This article affirms that risks to financial stability posed by household indebtedness remain manageable despite the existence of pockets of risks. At a more granular level, this study reveals that (i) individual borrowers earning more than RM3,000 per month have sufficient financial buffers; and (ii) individual borrowers are more likely to be in a negative financial margin position if they earn less than RM5,000 per month and have a debt service ratio level of above 60%. Notwithstanding this, banks continue to have sufficient capital buffers to withstand potential losses arising from the household sector, even under severe macroeconomic and financial shocks.

Indebted to Debt: An Assessment of Debt Levels and Financial Buffers of Households

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Indebted to Debt: An Assessment of Debt Levels and Financial Buffers of Households

Malaysia's household debt growth has been moderating for seven consecutive years to 4.9% as at end-2017 [2010: 14.2% (peak)]. This follows a series of measures implemented by the Government and the Bank since 2010, coupled with strengthened lending practices by both banks and major non-bank financial institutions (NBFIs). Risks associated with the accumulation of unsecured borrowings have also receded considerably with growth of personal loans moderating from a peak of 25.2% in 2008 to 2.5% in 2017. As a result, the ratio of household debt-to-GDP declined to 84.3% [2015: 89% (peak)]. More importantly, this deleveraging occurred without adversely affecting private consumption and economic growth. Despite these positive developments, the Bank remains vigilant towards attendant risks from household debt. Research has shown that the negative long-run effects on economic growth tend to intensify as the household debt-to-GDP ratio exceeds a certain threshold[1]. It is therefore worth dissecting household debt on a more granular level – by income group – to gain further insights on potential sources of vulnerability to facilitate better policymaking.

This study builds on last year's box article[2] which introduced the concept of financial margin by various income and debt service ratio[3] (DSR) levels. The assessment is now expanded by taking into account households' liquid financial assets. This contributes to a more complete understanding of debt sustainability which can only be fully appreciated with an analysis of the other side of the household balance sheet – the asset position.

The Bank's earlier study concluded that individual borrowers are more likely to have negative financial margin if they (i) earn less than RM3,000 per month; and/or (ii) have a DSR level of above 60%.

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[1] Lombardi et. al., 2017 (BIS Working Paper) concluded that economic growth will be affected if the household debt-to-GDP ratio is above 80%. This paper only captures financing extended solely by the banking system as total household debt. Excluding NBFIs, Malaysia's household debt-to-GDP ratio stood at 69.3% of GDP, lower than the threshold identified in this paper.
[2] 'Looking Beyond Headline Household Debt Statistics', Financial Stability and Payment Systems Report 2016, Page 41 - 46.
[3] The ratio of total monthly bank and non-bank debt obligations to monthly disposable income (net of statutory deductions).

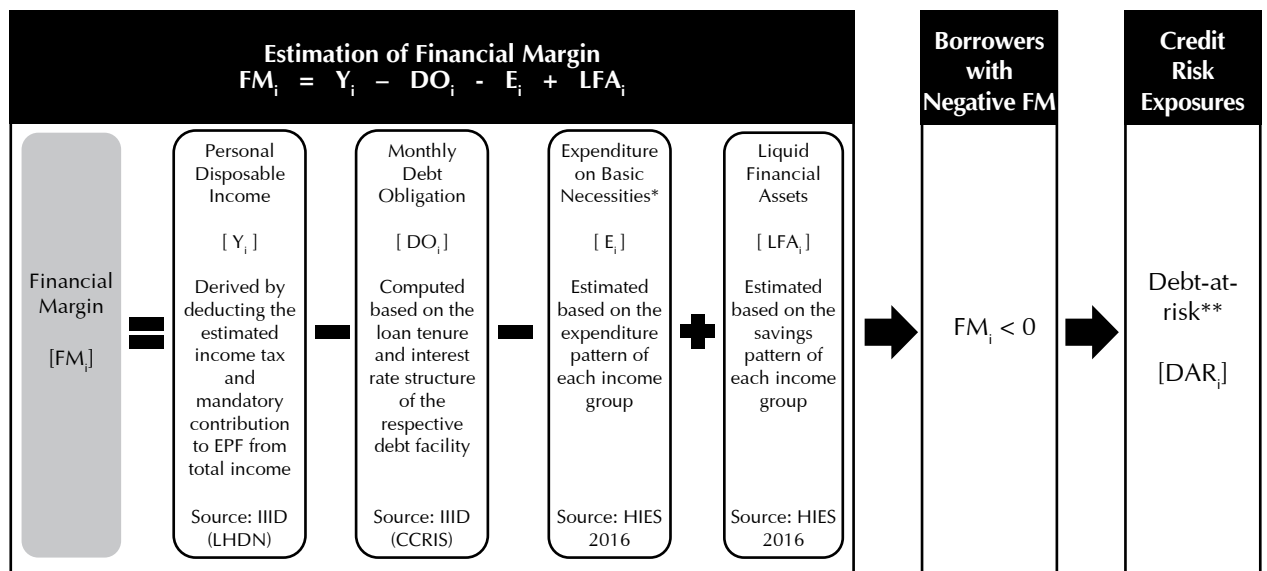In this article, the aim is to answer the following three questions:

i. Do individual borrowers, at various income levels, have enough financial buffers to meet their debt obligations in the event of a shock?

ii. Which income group is most susceptible to shocks, after accounting for available financial buffers?

iii. Can banks withstand the potential losses under severe shock scenarios?

The assessment will gauge the financial health of individual borrowers under simulated macroeconomic and financial shock scenarios. It is important to note that these shocks are based on conservative assumptions that are more severe than those experienced during past crises. The likelihood of these shocks occurring is therefore low. In assessing households' resilience to these shocks, we focus on the amount of financial buffers available to households in the form of liquid financial assets. This recognises

Financial Margin

The financial margin (FM) methodology is employed to assess whether households are able to withstand unforeseen circumstances such as shocks to income, cost of living and borrowing cost; and the impact of vulnerable borrowers on financial institutions.

