

## Looking Beyond Headline Household Debt Statistics

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

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

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

### Distribution of Household Debt

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

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

<sup>1</sup> Bañbula et al (2015) and Faruqui (2008).

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

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

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

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

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

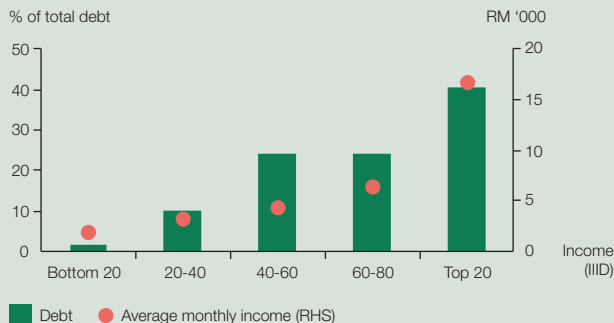
60-80 income group : Individuals earning RM5,001-8,000 per month

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

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

Chart 1

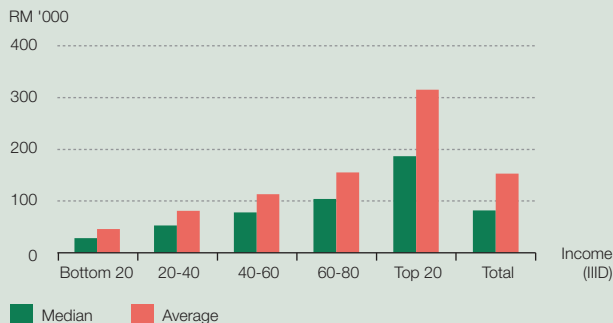
**Household Income and Distribution of Debt by Income**



Source: Bank Negara Malaysia

Chart 2

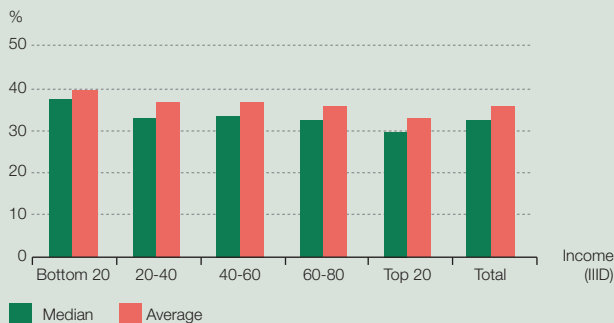
**Debt per Borrower by Income Group**



Source: Bank Negara Malaysia

Chart 3

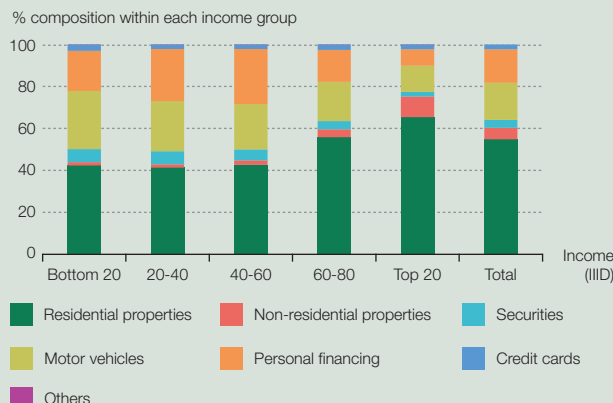
**Debt Service Ratio by Income Group**



Source: Bank Negara Malaysia

Chart 4

**Debt by Loan Purpose by Income Group**



Source: Bank Negara Malaysia

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

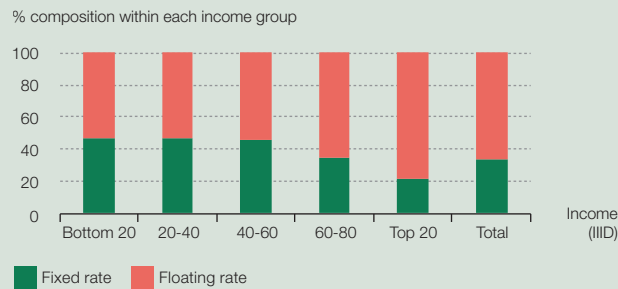
About two-thirds of total debt is acquired by those living in major employment centres<sup>5</sup>. Most of these borrowers are of the age between 30 and 40 years old in the 40-60 income group. As expected, a significant portion of debt is for the purchase of residential property. This is followed by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

