 1.7). SMEs that exited the repayment assistance programme have mostly been able to resume their loan repayments. Only a small number of accounts (7% or equivalent to less than 1% of the total value of outstanding SME loans) that have exited repayment assistance since December 2021 have fallen behind in repayments. Of this, less than 2% have turned non-performing (0.3% of the total value of outstanding SME

¹¹ Refers to all types of repayment assistance for SMEs including banks' bespoke packages and rescheduling and restructuring (R&R).

loans), while the remaining accounts would generally be eligible for further repayment assistance through various debt management programmes that remain in place, including that offered by the Credit Counselling and Debt Management Agency (Agensi Kaunseling dan Pengurusan Kredit, AKPK) with the support of banks. As these programmes are more targeted, risks associated with banks propping up financially unviable borrowers are also low given the ability of banks to assess a borrower's financial condition. The Bank has also not observed the evergreening¹² of loans by banks that could increase future risks.

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



Source: Bank Negara Malaysia

Viable borrowers continue to have access to financing

Business loan growth has continued to recover in line with improving business prospects. Outstanding business loans¹³ in the first half of 2022 expanded by 5.5% (December 2021: 4.8%) on an annual basis, driven largely by sustained demand for working capital. Annual growth in loan disbursements remained significantly above the pre-pandemic average (1H 2022: 23.6%; 2021: 27.1%; 2015-2019 average: 2.5%), reflecting higher working capital needs amid stronger business activities and elevated

¹² Defined as rolling over borrowings to potentially non-viable firms rather than classifying loans as non-performing.

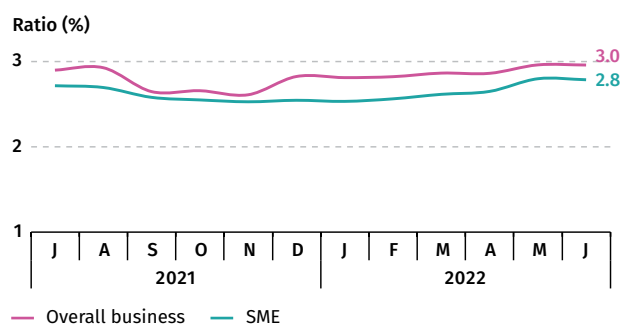
¹³ Refers to loans and financing from the banking system and DFIs. The loan/financing data used is based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology and thus, may not be directly comparable to the data reported in previous publications.

cost pressures. Outstanding loans to SMEs also grew faster by 7.5% (December 2021: 4.9%), complemented by the continued availability of facilities under BNM's Fund for SMEs.¹⁴ Overall SME financing approval rates are recovering to pre-pandemic levels (June 2022: 80.2%; 2021: 78.7%; 2015-2019 average: 82.8%) as banks have greater visibility on the credit worthiness of SME borrowers with the transition to more targeted repayment assistance programmes. Meanwhile, larger corporates with strong financials continued to tap on the corporate bond market for funding. Corporate bond¹⁵ issuances nonetheless declined in the first half of 2022 (-7.6%; June 2021: +0.4%) due largely to volatile domestic bond yields. No significant increase in corporate external debt was noted relative to December 2021, as corporates remained cautious of developments in the external environment. On aggregate, the non-financial corporate debt-to-GDP ratio declined to 104.4% (December 2021: 109.7%) due mainly to the stronger GDP growth.

Business loan impairments edged up slightly but remained low at 1.1% (December 2021: 1.0%; 2015-2019 average: 1.0%) of total banking system loans, or 3.0% of total banking system loans to business (Chart 1.8). The uptick was driven mainly by borrowers in the construction, mining and quarrying, and wholesale and retail trade sectors. Unsurprisingly, SMEs faced more challenges in servicing their debt obligations given their smaller buffers. Leading indicators from banks, however, suggest that further overall business impairments should be relatively contained. The share of business loans with increased credit risk¹⁶ continued to decline (June 2022: 14.4%; December 2021: 16.2%; December 2019: 11.4%), in line with the gradual improvement in business conditions. Risks from non-financial corporate external debt also remain manageable, with the bulk (74%) of such exposures having medium- to long-term maturities of greater than 1 year. Additionally, an analysis of corporates

with large external borrowings¹⁷ indicates that most of them were either naturally or financially hedged. 15% of the top corporate external exposures may be more susceptible to exchange rate volatility. However, these borrowers have minimal domestic debt (less than 1% of domestic banking system loans and debt securities), and hence pose limited direct risk to domestic financial stability.

Chart 1.8: Business Sector – Gross Impaired Loans



Note: The loan/financing data used is based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology and thus, may not be directly comparable to the data reported in previous publications.

Source: Bank Negara Malaysia

Businesses are expected to face continuing headwinds, particularly, from ongoing concerns over supply-side disruptions, higher input costs and tightening global financial conditions. Recognising these challenges, the Bank conducted a sensitivity analysis¹⁸ on the impact of tightening financial conditions and ringgit depreciation on business loans. Applying this sensitivity analysis to the Bank's earlier stress test, business impairments (including SMEs) could rise to 6.9% of business loans (or 2.5% of total banking system loans) by end-2023¹⁹ under a more extreme adverse scenario.²⁰ This remains within banks' own stress test expectations and buffer capacity to absorb losses, as indicated by the banking system's post-shock capital ratio of 15.4% as at end-2023. Corporate default risk indicators²¹ have also continued to improve, with the probability

¹⁴ About RM9.1 billion (from a total allocation of RM31.1 billion) remained available as at end-June 2022.

¹⁵ Refers to both bonds and sukuk, including short-term papers, unless otherwise stated. Excludes issuances by Cagamas, financial institutions and non-residents.

¹⁶ Classified as Stage 2 loans under the Malaysian Financial Reporting Standard 9 (MFRS 9).

¹⁷ Comprising around 90% of corporates' external borrowings, excluding intercompany loans and trade credit exposures.

¹⁸ This sensitivity analysis assumes further tightening of financial conditions, including a depreciation in the ringgit by up to 10% and an increase in average corporate bond yield by more than 200 basis points. Refer to the section on 'Financial Institution Soundness and Resilience – The Banking Sector' for further details.

¹⁹ Previous stress test: Up to 6.2% of business loan exposures (2.2% of total bank exposures) could be at risk of default by end-2023.

²⁰ Refer to the section on Assessing the Resilience of Financial Institutions in the BNM Financial Stability Review for Second Half 2021 for further details.

²¹ As tracked by the Bloomberg Default Risk indicator which measures the probability of default over a one-year horizon for the sample of Bursa-listed firms. The indicator is based on the Merton distance-to-default measure, along with additional economically and statistically relevant factors.

of default for the median firm declining further in 2Q 2022 (0.17%; 4Q 2021: 0.22%; 2015-2019 average: 0.15%). Existing credit guarantee schemes²² and ongoing repayment assistance programmes from banks will continue to support viable borrowers. Debt resolution mechanisms²³ such as Small Debt Resolution Scheme (SDRS)²⁴ and Corporate Debt Restructuring Committee (CDRC) provide out-of-court restructuring options for distressed but viable firms, although the number of cases handled through these mechanisms remains modest. This is partly due to banks' improved capacity, since the Asian Financial Crisis, in managing and resolving multi-lender debt. Additionally, banks have substantially enhanced their operational capacity to support tailored repayment assistance for their borrowers, drawing upon their experience during the pandemic.

While debt resolution efforts continue to be predominantly driven by individual banks

themselves, a strong debt resolution framework can play an important role under conditions of broader stress to mitigate an insolvency cliff and provide vital support to distressed but viable firms. Key to such a framework is the provision of out-of-court and court-sanctioned corporate rescue mechanisms that can:

- i. Assist balance sheet and cashflow restoration and avert the premature failure of viable borrowers;
- ii. Improve the speed and value of debt recovery; and
- iii. Mitigate potential losses to financial institutions, which could otherwise adversely affect economic growth and recovery prospects.

It is therefore critical to expedite legislative enhancements to the Companies Act 2016²⁵ and enhance efforts to simplify the winding-up process for smaller businesses.

²² Credit guarantees by Credit Guarantee Corporation Malaysia Berhad and Syarikat Jaminan Pembiayaan Perniagaan Berhad.

²³ Refer to the Information Box on 'Debt Resolution Mechanisms for Viable Businesses Facing Temporary Financial Distress' in the BNM Financial Stability Review for Second Half 2020 for further details.