Diagram 1: Measuring Credit Risk using the Financial Margin[4] Approach

Estimation of Financial Margin
$$FM_i = Y_i - DO_i - E_i + LFA_i$$

| Financial Margin $[FM_i]$ | = | Personal Disposable Income $[Y_i]$ Derived by deducting the estimated income tax and mandatory contribution to EPF from total income Source: IIID (LHDN) | − | Monthly Debt Obligation $[DO_i]$ Computed based on the loan tenure and interest rate structure of the respective debt facility Source: IIID (CCRIS) | − | Expenditure on Basic Necessities* $[E_i]$ Estimated based on the expenditure pattern of each income group Source: HIES 2016 | + | Liquid Financial Assets $[LFA_i]$ Estimated based on the savings pattern of each income group Source: HIES 2016 |

Borrowers with Negative FM

$FM_i < 0$

Credit Risk Exposures

Debt-at-risk**

$[DAR_i]$

i   individual borrower[5]
*   For this study, basic necessities are defined as: (i) food and non-achoholic beverages; (ii) housing rental and maintenance; (iii) water, electricity, gas and other fuels; (iv) transportation; (v) education; and (vi) healthcare
** The proportion of debt of borrowers with negative FM to total household debt after taking into account the collateral value

Source: Bank Negara Malaysia, Inland Revenue Board of Malaysia (LHDN) and Department of Statistics, Malaysia

A borrower's FM is defined as his or her monthly disposable income and liquid financial assets, after deducting debt repayments and expenditure on basic necessities (Diagram 1). In the event of unexpected income and expenditure shocks, individual borrowers with negative FM would be the most vulnerable as they have a higher risk of defaulting on their debt. The debt-at-risk metric, derived from the FM methodology in turn measures the potential losses emanating from borrowers with negative FM, after taking into account collateral values[6].

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4   The financial margin is derived from the Integrated Income Indebtedness Database (IIID) which matches borrowings of individuals captured in the Central Credit Reference Information System (CCRIS) with their income information reported to the Inland Revenue Board of Malaysia. It covers close to two million individual records, representing about 6% and 13% of the Malaysian population and labour force, respectively.
5   The assessment is based on 'individual borrowers' instead of 'households' (as defined by the Department of Statistics, Malaysia).
6   This study only considers housing loans as having underlying collateral and imposes a 40% haircut on the collateral value in the event of a default. Other loans are assumed to have a loss given default of 100% (more stringent than the Bank's stress testing framework).

the ease with which these assets can be readily tapped to repay debt obligations and/or cover for unforeseen circumstances (e.g. medical emergencies or job retrenchments). The assessment also seeks to reveal the debt servicing capacity of the borrowers and how they respond to potential shocks, using the financial margin methodology.

Distribution of Household Debt and Assets[7] across Income Groups

The household balance sheet at the aggregate level is healthy. Household financial assets[8] and liquid financial assets (LFA) are 2.1 and 1.5 times of debt, respectively. However, analysis from a micro-level dataset provides more nuanced insights at different income levels, particularly for lower- and middle-income households.

The bulk (69%) of Malaysian household financial assets are made up of LFA, of which more than two-thirds are in deposits and unit trust funds (Chart 1). Across income groups (Chart 2), LFA are mostly held by individuals with monthly earnings of more than RM5,000 (71% of total LFA). Individuals earning less than RM3,000 per month held only 9% of total households' LFA.

Based on a conservative assumption that an individual borrower would only have sufficient financial buffers if his or her LFA is more than total debt[9], individuals with monthly earnings of more than RM3,000 are assessed to have adequate financial buffers (Chart 3). Only individuals with monthly earnings of less than RM3,000 have a LFA cover of less than one time (0.6 times) of their outstanding debt. This group of borrowers account for 20% of household debt, with a majority (56%) living in urban areas and one in five having a DSR of more than 60% (Diagram 2). Including housing wealth[10], however, total assets for this group would provide sufficient cover of their debt.