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

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

Chart 5

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



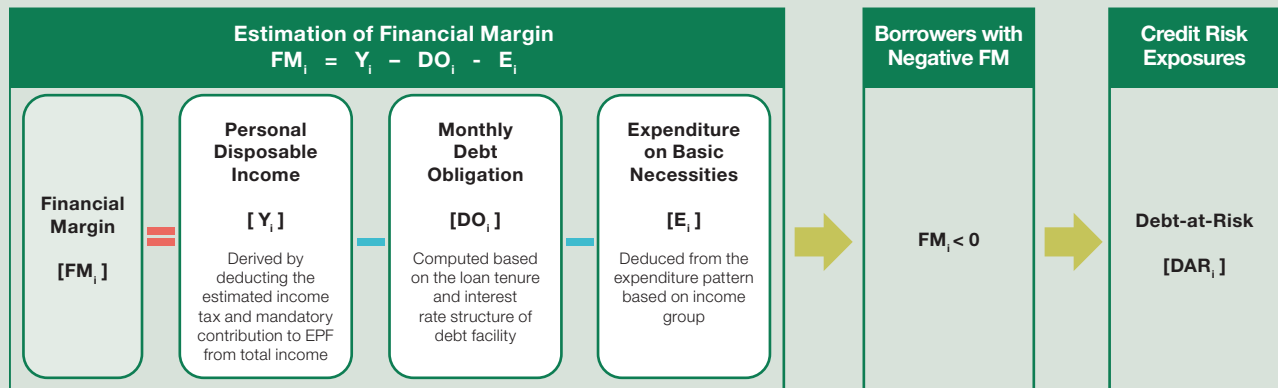
Source: Bank Negara Malaysia

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

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

Diagram 1

**Measuring Credit Risk Using Financial Margin Approach**



i individual borrower

Source: Bank Negara Malaysia and Department of Statistics, Malaysia

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

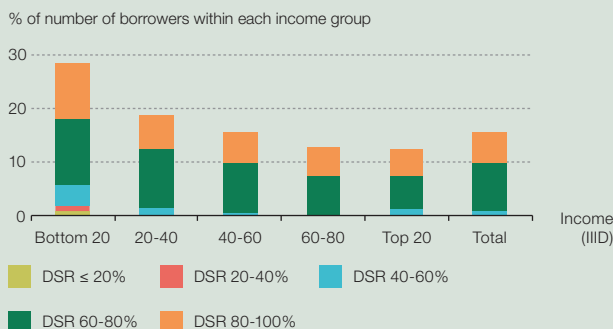
<sup>7</sup> Bilston et al (2015) and Albacete and Fessler (2010).

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

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

Chart 6

### Borrowers with Negative Financial Margin by Income Group

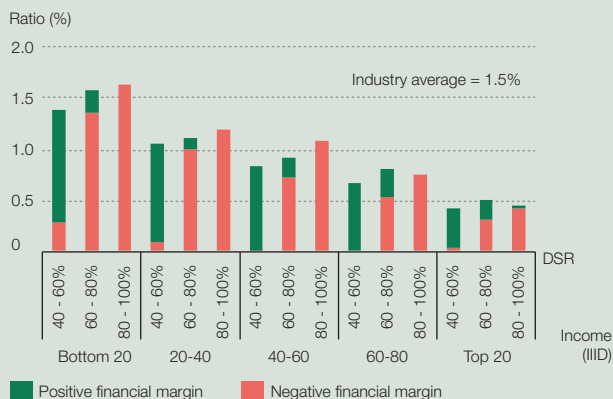


Source: Bank Negara Malaysia

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

Chart 7

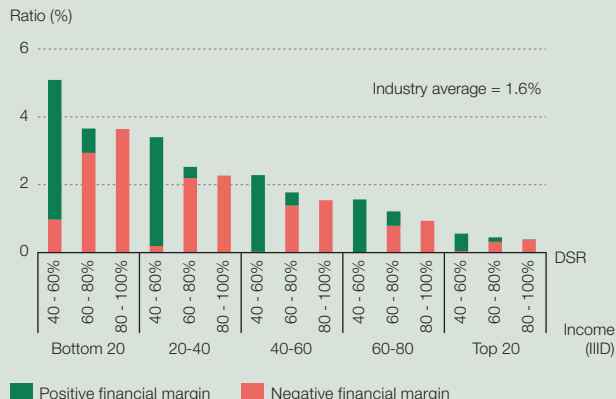
### Gross Delinquent Loans



Source: Bank Negara Malaysia

Chart 8

### Gross Impaired Loans

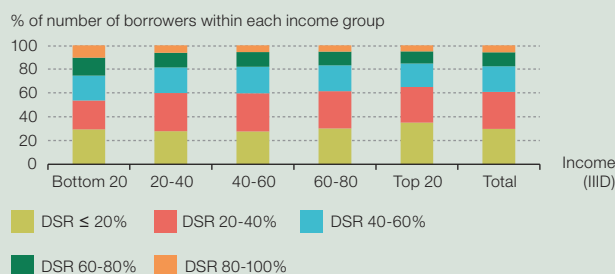


Source: Bank Negara Malaysia

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

Chart 9

### Debt Service Ratio for Borrowers by Income Group



Source: Bank Negara Malaysia

## Policy Implications

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

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

## References

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