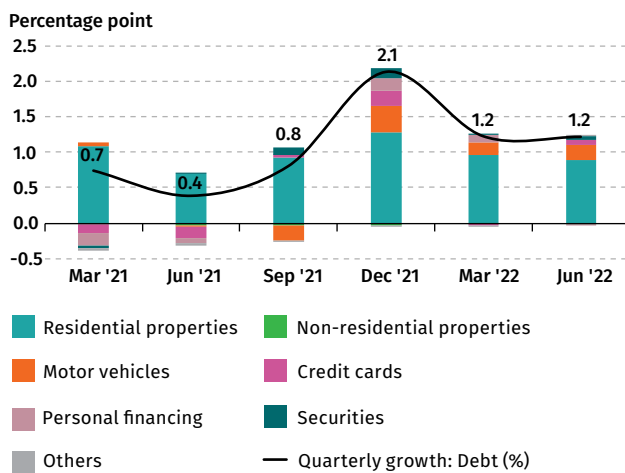
²⁴ SDRS has assisted more than 1,500 SMEs with RM2.4 billion of financing under R&R since 2003.

²⁵ The Companies Commission of Malaysia had issued a consultative document on the Companies (Amendment) Bill 2020, which will widen the coverage of firms that will benefit from these rescue mechanisms while embedding sufficient safeguards against potential abuse.

Improving income and employment conditions are supporting continued household resilience, but risks linger in some segments

Household lending has continued to recover from disruptions brought on by the pandemic. In annual terms, household debt²⁶ expanded at a faster pace (5.5%; December 2021: 4.1%) in the first half of 2022. Quarter-on-quarter trends also point to a sustained recovery (Chart 1.9). Loans for the purchase of residential property and vehicles were the key drivers of household debt growth, in line with improvements in income and employment conditions (Chart 1.10). Policy measures by the Government²⁷ have further encouraged home and vehicle purchases as economic activities resumed and Malaysia transitioned towards endemicity. The ratio of household debt-to-GDP has reverted closer to pre-pandemic levels at 84.5% (December 2021: 89.1%; 2019: 82.8%), consistent with observations of lending standards remaining generally prudent,

Chart 1.9: Household Sector – Quarterly Growth of Debt

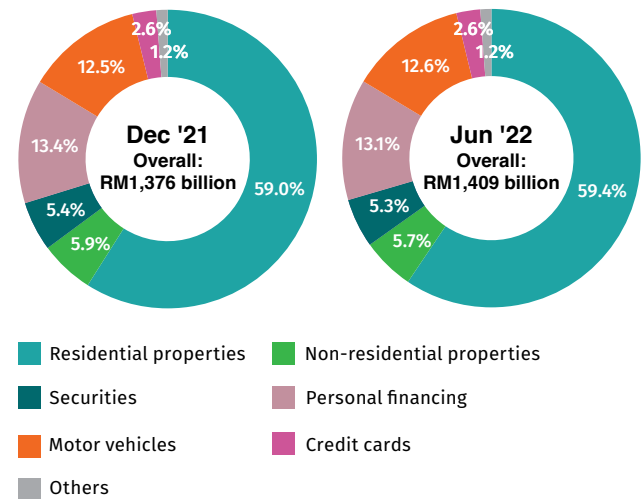


Note: The loan/financing data used is based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology and thus, may not be directly comparable to the data reported in previous publications.

Source: Bank Negara Malaysia

especially among banks (Chart 1.11). Consequently, household debt grew at a more modest pace relative to the strong nominal GDP growth recorded in the first half of 2022.

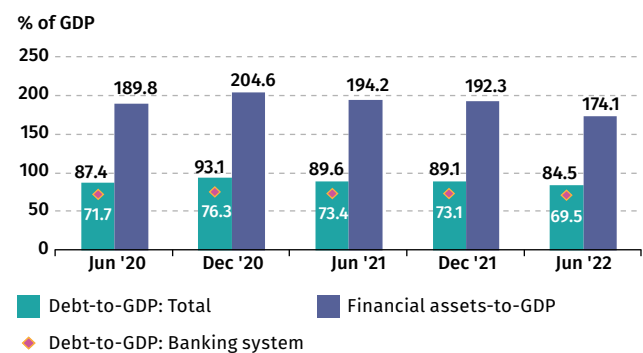
Chart 1.10: Household Sector – Composition of Debt by Purpose



Note: 1. The loan/financing data used is based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology and thus, may not be directly comparable to the data reported in previous publications.
2. Figures may not add up due to rounding.

Source: Bank Negara Malaysia

Chart 1.11: Household Sector – Key Ratios



Note: The loan/financing data used is based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology and thus, may not be directly comparable to the data reported in previous publications.

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

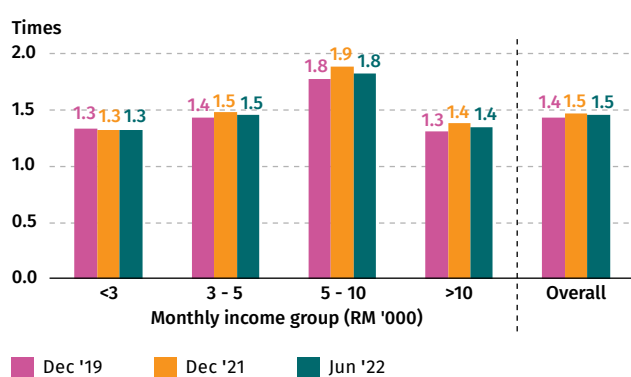
²⁶ Extended by both banks and non-bank financial institutions.

²⁷ These include stamp duty exemptions announced in Budget 2021 for first-time home buyers of properties up to RM500,000 from 1 January 2021 to 31 December 2025, and the extension of the sales and vehicle tax exemption for the purchase of motor vehicles to June 2022.

Key Developments in the First Half of 2022

Banks continued to support lending to households in the first half of 2022 (outstanding loan growth: 5.8%; December 2021: 4.3%). The median debt-to-income (DTI) ratio²⁸ for overall households has increased only marginally over the period of the pandemic despite income shocks and large-scale repayment assistance extended by banks (June 2022: 1.5 times; December 2019: 1.4 times). This was consistently observed across all income groups (Chart 1.12) and corroborates supervisory observations of bank lending standards that remain sound as well as more cautious borrowing behaviour during the pandemic. Other measures of debt servicing capacity also remained prudent. The median debt service ratios (DSRs) of newly approved and outstanding household loans stood at 43% and 35%, respectively, preserving healthy buffers to support loan servicing. The share of more-risky borrowers with a DSR above 60% has been stable at 24% of total household borrowers (or 32.6% of total banking system loans). Most (67%) of this debt is associated with borrowers earning more than RM5,000 monthly, with a low impairment ratio²⁹ (1.3%; December 2021: 1.2%). Banks are, however, vigilant over potential longer-term scarring effects from the pandemic that could see impairments edge higher. This may arise from more structural changes in the job market, or uneven growth prospects in certain economic sectors. The Bank's stress tests affirm that the banking system would be resilient against a scenario in which existing household financial buffers are progressively run down, thus limiting financial stability risks.³⁰

Chart 1.12: Household Sector – Median Debt-to-income Ratios by Income Group



Source: Bank Negara Malaysia

²⁸ The DTI is a measure of the overall leverage of a borrower. It is calculated for each borrower by taking the ratio of all outstanding debt held by the borrower to their gross annual income. The DTI ratio is a new indicator computed using granular borrower-level data, replacing the previous household leverage ratio which was based on a survey to banks.

²⁹ Impairment ratio based on Stage 3 loans under MFRS 9.

³⁰ Refer to the section on Assessing the Resilience of Financial Institutions in the BNM Financial Stability Review for Second Half 2021 for further details.