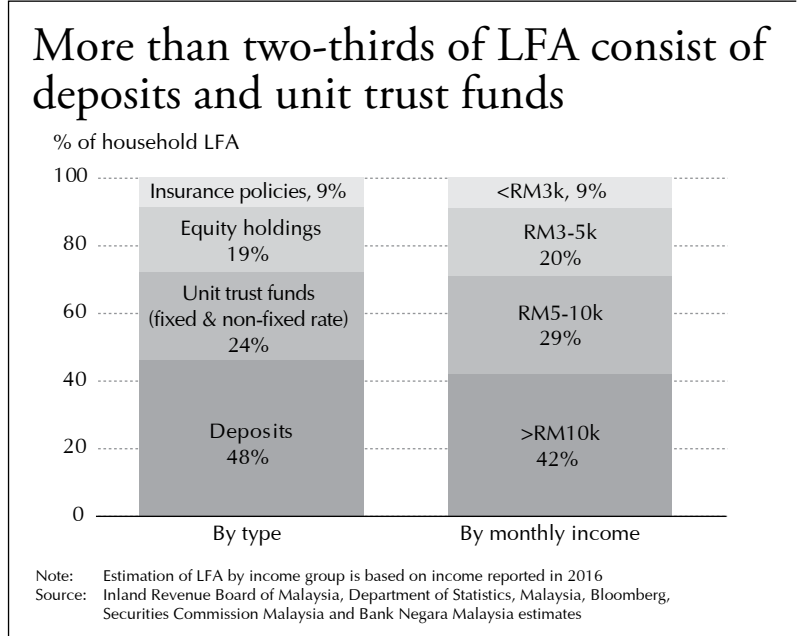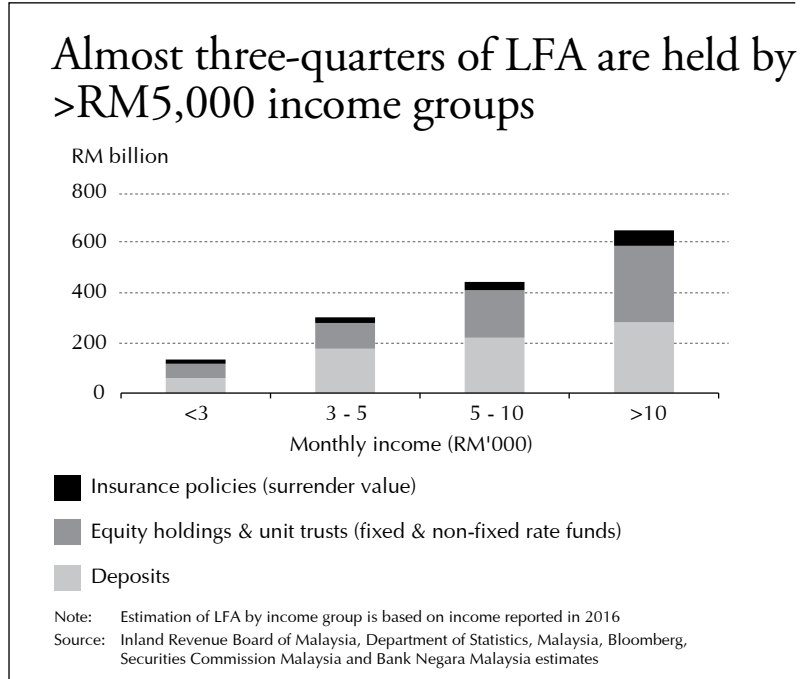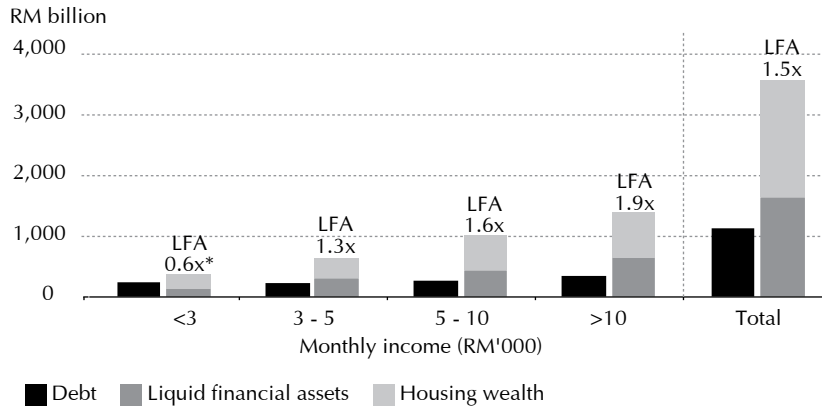*Chart 1: Composition of Liquid Financial Assets by Type and Income Group*

More than two-thirds of LFA consist of deposits and unit trust funds

% of household LFA

	By type	By monthly income
	Insurance policies, 9%	<RM3k, 9%
	Equity holdings 19%	RM3-5k 20%
	Unit trust funds (fixed & non-fixed rate) 24%	RM5-10k 29%
	Deposits 48%	>RM10k 42%

Note: Estimation of LFA by income group is based on income reported in 2016
Source: Inland Revenue Board of Malaysia, Department of Statistics, Malaysia, Bloomberg, Securities Commission Malaysia and Bank Negara Malaysia estimates

Chart 2: Composition of Liquid Financial Assets by Income Group

Almost three-quarters of LFA are held by >RM5,000 income groups

RM billion

Monthly income (RM'000)

■ Insurance policies (surrender value)
■ Equity holdings & unit trusts (fixed & non-fixed rate funds)
□ Deposits

Note: Estimation of LFA by income group is based on income reported in 2016
Source: Inland Revenue Board of Malaysia, Department of Statistics, Malaysia, Bloomberg, Securities Commission Malaysia and Bank Negara Malaysia estimates

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7   Please refer to the write-up on credit risk from household sector for the complete breakdown of household debt and assets.
8   Include both liquid (i.e. readily available within 3 months) and illiquid financial assets [Employee Provident Fund (EPF) contributions]. Although EPF contributions in Account 2 can be withdrawn for (i) repayment of housing and education loans; and/or (ii) medical purposes, this study assumes all EPF contributions as illiquid financial assets. With the inclusion of housing wealth, total assets cover about 4 times that of total debt.
9   For this analysis, debt and LFA of individual borrowers are assessed from the perspective of 'stock' levels. This is consistent with the Bank's approach in assessing debt and LFA at the aggregate level.
10 If the need arises, households could sell off their residential property to pay off debt. However, housing assets will take more time to liquidate.

