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Citation

PHANG, Sock Yong. Comments on “Rich debt, poor debt: assessing household indebtedness and debt repayment capacity”. (2017). 169-173.

Available at: https://ink.library.smu.edu.sg/soe_research/2157

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Comments on “Rich debt, poor debt: assessing household indebtedness and debt repayment capacity”

Sock-Yong Phang¹

Summary

This paper assesses the system-wide impacts of Malaysia’s rising household debt. Malaysia’s household debt-to-GDP ratio (HDGR) increased from 76% in 2009 to 89% in 2016. This increase has raised concerns regarding the implications for household financial resilience and banking system stability. The paper uses a micro-level dataset that integrates income and debt to calculate financial margin (FM) and the probability of default (PD) for individuals at the baseline, and when subject to various shocks. This allows the estimation of loss to lenders in the event of default, and from there, the banking system’s debt-at-risk. The findings show that default is more likely for households with a debt service ratio of greater than 60%. For higher-income individuals, default is more likely at a debt service ratio of greater than 80%. After estimating potential losses for the banking sector, the authors conclude that it is sufficiently well capitalised to withstand default losses arising from unexpected macroeconomic and housing price shocks.

International perspectives

International comparisons of HDGR show a wide range of values.² Malaysia’s HDGR of 89% is relatively high by international standards; it is higher than the HDGRs for Japan, Hong Kong SAR, Greece and Singapore, but just below that of Portugal, Spain and the United States – countries which have recently experienced financial crises. At the same time, the financial systems of the countries with some of the highest HDGRs, ie Denmark, Switzerland, Australia, and Canada, weathered the Global Financial Crisis well, while countries at the bottom of the range with low HDGRs are there because of less developed financial sectors. Hence, HDGRs at the aggregate level do little to help inform on financial fragility. As such, the analyses provided by this study are important for assessing the resilience of Malaysia’s households and banking sector.

What are the determinants of a country’s HDGR? A review of the literature (Jappelli et al (2013)) finds the following factors help explain the level:

- Demand-side factors, which include population, urbanisation, demography, income, interest rates and inflation rates;

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² See BIS data at: www.theglobaleconomy.com/rankings/household_debt_gdp/

- Supply-side factors such as lenders' risk management practices, loan tenors available and competition amongst lenders;
- Institutional factors which include financial sector controls and regulations, microprudential and macroprudential regulation, bankruptcy regulation and judicial enforcement, information-sharing among lenders, home-ownership rates, housing finance systems and the generosity of pension/welfare systems; and
- Behavioural/cultural norms regarding debt and bankruptcy.

Jappelli et al (2013) find that, for the United States, the United Kingdom and European countries, relatively fast household debt growth does lead to larger increases in insolvency rates. The paper also highlights institutions as powerful determinants of household debt and default. Better judicial enforcement and information-sharing amongst lenders reduce lending risk and are associated with larger credit markets. Lending correlates with English legal origin of country. Bankruptcy procedures (and reforms when these take place) affect the sensitivity of insolvencies to household debt as well as the sensitivity to economic shocks.

Household debt and the real economy

A significant increase in a country's HDGR over time is likely to have real effects on the economy. As household debt is used to finance consumption as well as assets, it is helpful to study the impact of higher HDGR on aggregate consumption, investment, and particularly real estate investment. Trends in household debt to financial and non-financial asset ratios are also useful indicators to monitor. A study by Beck et al (2012) for 45 countries, using time series data from 1994 to 2005, finds that enterprise credit is positively associated with income per capita growth and with faster reductions in income inequality. However, household debt does not have the same positive impact.

Section IIIA of the paper provides a description of the factors responsible for the increase in household debt for Malaysia. It discusses demand side changes in population, demography, urbanisation, household income, and lower interest rates as contributing to the increase in household debt. On the supply side, financing schemes and the availability of longer tenor loans are briefly mentioned. It will be helpful to expand the discussion in this section to consider additional credit supply, institutional and behavioural factors. In particular,

- On the credit supply side – reasons for increased lending by banks and non-banks to households;
- Institutional factors – changes to bankruptcy laws or judicial processes; and
- Behavioural factors – changes in norms and attitudes towards debt and bankruptcy.

Linkage between household debt and housing market

The data show that mortgage debt is 50% of household debt – constituting the largest component of household debt. Malaysia has a high home-ownership rate – although there is considerable variation by urban locations (10% to 77%). Thirty nine per cent of the individuals in the sample have at least one housing loan. The increase in household debt can be partly attributed to the rising share of mortgage loans as this increased from 47% to 50% of total household debt between 2009 and 2016.