The Bank also remains vigilant to emerging sources of credit risks, including developments relating to buy-now-pay-later (BNPL) schemes. While BNPL schemes have experienced rapid growth, household exposures to the largest BNPL lenders for which data is available are currently still small relative to total household lending (less than 0.1%). At present, BNPL schemes are mainly offered by non-bank providers, although a few banks more recently are also making such schemes available to their customers – either directly or in partnership with major BNPL lenders. Banks that engage in BNPL activities are expected to conduct loan affordability assessments in accordance with existing responsible lending requirements. This is to discourage consumers, particularly those from more vulnerable households, from making purchases on borrowed money that they cannot afford to repay. Outside the banking system, BNPL providers are currently not subject to formal regulation. This is being addressed as part of broader reforms to the regulatory framework for consumer credit providers with the proposed enactment of a Consumer Credit Act slated to be tabled in Parliament in 2023. Under the proposed Act, non-bank credit providers, including BNPL providers, will be subject to appropriate regulatory requirements to strengthen the protection afforded to credit consumers. This includes responsible lending standards and requirements on the fair treatment of consumers, consistent with that currently applicable to banks.

Credit risks associated with housing debt (which accounts for close to 60% of household debt) are assessed to be manageable. The median loan-to-value (LTV) ratio of outstanding housing loans has remained stable at 65.3% (December 2021: 65.2%). This provides comfortable buffers for banks and borrowers against a correction in house prices, although risks of this materialising have receded with the recovery in housing market activity (see Information Box on 'Developments in the Residential Property Market'). Owner-occupiers³¹ who have stronger incentives to service their loans (compared to household investors) continued to drive housing debt growth, accounting for more than two-thirds of the increase in housing debt. As in previous periods, more than half (58%) of

³¹ Proxied by individual borrowers with one housing loan.

newly approved housing loan accounts were extended to first-time home buyers, the bulk of which have higher financing margins (above 90% of the property value at the point of loan origination). Reflecting calls for banks to support home ownership goals, many of these borrowers also tend to earn lower incomes which could increase losses for banks and permanently affect future financial access of the affected borrowers in the event of defaults. Prudent loan affordability evaluations by banks, as well as mortgage guarantees,³² continue to substantially mitigate these risks. Some banks have further strengthened loan affordability assessments to take into account prospects of rising interest rates. As a result, the median DSR associated with newly approved housing loans trended lower, below the level observed before the pandemic (51%; 2015-2019 average: 54.8%). This will further augment debt servicing buffers.

Despite the historically low interest rate environment, investments in the housing market which are funded by bank borrowings have not increased significantly. Growth in banks' housing loan exposures to owner-occupiers continued to outpace that of household investors³³ (8.0% and 5.6%; December 2021: 7.5% and 5.8%, respectively). Compared to owner-occupiers, household investors generally present higher credit risks as they are more likely to default if their mortgages experience negative equity or when their rental income is affected. There has been limited evidence of this, owing mainly to banks' lending standards. Household investors are largely borrowers earning more than RM5,000 per month who are more able to withstand income shocks. Banks also remain prudent when lending to this borrower segment by applying lower LTV ratios compared to owner-occupiers. More than half (53%) of loans to household investors have LTV ratios below 90% (compared to 36% of loans to owner-occupiers). These factors continue to underpin the sound quality of household investors' loan exposures. Most of the exposures to household investors continue to be largely performing, with only 1.2% of such exposures reported to be in a negative equity position.

Quality of household borrowings remain intact amid gradual unwinding of repayment assistance and normalisation of OPR

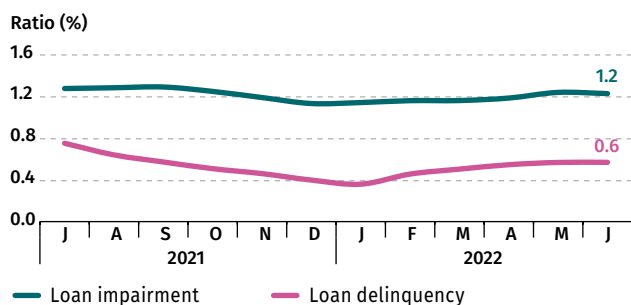
The share of household debt under repayment assistance declined significantly in the first half of 2022 to 2.4% (December 2021: 18.8%) of outstanding banking system and development financial institutions (DFIs) loans. The majority of borrowers exiting repayment assistance have resumed loan repayments without much difficulty amid improving labour and economic conditions. The share of household loans classified by banks as exhibiting higher credit risk (Stage 2 loans) correspondingly declined further to 7.9% (December 2021: 8.5%). The share of Stage 2 loans is expected to continue to improve over the course of the year as more borrowers that have exited repayment assistance programmes complete a minimum "observation" period of loan servicing (typically 6 months, with a few banks observing longer periods of 12 to 24 months) before banks reclassify the loans to Stage 1 (low credit risk). Only a small portion of borrowers continued to face challenges in repaying their loans, leading to marginal increases in the impairment and delinquency³⁴ ratios to 1.2% and 0.6%, respectively (Chart 1.13). The increase has been in line with expectations for the year and mainly reflects the unwinding of repayment assistance as well as the uneven economic recovery. While some borrowers may also face additional pressures from increases in borrowing costs and rising costs of living, this is not expected to materially affect the impairment outlook given available debt servicing buffers. Borrowers who are still under repayment assistance, the bulk of whom have been under an extended period of assistance, are however likely to present higher risks. Banks have set aside sufficient provisions, including through management overlays, for these loans. Most banks are expected to maintain conservative staging and provisioning practices for the rest of the year as they continue to monitor repayment trends for borrowers who have exited repayment assistance programmes (refer to the section on 'Financial Institution Soundness and Resilience – The Banking Sector' for more details).

³² Schemes offered by Skim Rumah Pertamaku by Cagamas Berhad and Syarikat Jaminan Kredit Perumahan Berhad (SJKP).

³³ Household investor refers to an individual borrower with more than one housing loan.

³⁴ Delinquency ratio based on loans with 2 months-in-arrears.

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



Note: The loan/financing data used is based on updated statistical reporting requirements to reflect more accurate data definition and reporting methodology and thus, may not be directly comparable to the data reported in previous publications.

Source: Bank Negara Malaysia

Household financial assets grew at a slower pace (0.2%; December 2021: 2.4%) due mainly to the weaker equity market performance and sizable drawdowns of retirement savings under the EPF special withdrawal facility introduced in April 2022 (Chart 1.14). As noted earlier, some household borrowers who are more highly leveraged and have limited financial buffers could come under financial stress, particularly in the current environment of rising cost of living pressures. Based on a conservative simulation of additional borrowing cost and basic expenditure shocks applied to the stress test conducted by the Bank in early 2022,³⁵ up to 5.7% of household loan exposures in the banking system (or 3.4% of total banking system loans) could be at risk of default by the end of 2023.³⁶ As expected, the bulk (65%) of borrowers-at-risk³⁷ continued to be from borrowers earning below RM5,000 per month given their relatively lower financial buffers to withstand severe and prolonged shocks. Nonetheless, the small additional increase in household impairments when compared to the previous stress test suggests that most borrowers are resilient to higher borrowing costs and essential expenditures. Borrowers earning below RM5,000 per month are also less affected by increases in the OPR given that more than half (56%) of their loans³⁸ are fixed-rate loans such as car loans, for which loan repayments do not change with OPR movements (Chart 1.15). Higher rates would also increase returns on household savings, thereby enhancing their financial buffers.

³⁵ Refer to the section on Assessing the Resilience of Financial Institutions in the BNM Financial Stability Review for Second Half 2021 for further details.

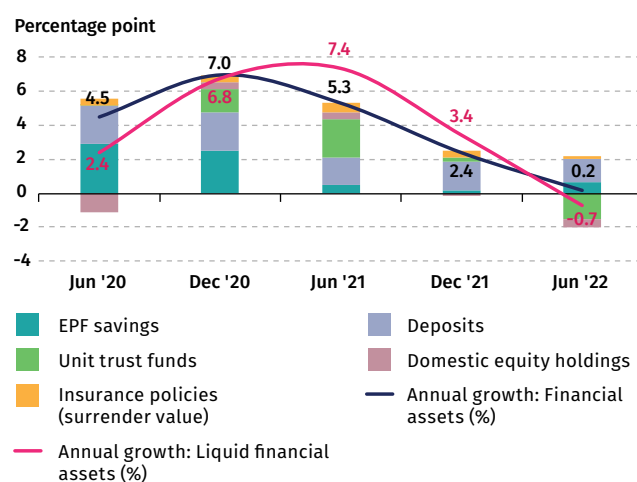
³⁶ Previous stress test: Up to 5.0% of household loan exposures (2.9% of total bank exposures) could be at risk of default by end-2023.

³⁷ Defined as borrowers at risk of depleting their cash or deposit buffers. Refer to the Information Box on 'Forecasting Households' Time to Default' in the BNM Financial Stability Review for First Half 2020 for further details.