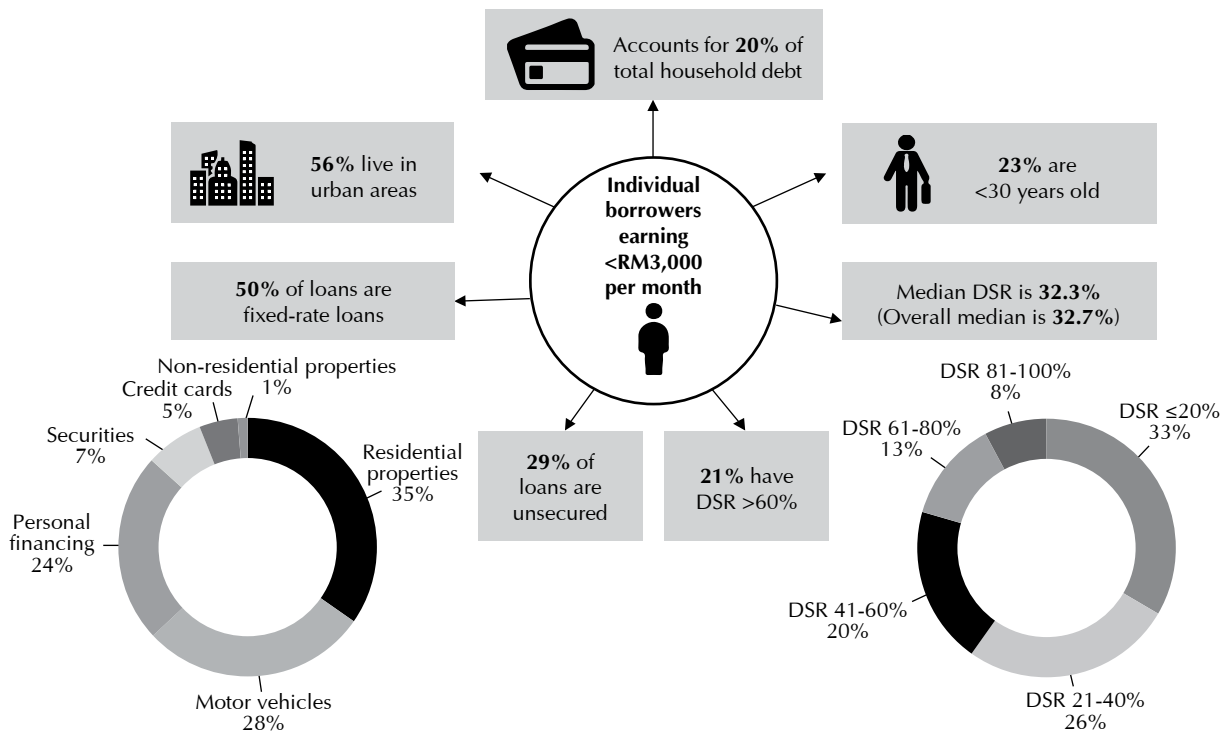*Chart 3: Debt, Liquid Financial Assets and Housing Wealth by Income Group*

Individuals with monthly earnings >RM3,000 have sufficient financial buffers

RM billion

```
4,000                                                        LFA
                                                            1.5x
3,000

                                                LFA
2,000                                           1.9x

                                    LFA
                         LFA        1.6x
1,000        LFA         1.3x
             0.6x*
   0
             <3          3 - 5      5 - 10      >10       Total
                      Monthly income (RM'000)
```

■ Debt   ■ Liquid financial assets   ■ Housing wealth

* Liquid financial assets cover 0.6 times of total debt

Note: Estimation of LFA, debt and housing wealth by income group are based on 2016 data whereas total outstanding is based on 2017 position
Source: Inland Revenue Board of Malaysia, Department of Statictics, Malaysia, National Property Information Centre, Securities Commission Malaysia,
        Bloomberg and Bank Negara Malaysia estimates

Diagram 2: Profile of Individual Borrowers Earning Less than RM3,000 per month

Accounts for **20%** of total household debt

56% live in urban areas

23% are <30 years old

50% of loans are fixed-rate loans

Individual borrowers earning <RM3,000 per month

Median DSR is **32.3%** (Overall median is **32.7%**)

29% of loans are unsecured

21% have DSR >60%

Non-residential properties 1%
Credit cards 5%
Securities 7%
Personal financing 24%
Residential properties 35%
Motor vehicles 28%

DSR 81-100% 8%
DSR 61-80% 13%
DSR ≤20% 33%
DSR 41-60% 20%
DSR 21-40% 26%

Source: Bank Negara Malaysia

Household Resilience under the Baseline Scenario[11]

A significant majority of borrowers have positive FM and therefore, are less vulnerable to unexpected income and expenditure shocks. Borrowers with negative FM represent about 6.5%[12,13] (Chart 4) of total borrowers and 12.8% of total household debt (RM139 billion). Most of these individuals have a DSR level of above 60% and earn less than RM5,000 (Chart 5). Following the implementation of the Responsible Financing Guideline[14] in 2012, financial institutions have been observed to adopt a DSR limit of 60% or lower for borrowers in the vulnerable income group (those with monthly earnings less than RM3,000), thus reducing the vulnerability of borrowers to unexpected shocks.

In assessing the potential impact on the financial institutions arising from these borrowers' exposures, a debt-at-risk metric (calculated as the proportion of debt of borrowers with negative FM to total household debt, adjusted for eligible collateral) is used. Under the baseline scenario, the debt-at-risk is estimated at 7.8% of total household debt (Chart 6) or RM84.6 billion, of which RM61.1 billion are held by banks while the rest are held by non-banks. By income group, a large portion of the debt-at-risk is from borrowers with monthly income of RM3,000-5,000, as this income group has the largest number of borrowers with negative FM. Borrowers in this income group have larger exposure to motor vehicle loans[15] (22%) and personal financing (30%) (Chart 7), and are within the younger age bracket (<40 years old). Findings from the Credit Counselling and Debt Management Agency (AKPK) through its Debt Management Programme (DMP) reveal an increasing trend of borrowers in this age group defaulting due to poor financial management and planning.