Drilling down to the type of loan that households take is important as default rates are different for different types of loan. Information on default rates by loan type in Malaysia would be helpful. The different default rates would be reflected in interest rate differentials for the different types of household loan. Whether mortgage loans are recourse loans in Malaysia would also affect default risk. Another institutional factor that lowers default rates would be how housing loans are financed, for both households as well as banks. Like Singapore, Malaysia has a provident fund system where savings can be used for making mortgage payments. Malaysia has also established secondary mortgage lending facilities to the banking system for making housing loans. There also exist Islamic finance housing mortgages. An assessment of how these institutional factors reduce household mortgage default risk and housing finance system fragility in Malaysia would be useful.³

Given these factors, the assumption of a 50% haircut on collateral value for loss-given-default could overestimate the loss from mortgage lending. With the clear and close links between household debt and housing market, central banks need to also assess the health of the housing market by monitoring housing market indicators and conditions.

As an extension to the paper, it may also be useful to analyse separately, perhaps for the more stretched cohorts within the sample, separate PDs for unsecured debt versus mortgages. Furthermore, the interest rates charged by banks on these two types of lending product would differ and the nature of borrowers who have more exposure to the one versus the other may in fact be different. Perhaps Bank Negara Malaysia (BNM) could analyse whether there are concentrations of potentially higher default loans at particular financial institutions.

Data and methodology

The paper uses a micro-level database for individuals compiled from a number of sources. This is a rich dataset of 2 million individual borrowers with the aggregate loan value accounting for 20% of household debt for 2014. In their analyses in Sections IIIB and IVB, the paper switches between using 'individuals' and 'households' in the text and for the charts, using the terms interchangeably. This was rather confusing and requires clarification.

The paper utilises an innovative approach of integrating different sources of data to calculate FM ($= Y - DO - E$). The data source for each of the component in the formula is different: Y is individual income obtained from the tax authority, DO is debt

³ See Phang (2013) for an overview of housing finance systems.

obligation from individual credit information from the central credit system, and E is expenditure data from the Household Expenditure Survey. This reliance on different sources to calculate FM presents challenges and raises a number of questions. Did the approach implicitly assume single-worker households? What is the average number of persons employed per household and what is the average household size for Malaysia? How were rental expenditures in the Household Expenditure Survey treated for homeowners?

It is stated that the methodology utilised follows closely that of the study for Australia by Bilston et al (2015). However, there are some key differences. The Bilston et al study uses household data rather than individual data, that is, the data for components of FM are from a household survey rather than integrating across different data sets. Specifically, household disposable income, rental payments (if any) and reported second mortgages are obtained from the survey. Household asset data are also available from the household survey. The trade-off, however, is that the sample size for household surveys is typically much smaller. The sample size for the Bilston study was 6,500 households.

Various approaches have been used for estimating PD. The FM approach used in this paper assigns a probability of one as long as FM is negative, and zero if FM is positive. It does not consider that the household might tap other liquid assets or wealth, or that there might be other working persons in households. As a result, it arrives at an estimate of risky net debt to the banking sector of RM 77.5 billion if the economy is subjected to multiple sources of shocks. The paper refers to the BNM macro stress test which uses an alternative definition of PD, ie accounts in arrears divided by total number of accounts. Under this alternative definition, which uses actual delinquent/default data, the risky net debt to banking sector is much lower at RM 39.1 billion.

Yet another approach that uses micro datasets is to perform discrete regression analyses for PD that take into account socio-economic characteristics of households. This approach incorporates household characteristics but also requires that the information be available in the dataset. Recent studies include Costa (2012) for Portugal, Fasianos et al (2014) for European countries and LaCour-Little and Zhang (2014) for US mortgages. Interestingly, a recent study by Yusof et al (2015) for Klang Valley uses regression analyses and found household financial fragility to be associated with wealth, income, financial knowledge, education, ethnicity, household size and the gender of borrower.

While the paper did not assess unemployment as a stressed scenario, it may be worth considering, as a side analysis, the impact on the PD of stressing the unemployment rate. Malaysia's unemployment rate has been relatively benign in the 2.5~3.5% range over the past few years. However, there may be merit in considering a more stressed scenario under the current global climate of structurally lower growth and hence greater propensity for recessionary periods.

Conclusion

Let me close by commending the paper's innovative approach of integrating multiple sources of big data on individuals to answer an important question on the impact of rising household debt. However, a number of factors (arising from the data used)

point to a likely overestimation of PD. This itself may provide a certain comfort level, especially when the banking system is found to be sufficiently well capitalised to withstand the simulated shocks, even with the likely overestimation. However, from a systemic perspective, the same shocks will also simultaneously affect the corporate debt sector. Extending this point further, while the focus is on the system-wide impact of household debt, there may be a need to conduct more analysis on how domestically systemically important financial institutions would individually fare under the stress scenarios considered. Hypothetically, if a major institution were overexposed to unsecured lending, a stress scenario more severely impacting the cost of borrowing in this higher interest rate product segment may create systemic shocks through the solvency problems encountered by this particular institution. For these various reasons, the findings need to be interpreted with care for the purposes of policymaking.

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