³⁸ By number of loan accounts.

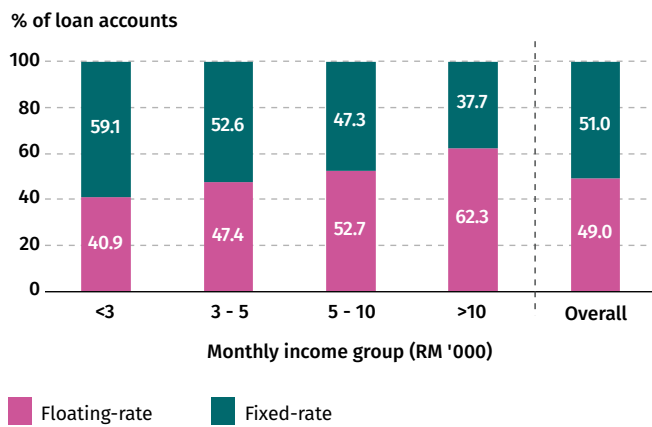
Banks continue to extend support to borrowers who still face financial challenges due to the uneven recovery and rising costs of living. In the first half of 2022, enrolments into the Debt Management Programme (DMP) offered by the Credit Counselling and Debt Management Agency (AKPK) in cooperation with banks have increased compared to the same period in 2021 (15,034; 1H 2021: 12,852) but remains lower than that observed before the pandemic (1H 2019: 23,641) as borrowers have mostly been able to deal directly with their banks to avail of repayment assistance plans offered by banks that are customised to their financial circumstances (Chart 1.16). In addition, as of July 2022, 7,302 individuals with total loan exposures of RM3.4 billion have enrolled into the Financial Management and Resilience Programme (Program Pengurusan dan Ketahanan Kewangan, URUS).³⁹ Bankruptcy action continues to be the last resort for banks, after exhausting all other debt rehabilitation and recovery efforts.

Chart 1.14: Household Sector – Annual Growth of Financial Assets



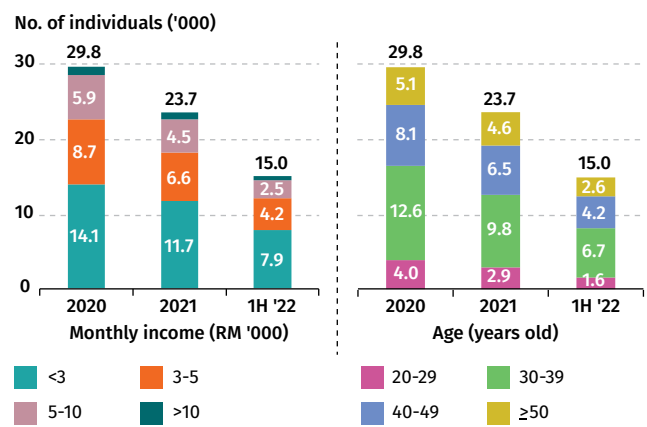
Source: Bank Negara Malaysia, Bursa Malaysia, Employees Provident Fund and Securities Commission Malaysia

³⁹ URUS was established to help eligible Bottom 50 (B50) borrower group alleviate financial difficulties caused by the COVID-19 pandemic and provide comprehensive support for long-term financial resilience. Application for URUS was open from 15 November 2021 until 31 March 2022. For eligible B50 borrowers who had signed up for the banks' flood relief assistance, application for URUS would expire upon the expiry of borrowers' flood relief assistance or until 31 July 2022.

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

Note: Data for 1H 2022 refers to year-to-date approvals as at end-June 2022.

Source: Credit Counselling and Debt Management Agency (AKPK)

Developments in the Residential Property Market

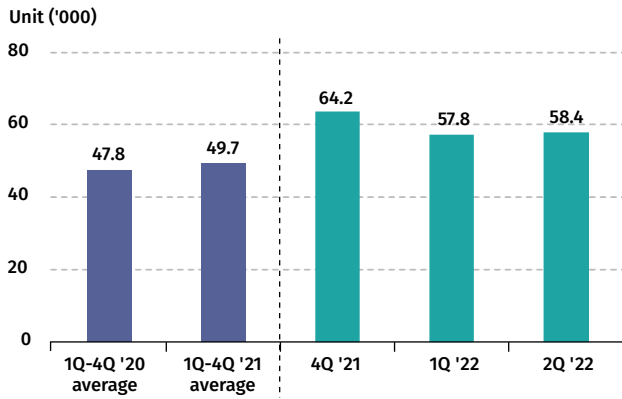
Housing market transactions picked up significantly in the fourth quarter of 2021 following the resumption of economic activities and the expiring Home Ownership Campaign, before normalising in the first half of 2022 (Chart 1.17). The trend continued to be largely driven by the mass-market segment. Units priced below RM500,000 accounted for 80% of total transactions in the first half of 2022. Consequently, the growth in house prices have remained below its long-term average (1Q 2022: 2.4%; 2015-2019 average: 5.3%). Industry observers expect market activity to continue to be supported around the pre-pandemic levels, with moderate growth in house prices. While higher inflation and borrowing rates could partially weigh on the recovery momentum, overall market activity will benefit from the gradual recovery in income and business activities as well as various support measures. These include the recently announced extension of stamp duty exemption for properties priced RM500,000 and below and 50% stamp duty discount on properties priced above RM500,000 to RM1 million.

Notwithstanding the improvements, downside risks still linger, largely stemming from the continued demand-supply imbalances. The number of unsold housing units declined but remains elevated (1Q 2022: 175,065; 2021: 183,918; 2015-2021 average: 142,317).⁴⁰ The bulk (65%) of these units have remained unsold for more than 3 years (Chart 1.18), mainly due to house prices that are well above the affordability levels of most households, especially in key states. Beyond affordability, limited connectivity to public transportation and low demand for high-rise properties in certain locations also contributed to the oversupply. Meanwhile, new supply in the affordable segment in the first half of 2022 has been underwhelming. The share of newly launched residential properties priced at RM500,000 and below trended lower (65.4%; 2021: 67.3%; 2020: 72.5%), despite strong demand from households.

In line with market activity, both demand and supply of credit to purchase residential properties improved. Loan applications across all price segments were higher in the first half of 2022 (Chart 1.19). Owner-occupiers continued to drive demand, making up 57.8% (2H 2021: 57.6%) of approved housing loans in the first half of 2022. The overall approval rates have also recovered to pre-pandemic levels, with banks continuing to observe prudent loan affordability assessments.

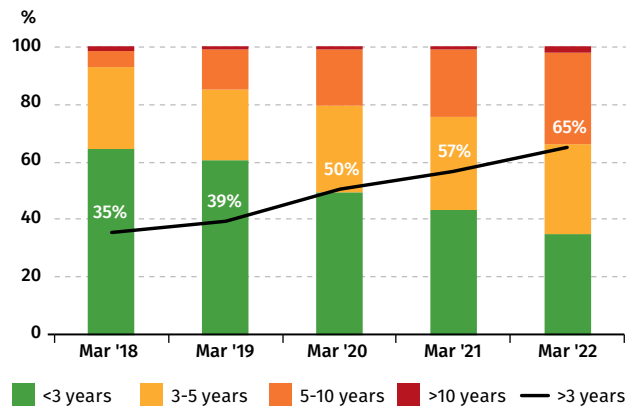
⁴⁰ The figure includes both overhang and unsold under construction (35.2% and 64.8% of total unsold units, respectively) for residential, serviced apartments and small office, home office (SOHO)/small office, virtual office (SOVO) units.