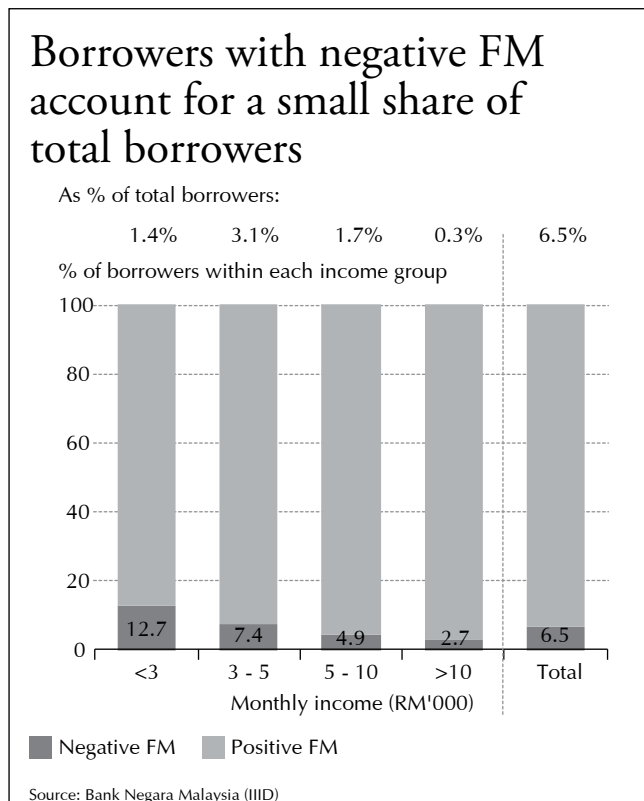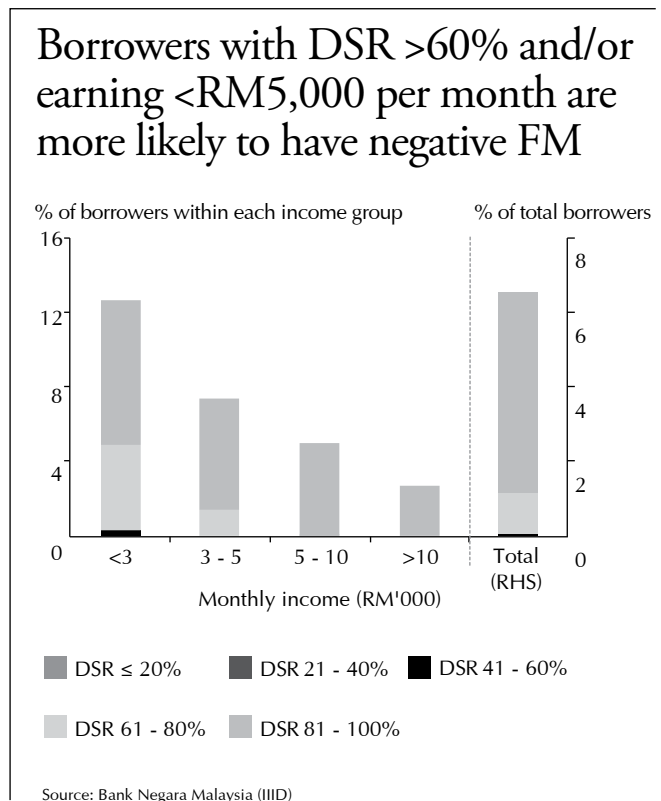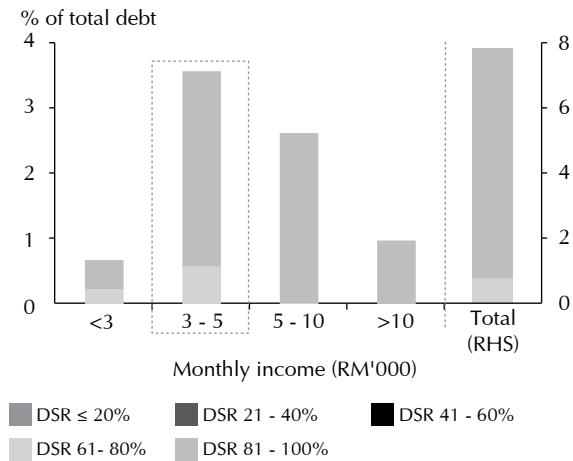### Chart 4: Borrowers with Negative FM by Income Group

Borrowers with negative FM account for a small share of total borrowers

As % of total borrowers:

| 1.4% | 3.1% | 1.7% | 0.3% | 6.5% |

% of borrowers within each income group

Negative FM   Positive FM

Source: Bank Negara Malaysia (IIID)

Chart 5: Borrowers with Negative FM by DSR and Income Group

Borrowers with DSR >60% and/or earning <RM5,000 per month are more likely to have negative FM

% of borrowers within each income group   % of total borrowers

DSR ≤ 20%   DSR 21 - 40%   DSR 41 - 60%
DSR 61 - 80%   DSR 81 - 100%

Source: Bank Negara Malaysia (IIID)

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[11] The baseline scenario reflects households' monthly income, expenditure, debt repayment obligations and liquid financial assets based on data as at 2016.
[12] This is equivalent to about 554,000 borrowers in Malaysia.
[13] The share of borrowers with negative FM and the proportion of their respective debt to total household debt are lower compared to FSPSR 2016 (15.4% and 30%, respectively) following the inclusion of LFA in the FM estimation.
[14] In 2013, this guideline was reissued as 'Policy Document on Responsible Financing'.
[15] This model assumes a loss given default of 100% for motor vehicle loans.