Chart 1.17: Property Market – Housing Transaction Volume



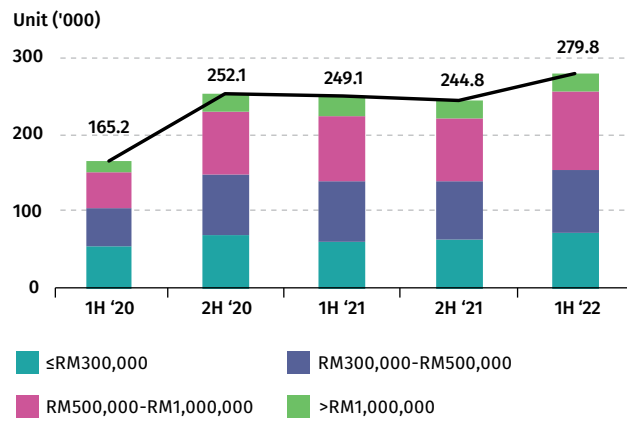
Sumber: Pusat Maklumat Harta Tanah Negara (NAPIC)

Chart 1.18: Property Market – Composition of Unsold Housing Units by Unsold Duration



Source: National Property Information Centre (NAPIC)

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



Source: Bank Negara Malaysia

The Financial Capability and Inclusion Demand Side Survey 2021

The Financial Capability and Inclusion Demand Side (FCI) Survey is a triennial¹ cross-sectional survey commissioned by the Bank. It assesses the level of financial capability of Malaysians based on measures of financial knowledge, behaviour and attitude which are used to construct a composite Malaysia Financial Literacy and Capability (MYFLIC) Index. The most recent survey was conducted in 4Q 2021, capturing the effects of the COVID-19 pandemic which provide additional insights on the financial state of Malaysian households and factors influencing the levels of financial capability as the country begins to recover from the impact of the pandemic. Selected key insights are highlighted in Diagram 1.

Diagram 1: Snapshot of FCI Survey 2021



Compared to 2018, Malaysians are now more confident with their financial knowledge, due to heightened awareness on financial decisions and assistance during the pandemic



Despite the wider adoption of digital financial services and products, digital financial literacy remains low. More than a third of the respondents shared their bank account passwords or details with close friends



Financial challenges from the pandemic have had a positive influence on longer-term financial planning behaviour, with more Malaysians placing importance on retirement planning and personal financial risk management



Short-term financial resilience improved slightly, potentially due to financial assistance during the pandemic. 47% (2018: 52%) of respondents face difficulties raising RM1,000 during an emergency



Despite greater awareness of insurance/takaful observed during the pandemic, interest in learning remains low with 1 in 3 respondents indicating no interest in learning about the subject



Withdrawals from retirement savings during the pandemic have severely affected confidence in long-term resilience. 27% (2018: 16%) of respondents are extremely or very worried about the adequacy of their savings for old age

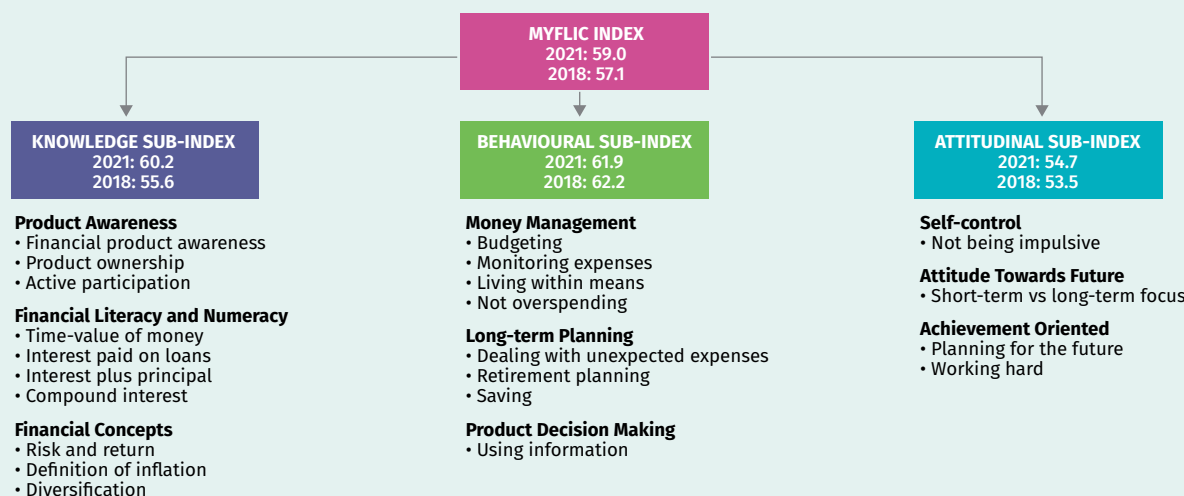
Source: Bank Negara Malaysia

Based on the 2021 survey, the MYFLIC index improved by 1.9 points to 59.0 (2018: 57.1), reflecting a significant increase in the financial knowledge score, and a better score on financial attitude (Diagram 2).

The increase in financial literacy and numeracy contributed most to the financial knowledge sub-index, particularly around the subject of interest and its effect on loan payments (2021: 72; 2018: 62). The implementation of various loan repayment assistance measures during the pandemic and related communications have been a key factor contributing to higher awareness and understanding of financial concepts. Malaysians also appear to have a higher understanding of financial concepts related to investments, namely around risks and returns (2021: 86; 2018: 77) and inflation (2021: 81; 2018: 75). However, this contrasts sharply with evidence of individuals actually applying these concepts effectively in practice. For instance, most (86%) respondents claim to understand that high returns would also mean high risks. However, more than half (53%) of respondents view an annual return of between 20% and 30% as low to medium returns associated with low to medium risks. In addition, only 43% can relate to the effect of inflation on their purchasing power.

¹ Previous versions were fielded in 2015 and 2018.

Diagram 2: Malaysia Financial Literacy and Capability (MYFLIC) Index 2021



Note: Main sample

- 3,007 responses collected based on the demographic structure of Malaysian population in 2010 census stratified in accordance with six criteria, namely geographical, urban/rural, ethnicities, age, gender and income level.
- Malaysians aged 15 years and above.
- Face-to-face and door-to-door, Computer Aided Personal Interviewing.

Source: Bank Negara Malaysia

The financial attitude sub-index scored marginally higher. This is consistent with the improvements in the level of financial knowledge, but also likely reflects greater uncertainty faced by Malaysians over their financial outlook due to the economic effects of the pandemic. In this respect, Malaysians are becoming more cautious, and are more inclined to save and set long-term financial goals to better prepare for future shocks. While this is a positive development, Malaysia’s financial attitude score remains substantially below global averages.² In particular, majority of Malaysians do not plan for their future before spending the money they received.

Of note, financial behaviours (as represented by the behavioural sub-index) have deteriorated despite improvements in financial knowledge and attitude. This is unsurprising given the erosion of financial buffers during this period which has made managing day-to-day expenses and saving for the future more difficult. In addition, the substantial drawdown of retirement savings under special withdrawal schemes introduced by the Government to help households through the pandemic has also reduced the level of confidence in long-term retirement planning. Key observations from the three components of the MYFLIC Index are provided in Table 1.

Table 1: Key Observations on Financial Literacy and Capability Among Malaysians

Financial Knowledge	<p>Measures basic knowledge on financial concepts and ability to apply numerical skills in financial situations</p> <ul style="list-style-type: none"> ↑ 81% understood the concept of inflation (2018: 75%). However, only 43% could relate the impact of rising prices to their purchasing power (2018: 38%) ↑ 72% understood that interest/profit needs to be paid on loans (2018: 62%) ↑ 86% are aware that an investment with a high return is likely to carry high risk (2018: 77%)
Financial Behaviour	<p>Measures the actions of consumers that shape financial situations and well-being</p> <ul style="list-style-type: none"> ↑ 47% claimed to have difficulty to raise RM1,000 in the event of emergency (2018: 52%) ↓ 54% do not face challenges in monitoring their expenses (2018: 67%) ↓ 69% are able to save for a rainy day (2018: 71%)
Financial Attitude	<p>Measures the attitudes of consumers that influence financial decisions and actions</p> <ul style="list-style-type: none"> ↓ 64% display self-control and discipline in managing their finances (2018: 67%) ↑ 51% focus on the future compared to “live for today” attitude (2018: 46%) ↑ 43% disagreed that money is there to be spent (2018: 39%), suggesting that more Malaysians prefer to plan before spending

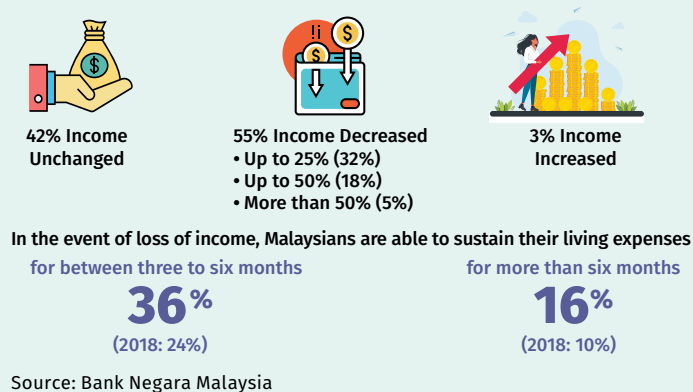
↑ Improvement ↓ Decline

Source: Bank Negara Malaysia

² Based on Organisation for Economic Co-operation and Development (OECD)/International Network for Financial Education (INFE)’s International Survey of Adult Financial Literacy (OECD/INFE Survey) 2020, financial attitude average score for OECD countries stood at 62, while overall average was 60.

About one in four respondents experienced large reductions (of above 25%) in income during the pandemic period. Notwithstanding this, more respondents claimed to be able to sustain living expenses for up to six months after losing their income. The higher short-term resilience could have been partly supported by the extensive financial assistance provided during the pandemic, such as loan repayment assistance, EPF special withdrawal schemes and cash transfers. However, this may be at the cost of long-term financial well-being, where significantly more Malaysians indicated that they are 'extremely/very worried' about being able to cover expenses in old age (2021: 27%; 2018: 16%).

Diagram 3: Household Income Affected During the Pandemic



Personal financial risk management

53% of Malaysians claim that they are able to raise emergency funds for unexpected expenses, an improvement from 47% in 2018. The level of awareness on insurance and takaful also improved markedly to 77% (2018: 64%). Of note, many more Malaysians (2021: 12%; 2018: 3%) were aware of insurance/takaful products offered under Perlindungan Tenang.³ The implementation of the Perlindungan Tenang Voucher initiative during the year contributed to higher awareness, as reflected by subscriptions for Perlindungan Tenang products which increased significantly to 1.6 million policies in 2021 (2020: 62,500 policies). The take up of life insurance/takaful protection correspondingly improved (2021: 23%; 2018: 17%), although it remains low with majority of respondents remaining uninsured against death, disability or sickness.⁴ Affordability continues to be a key challenge for the lower income household segments who have little to spare after meeting essential expenses, even with the expansion of affordable product offerings under Perlindungan Tenang. More generally, insurance/takaful is not seen as an important tool to manage personal financial risks, with one in three Malaysians indicating that they have no interest to learn about insurance/takaful (Diagram 4). This points to the need for better information to be provided on insurance/takaful to improve knowledge and address misconceptions. Further efforts to address market gaps through products, underwriting and distribution models that target the needs of the unserved and underserved household segments will also be critical.

High indebtedness among Malaysians

Respondents who claimed to have too much debt⁵ (2021: 30%; 2018: 32%) were mainly salaried workers who felt more confident in their income stream, leading to a greater tendency to over-commit to debt. Among those who agreed that their debt levels were too high,⁶ only 15% indicated that they would approach their banks for help, while 57% prefer seeking help from family members and 27% from close friends. About one in four from this group were not comfortable seeking help from anyone. This points to additional effort needed to de-stigmatise avenues for individuals to obtain debt management advice and assistance in order to encourage early interventions and avert more permanent financial consequences.

³ Perlindungan Tenang is a national initiative to provide access to basic, simple and affordable insurance and takaful protection. The initiative aims to expand the availability and quality of insurance and takaful solutions to meet the needs of the unserved and underserved segments in promoting their financial and social resilience.

⁴ We note that the Financial Sector Blueprint 2022-2026 indicated that 42% of adults own at least one life insurance policy or family takaful certificate. However, the level indicated by FCI Survey 2021 responses is lower, as some suggested that they may be unaware that they own insurance/takaful protection e.g. Mortgage Reducing Term Assurance/Takaful.

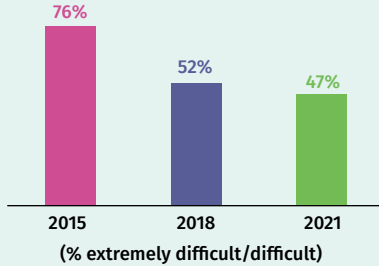
⁵ Respondents who 'Somewhat Agree', 'Agree' and 'Fully Agree' with the statement 'I have too much debt'.

⁶ Respondents who 'Agree' and 'Fully Agree' with the statement 'I have too much debt'.

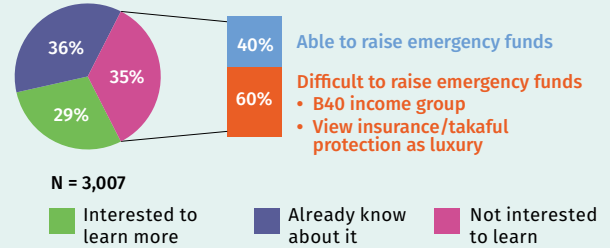
Diagram 4: Dealing with Unexpected Expenses



47% of Malaysians have difficulty to raise RM1,000 as emergency funds



35% of Malaysians are not interested to learn about life insurance/takaful and its benefits. Majority among the group are not able to raise RM1,000 emergency funds too



Source: Bank Negara Malaysia

Retirement planning

Malaysians are becoming more worried about being able to cover expenses in old age, leading to positive behavioural improvements observed in the planning for old age (Diagram 5). 47% of respondents cited EPF savings as the source of funds to cover their expenses in old age, making it the most common strategy for retirement planning. However, among older respondents (above 50 years old), greater reliance is being placed on other sources of income (specifically their children and family members) during retirement. This will add to financial commitments of families with dependent parents and relatives going forward, with important implications on future household resilience if provisions are not factored into current financial planning.

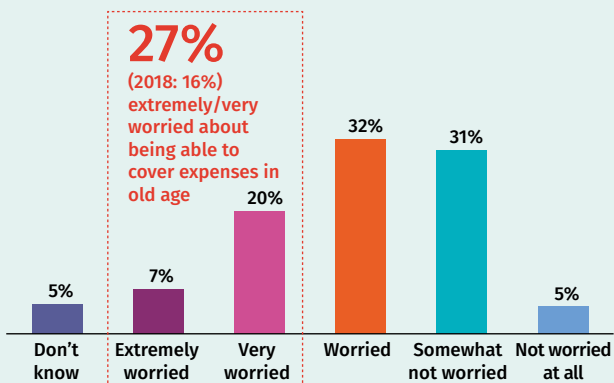
Diagram 5: Dealing with Retirement

As Malaysians draw closer to retirement (above 50 years old), they start to consider other options to fund their expenses during old age as they feel that the EPF retirement savings are insufficient



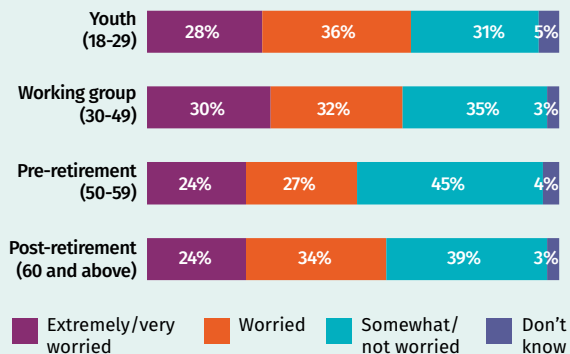
Strategies to Fund Household Expenses During Old Age

	All respondents	Respondents above 50 years old
Rely on EPF	47%	34%
Rely on children	14%	29%
Continue working	25%	25%
Financial support from family	16%	21%



Source: Bank Negara Malaysia

By age group



Digital financial literacy

Malaysians are fast adopting digitalisation, mainly used for in-store purchases, money transfers and online purchases. Despite the wider adoption of digital financial products and services,⁷ the survey found that the level of digital financial literacy is low and concerning (Diagram 6).⁸ More than a third of respondents (37%) are willing to share their passwords and/or personal identification number of bank accounts with close friends, which expose users to the risk of online fraud, including being used as a 'mule account' to facilitate fraud. In addition, 62% of respondents do not pay attention to the security of bank websites visited to perform online banking transactions. This could mislead them into providing their banking credentials such as their Internet banking username or password and credit card information through a fake website that enables scammers to use the information to commit fraud. Along with other ongoing measures by banks to ensure the security of online banking transactions, intensifying education and awareness efforts to improve the level of digital financial literacy - particularly around measures that one should take to prevent online banking fraud - will be critical to maintain confidence in the use of digital financial services.