Chart 6: Debt-at-risk for Borrowers with Negative FM by DSR and Income Group
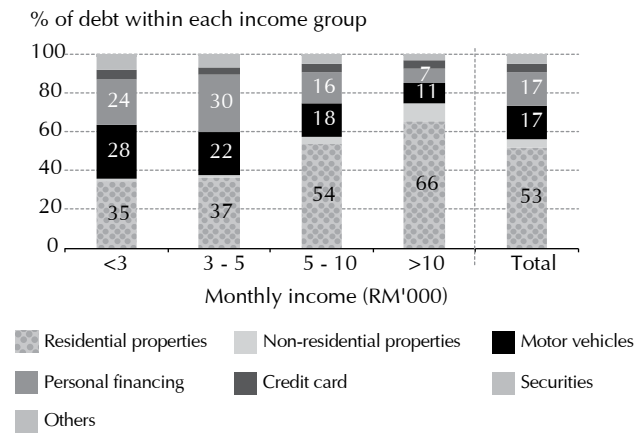
Debt-at-risk for borrowers with negative FM is estimated at 7.8% of total household debt

% of total debt

Monthly income (RM'000)

- DSR ≤ 20%
- DSR 21 - 40%
- DSR 41 - 60%
- DSR 61- 80%
- DSR 81 - 100%

Source: Bank Negara Malaysia (IIID)

Chart 7: Household Debt by Purpose and Income Group

Borrowers earning <RM5,000 per month have larger share of personal financing and vehicle loans

% of debt within each income group

Monthly income (RM'000)	<3	3 - 5	5 - 10	>10	Total
	24	30	16	7	17
	28	22	18	11	17
	35	37	54	66	53

- Residential properties
- Non-residential properties
- Motor vehicles
- Personal financing
- Credit card
- Securities
- Others

Source: Bank Negara Malaysia (IIID)

Household Resilience under Stressed Scenarios

In assessing borrowers' debt repayment capacity and financial resilience under stressed scenarios, three different shocks[16] were considered, namely (i) income; (ii) cost of living; and (iii) borrowing cost (Table 1).

The results of the overall stress tests reveal that borrowers are most affected by a decline in total income (Chart 8). A 10% decline in income would increase the share of borrowers with negative FM by 5.2 percentage points (ppt) from the baseline scenario to 11.7% of total borrowers. By income group, borrowers with negative FM increase the most for those with monthly earnings of RM3,000-5,000, to 5.5% of total borrowers (Chart 9) [Baseline scenario: 3.1% (Chart 4)].

Table 1

Shock Assumptions and Rationale

Shocks	Parameters (Magnitude)	Rationale
Income	Decline in total income (↓10%)	Larger than the decline in aggregate household disposable income of 8.7% during the Asian financial crisis in 1998
Cost of living	Increase in basic expenditure (↑20%)	Near tripling of the 2009 - 2016 CAGR of 7.3% for expenditure on basic necessities
Borrowing cost	Higher borrowing costs (↑50 basis points)	Based on the increase in the average lending rate following two consecutive increases in Overnight Policy Rate in 2006

Source: Department of Statistics, Malaysia, Oxford Economics and Bank Negara Malaysia estimates

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[16] These are the main channels that can affect borrowers' debt servicing capacity. While many research papers also considered an unemployment shock, this study indirectly assesses that impact via the decline in total income.

The impact of a higher cost of living is lower compared to an income shock. When expenditure rises by 20%, share of total borrowers with negative FM increases by 3.1 ppt from the baseline. This largely affects those living in urban areas who are subject to higher living expenses. In addition, borrowers aged between 30 and 40 years old are most affected due to relatively higher debt and expenditure obligations compared to other age groups. Over an individual's lifetime, debt levels typically peak during the middle-age years in line with debt acquired to smooth consumption or invest in real assets, in anticipation of higher future income. As a result, thinner financial margins limit the ability to absorb any sudden increase in the cost of living compared to other age groups. Notably, this age group also accounts for the largest share of participants in the AKPK's DMP (2017: 43.4% of total participants).

In contrast to the other shocks, borrowers are largely unaffected by a simulated 50 basis points hike in the lending rate. The share of borrowers with negative FM only increases by 0.7 ppt compared to the baseline scenario. Of significance, the effect on those earning less than RM3,000 per month is minimal as half of their total debt is in the form of fixed-rate financing.

*Chart 8: Pre- and Post-shock Scenarios — Share of Borrowers with Negative FM within Each Income Group*

Borrowers are most affected by income shocks
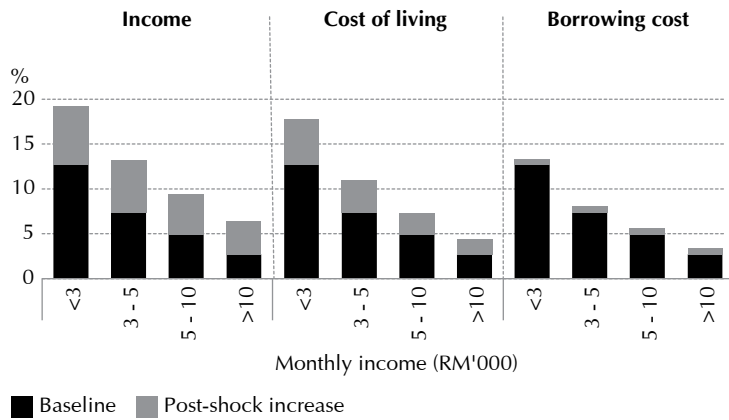
Source: Bank Negara Malaysia (IIID)

Chart 9: Pre- and Post-shock Scenarios — Share of Borrowers with Negative FM to Total Borrowers

Borrowers with monthly earnings of RM3,000-5,000 are most affected by shocks compared to other income groups
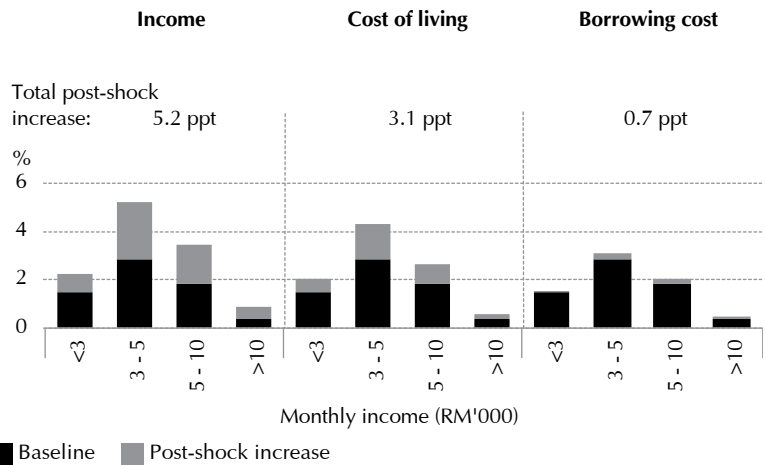
Source: Bank Negara Malaysia (IIID)

Capacity of the Banking System to Withstand Shocks

Banks continue to apply robust risk management practices in managing credit exposures to the household sector. Under the baseline scenario, asset quality remained strong with delinquency and impairment ratios for the overall household sector sustained at low levels of 1.4% and 1% of outstanding banking system loans, respectively, as at end-2017.

Under the stressed scenarios, the potential losses to the banking system from credit exposures to borrowers with negative FM due to income, cost of living and cost of borrowing shocks are estimated to be within the range of RM66 billion to RM103.8 billion (Chart 10). Despite the severity of these shocks, banks are able to withstand the potential losses, which remain within banks' total excess capital buffer of RM124.5 billion[17]. The analysis has not accounted for these shocks occurring simultaneously as the likelihood of this happening is assessed to be low. For example, in a scenario where income levels are declining, possibly due to an economic recession, it is unlikely that interest rates would increase during the period. Monetary policy in such circumstances would likely be accommodative to support economic recovery.
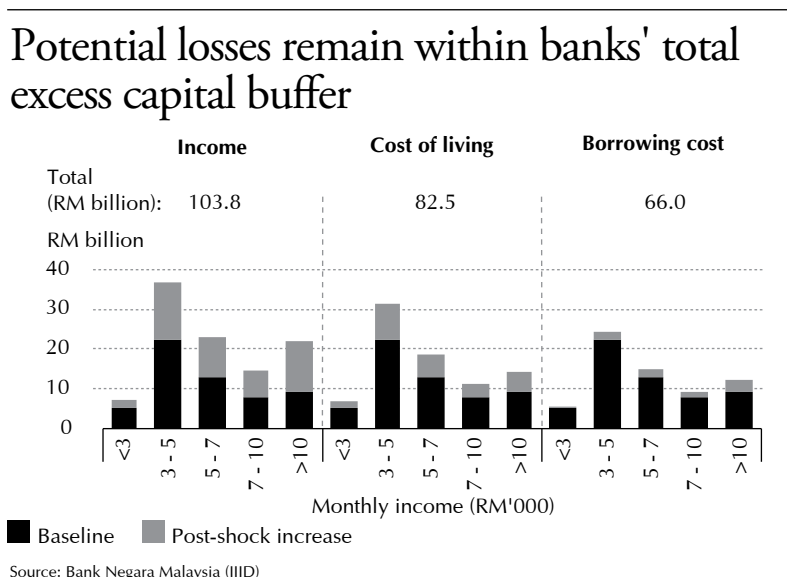
Policy Implications

As highlighted above, the risks to financial stability from banks' exposures to vulnerable borrowers are limited due to strong capital buffers. The existing macroprudential measures and strengthened risk management practices of banks further mitigate potential risks. The series of cross-cutting measures introduced since 2010 is depicted in Diagram 3.

The moderation in household debt growth since the introduction of these measures indicate that they have had the desired effects. Findings from this study affirm that the general DSR limit of 60% or below by banks and non-banks has played a key role in reducing risks from high household debt, especially for vulnerable borrowers. These insights also lend support to more targeted policy measures that take into account the different risk profiles of specific borrower groups. This can help minimise the unintended consequences of macroprudential policies such as reduced access to financing for eligible borrowers.

Although the measures have led to positive effects, continued vigilance along with more proactive and concerted efforts are still needed to improve household resilience, including:

Chart 10: Pre- and Post-shock Scenarios — Potential Losses to Banks

Potential losses remain within banks' total excess capital buffer

Source: Bank Negara Malaysia (IIID)

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[17] As at 2016.

Diagram 3: Policy Measures Implemented Since 2010

Macroprudential measures					
• Introduction of maximum 70% loan-to-value (LTV) on 3rd residential property loan and above	• Stricter credit card requirements • Introduction of maximum 60% LTV on residential property loan for non-individuals		• Introduction of maximum loan tenure: - Personal financing: 10 years - Residential property loans: 35 years - Car loans: 9 years		
Microprudential measures					
	• Higher risk weights for capital adequacy requirements	• Implementation of Guidelines on Responsible Financing*	• Implementation of Policy Document on Personal Financing	• Implementation of Policy Document on Risk-Informed Pricing	• Introduction of minimum collective impairment provisions and regulatory reserves of 1.2%
Fiscal and other measures					
• Re-introduction** of Real Property Gains Tax (RPGT) for properties sold within the first 5 years (5%)		• Increase in RPGT: - 1st - 2nd year: 10%; - 3rd - 5th year: 5%	• Increase in RPGT: - 1st - 2nd year: 15%; - 3rd - 5th year: 10% • Prohibition of developers' interest bearing scheme and related financing	• Increase in RPGT: - 1st - 3rd year: 30%; - 4th year: 20%; - 5th year: 15% • Establishment of the National Housing Council • Increase in the minimum house price for purchase by non-residents	• Increase supply of low-cost & affordable housing
2010	**2011**	**2012**	**2013**	**2014**	**2015**