Diagram 6: Knowledge Gaps on Digital Financial Literacy Among Malaysians



37% of Malaysians share passwords and/or PIN of bank accounts with close friends



Only 38% pay attention to the security of a website before making online transactions - https sites, safety logo or certificates



Only 11% regularly change password for online shopping and personal finance

Source: Bank Negara Malaysia

Conclusion

The significant income shocks and higher costs of living in the more recent period have brought financial matters into sharp focus among Malaysian households. This has led to improvements in financial knowledge and healthier financial attitudes. However, some households are presently challenged at the same time with financial realities (such as insufficient/volatile income and lower buffers) that may make it hard for them to change behaviours even if they have a desire to. The survey also points to potential effects from the support measures introduced during the pandemic and pre-existing conditions that if left unaddressed, could have longer term consequences for household resilience. Inadequate provisions for retirement and household attitudes towards debt management during stress could undermine future household resilience. The low level of digital financial literacy is a significant concern with the greater adoption of digital financial services. Individuals have a critical role in observing good cyber hygiene practices as a first line of defence against fraud and scams.

Findings from the FCI Survey 2021 provide valuable input to the implementation of the National Strategy for Financial Literacy 2019-2023.⁹ Gains observed in financial knowledge and attitudes present an important opportunity for the Financial Education Network (FEN) to further intensify initiatives that can help individuals plan for and make lasting behavioural changes. To this end, the Bank as a FEN member, along with other members, partners and stakeholders, will continue to provide effective tools and resources to help Malaysians take charge of their personal finances, including free online resources that are available at <https://www.fenetwork.my/>.

⁷ Based on usage for mobile banking, internet banking, payment card and mobile payment.

⁸ Follow-up survey on Digital Financial Literacy conducted following FCI Survey 2021, with 1,000 sample collected nationwide.

⁹ National Strategy for Financial Literacy 2019-2023 is a five-year plan developed by Financial Education Network to elevate the financial literacy and well-being of Malaysians.

OPERATIONAL RISK

Financial institutions remained operationally resilient despite challenges

Financial institutions remained operationally resilient, with no major system-wide operational disruptions in the first half of 2022. However, larger operational risk losses were reported by banks in the first half of 2022 (RM374.2 million; 1H 2021: RM118.1 million). This corresponded with higher incidents of isolated external fraud, processing errors and online banking fraud events that were confined to individual financial institutions. While operational risk incidents are inevitable, they can create wider systemic risks if they are associated with common vulnerabilities across many financial institutions. These include, for example, vulnerabilities due to linkages to critical market infrastructure or concentrations in particular service providers. On the one hand, the wider adoption of technology in almost every aspect of the operations of financial institutions is reducing operational risks associated with manual processes. However, it has also increased the interconnectedness of financial institutions, leading to heightened systemic risks. To mitigate such risks, the Bank has over the years required financial institutions to strengthen their response to evolving cyber threats, improve the management of dependencies on third parties and enhance their capacity to recover from a range of operational incidents.

Accordingly, financial institutions have continued to increase their preparedness to respond to

operational disruptions and cyber-attacks. Having enhanced their Business Continuity Plans (BCPs) and Disaster Recovery Plans (DRPs) to incorporate the experience from managing the impact of the pandemic on their operations, financial institutions are testing these plans under simulated crisis scenarios. Following advisories issued by the Bank, financial institutions have also enhanced their internal policies and processes to swiftly respond to, and recover from, ransomware and cyber supply chain attacks. In June 2022, the Bank published an exposure draft on cloud technology risk assessments as a supplement to the Risk Management in Technology (RMiT) standards issued by the Bank. This provides guidance to financial institutions on the implementation of strong cloud design and controls to mitigate information security and business disruption risks as more financial institutions leverage cloud services in their operations (Table 1).

Financial institutions continue to increase their investments in information technology (IT) risk management controls, in line with the stringent RMiT standards. Annual overall IT expenditure by the industry this year is expected to reach RM5.6 billion⁴⁰ (2021: RM3.9 billion; 3-year CAGR: 11.6%). Close to 10% of this (RM494 million) is expected to be spent on cyber security (2021: RM322 million; 3-year CAGR: 22.8%) to:

- implement new security controls and bolster cyber response and recovery systems to cater for the rapid digitalisation of business processes, remote working and wider attack surfaces;
- commission independent third-party cyber security assessments; and
- train staff in IT and key oversight and control functions to manage emerging cyber risks.

Table 1: Cloud Services Adoption by Financial Institutions

Sector	Number of Financial Institutions		Adoption Rate (%)	
	2020	2021	2020	2021
Banking institutions	19	22	46	54
Insurers and takaful operators	23	25	64	69
Large e-money issuers and payment system operators	4	4	40	40

Note: Adoption rate refers to the number of financial institutions that have adopted cloud services as a percentage of total number of financial institutions in each sector.

Source: Bank Negara Malaysia

⁴⁰ Total estimated IT expenses incurred by local banks, insurers and payment operators (excluding staff salaries).

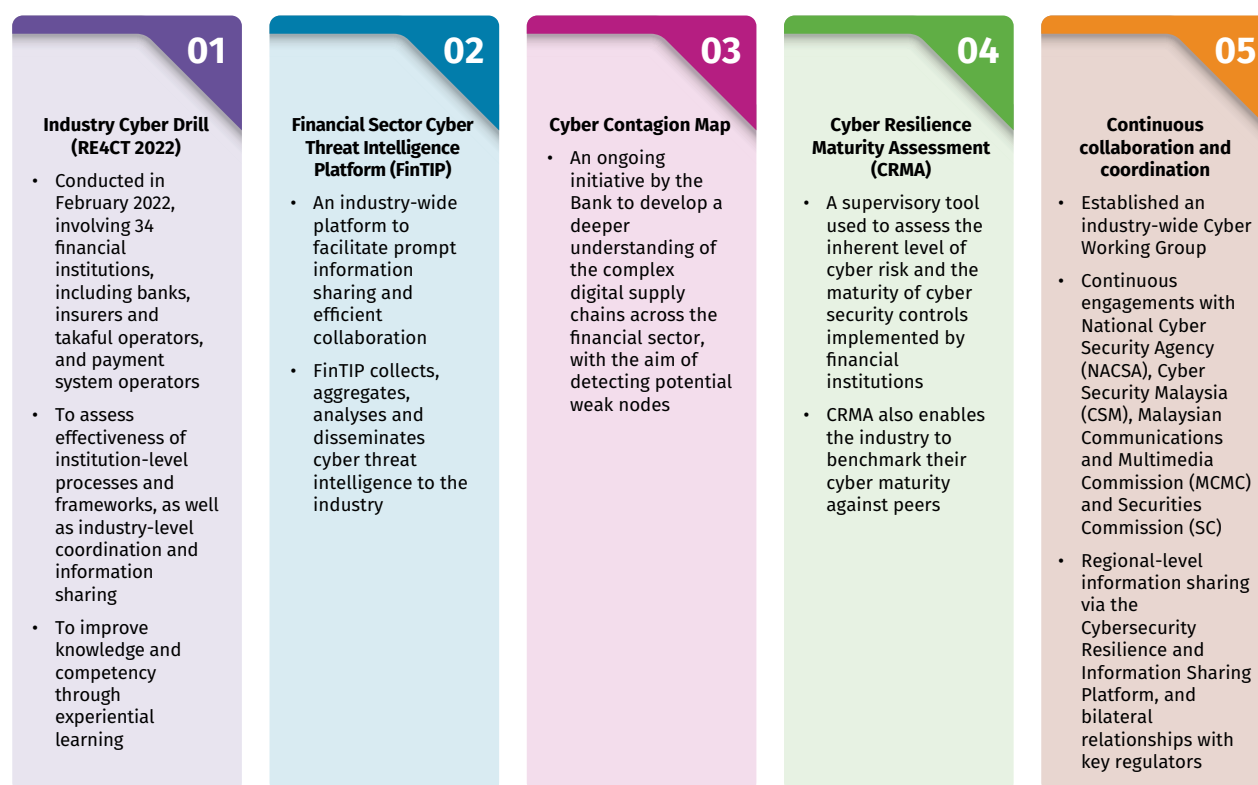
The industry has also increased its cyber security-focused IT workforce by 15% between 2020 and 2022. A steady increase has been observed across all three lines of defence i.e., cyber security operations, cyber risk management, and cyber security audit. However, financial institutions continue to report considerable challenges in sourcing and retaining talent, with 10% of established cyber security positions remaining unfilled as of June 2022. This will continue to pose some risks in terms of the capacity of individual institutions to maintain stability in their control environment. This could also lead to potentially higher concentration risks if more institutions rely on third-party services to augment their internal capacity.