* Reissued as policy document in 2013
** Between April 2007-2009, RPGT was 0%. Prior to April 2007, RPGT was based on a tiered-rate up to 30%

Source: Bank Negara Malaysia and Ministry of Finance, Malaysia

i. A more sustainable strategy towards housing the nation

Loans for the purchase of residential properties remain the largest component of household debt, representing 52% of total household loans. The significant contribution of housing loans towards household debt raises two key issues, namely, housing affordability and the necessity of owning a home. With a growing mismatch between prices of new house launches and households' actual affordability, imbalances in the housing market have worsened[18] in recent years. In certain parts of Malaysia, the median house price is as high as five times the annual median household income, rendering houses in these areas 'seriously unaffordable'[19]. This has led to households needing to borrow more for house purchases with the average size of housing loans approved increasing from RM180,275 to RM420,230 over the past 10 years. The Government is therefore pursuing a multi-pronged approach to deal with concerns on housing affordability, with an increase in the supply of affordable homes as a key priority. This would support efforts to achieve more sustainable household indebtedness levels.

At the same time, more could be done to ensure renting becomes a viable alternative for households. A conducive rental market would provide borrowers the option to rent rather than incur more substantial debt and expenditure burdens associated with owning a home. Recognising this, the Government in the Budget 2018 announced the formulation of a Residential Rental Act to promote a more vibrant rental market together with the establishment of a Tenancy Tribunal to safeguard the rights of both tenants and landlords. The Government has also introduced a tax exemption (50%) on income derived from the rental of residential property up to RM2,000 from 2018 until 2020, to spur the rental market.

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[18] 3rd Quarter 2017 Quarterly Bulletin, Page 26-32, Box Article 2: 'Imbalances in the Property Market,' Bank Negara Malaysia.
[19] Affordability thresholds are based on the Median Multiple approach by Demographia International (2017).

ii. Encouraging insurance and takaful coverage as a safety net

AKPK's experience finds that 18% of borrowers joined the DMP due to (i) loss of employment or death of the family breadwinner; or (ii) unexpected medical expenses (refer to box article on 'AKPK – Advancing Prudent Financial Behaviours' in Chapter 5). Not only are lower income groups vulnerable to such events but high-income borrowers with negative financial margin can also be severely impacted, as observed in this study.

On-going efforts by the Bank and the industry to make insurance and takaful policies more accessible could therefore strengthen households' resilience to shocks by providing financial relief in times of need. These efforts have an important impact given that 65% of the Malaysian population still do not own a life insurance or family takaful policy. The recently introduced Employment Insurance Scheme[20] - which acts as a safety net for retrenched employees – will also help contain the impact of a negative shock on household balance sheets.

iii. Promoting responsible lending behaviour, including among non-bank lenders

Household borrowings from NBFIs (representing about 20% of total household debt) were the main driver behind the rapid expansion in household debt observed between 2010 and 2013, mainly in the unsecured financing segment. These NBFIs typically lend to targeted borrowers from the lower income segment or with poor credit histories who may be unable to obtain financing from banks.

The rise in credit activities by NBFIs which include money lenders and credit co-operatives requires a review of existing oversight arrangements for these entities. The impending enactment of the Consumer Credit Act (CCA) will pave the way towards strengthening such arrangements with a focus on (i) promoting prudent and responsible lending practices among credit providers; (ii) safeguarding the wellbeing of consumers; and (iii) supporting more coordinated and consistent oversight arrangements for credit providers (refer to Chapter 5 for further details).

iv. Enhancing financial literacy among Malaysians

In promoting prudent and responsible borrowing behaviour, the importance of financial education should not be understated. Studies have shown that financial illiteracy is a key contributor to excessive indebtedness and is associated with increased incidence of default[21]. In Malaysia, while over 90% of consumers are 'banked', most of them lack the understanding of the concept of diversification, time value of money and compound interest[22]. This underscores the importance of on-going collaborative efforts between the Bank and other agencies in driving forward the financial education agenda, which includes a National Strategy for Financial Literacy. AKPK has also continued to play its role in nurturing financial responsibility and credit management skills through its various financial education modules and the POWER! Programme.

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[20] Administered by the Social Security Organisation (SOCSO), this scheme provides temporary financial assistance and training to retrenched workers in the private sector for up to six months. The contribution started in January 2018 while the payouts to eligible employees will begin in January 2019.

[21] For example, Gerardi, Goette and Meier (2010): 'Financial Literacy and Subprime Mortgage Delinquency: Evidence from a Survey Matched to Administrative Data', Federal Reserve of Atlanta Working Paper Series.

[22] Financial Stability and Payment Systems Report 2015, Page 102-103 and Financial Inclusion and Capability Survey, 2015, Bank Negara Malaysia.

Conclusion

This study supports the conclusion that risks to financial stability posed by household indebtedness remain manageable. Notwithstanding an increase in lower income borrowers with negative financial margins, banks continue to have sufficient capital buffers to withstand potential losses arising from the household sector under severe macroeconomic shocks.

Macroprudential measures implemented thus far have had an important role in preventing an unrestrained build-up of credit risks which could potentially pose systemic implications to the financial system. Improved underwriting practices amid strengthened loan affordability assessments by financial institutions have further contributed to a more sustainable pace of growth in household debt. These measures remain relevant amid sustained positive effects. While household debt levels remain high, tightening of measures is not warranted given the current continued moderation in household debt expansion, declining household debt-to-GDP ratio and prudent debt service ratio level amid steady economic growth. This is also important to avoid over-adjustments that may have adverse spill over effects to economic and financial stability. Measures to promote household resilience will also need to address more structural issues, including income, housing and public transportation, to improve affordability and to limit the accumulation of excessive debt by households.

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