The Bank continues to work closely with the industry and other domestic and international stakeholders to identify and mitigate emerging cyber and technology risks. A particular focus of the Bank's risk assessments has been the potential threats arising from the industry's reliance on third-party service providers (TPSPs) to deliver critical business functions and essential services. Despite identified concentrations to several TPSPs, risks of systemic disruptions resulting from third-party failures are assessed to

be relatively low. This is premised on the logical and structural separations of key infrastructure, appropriate risk management controls over third-party services, as well as credible contingency plans and workaround solutions established by financial institutions in the event of a failure of a TPSP.

Financial institutions have so far also remained operationally resilient despite the discovery of critical software vulnerabilities that have been associated with foreign state actors. This has been critically supported by the ongoing cyber fortification efforts and proactive information sharing between the Bank and industry (Diagram 1). An industry-level cyber drill exercise coordinated by the Bank in February 2022 further indicated a high level of readiness in the industry to respond to a systemic cyber-attack. Notably, financial institutions demonstrated the ability to effectively execute their cyber incident response plans, with reasonably effective arrangements for internal and external coordination of information flows. Opportunities were also identified to further improve and enhance crisis communications. This included, in particular, coordinated communications at the industry level to address public concerns during a systemic cyber-attack.

Diagram 1: Efforts Taken by the Bank to Enhance Cyber Resilience in the Industry



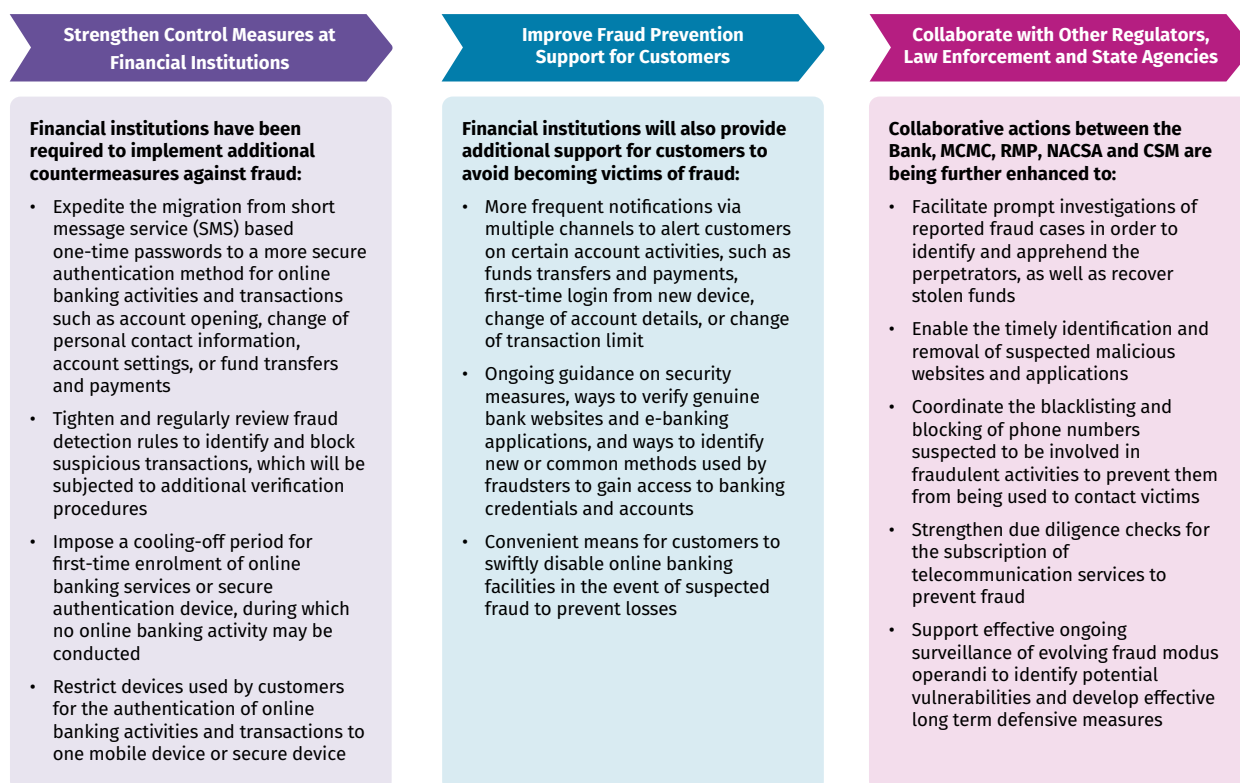
Source: Bank Negara Malaysia

Reports of online banking fraud have increased. In the first half of 2022, 9,735 cases of online banking fraud amounting to RM39.9 million were reported by customers of financial institutions, out of 1.85 billion online banking transactions⁴¹ conducted (or five cases per one million transactions; 1H 2021: three cases per one million transactions). While the proportion of fraudulent transactions remains small, online banking fraud is taken very seriously by the Bank as it has the potential to undermine public confidence and expose vulnerabilities that can be exploited to cause wider harm to users of financial services if left unaddressed. Aside from requiring financial institutions to implement additional countermeasures against online banking fraud, the Bank is also coordinating efforts with the industry, Royal Malaysia Police (RMP), and Malaysian Communications and Multimedia Commission (MCMC) to combat all kinds of financial fraud and scams, as well as to create greater public awareness on new fraud tactics (Diagram 2).

Payment and settlement systems remained operationally resilient

The Real-time Electronic Transfer of Funds and Securities System (RENTAS)⁴² and major retail payment systems (RPS) continued to maintain high system availability. An isolated operational disruption was experienced in January 2022 which affected the RENTAS SWIFT Alliance Access (SAA) channel. The incident was immediately and permanently resolved, limiting any impact on the smooth conduct of settlement transactions. There were no cyber incidents affecting RENTAS and major RPS in the first half of 2022. BCP arrangements that were put in place during the pandemic have been mostly maintained despite the transition to endemicity. This ensures that payment systems will continue to operate without disruptions in the event of any sporadic COVID-19 cases among critical staff. Such arrangements are also extended to critical TPSPs.

Diagram 2 : Initiatives Taken to Combat Online Banking Fraud



Note: MCMC refers to Malaysian Communications and Multimedia Commission, RMP refers to Royal Malaysia Police, NACSA refers to National Cyber Security Agency and CSM refers to Cyber Security Malaysia.

Source: Bank Negara Malaysia

⁴¹ Refers to number of internet banking and mobile banking financial transactions.

⁴² RENTAS is a real-time gross settlement system for interbank fund transfers, debt securities settlement and depository services for scripless debt securities.

Following an independent review conducted by external auditors on RENTAS and major RPS systems, the operators are in the process of implementing immediate and longer-term action plans to further enhance their cybersecurity capabilities. Proposed enhancements to the TPSP framework for RENTAS and major RPS systems in line with recommendations of the Committee on Payments and Market Infrastructures (CPMI)⁴³ will further reinforce a strong cybersecurity control environment within critical payment systems.

Credit transfers processed through the Retail Payments Platform (RPP) have continued to increase significantly, with an average annual growth rate of 254% and 211% in transaction volume and value, respectively, since its inception in December 2018. Plans are underway to include more real-time retail payment services on the RPP in addition to the DuitNow Transfer and DuitNow QR. The RPP has also successfully rolled out payment linkages with the

retail payment systems in Thailand and Indonesia to facilitate instant cross-border payments between the countries.

Given its increasing systemic importance as a critical payment infrastructure for real-time credit transfers in Malaysia, the Bank is taking additional measures to mitigate risks and protect the integrity of the RPP. The Bank would be formalising the designation of the RPP as a designated payment system under the Financial Services Act 2013 and Islamic Financial Services Act 2013. This will provide additional powers to the Bank to issue directives to participants of the RPP, and if necessary, assume control of the operations of RPP to ensure its ongoing stability and reliability. In addition, PayNet, as the operator of the RPP, is working with financial institutions to operationalise an enhanced collateralisation mechanism for deferred net settlements which will serve to reduce credit and settlement risks for real-time retail payment transactions.

⁴³ 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.