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**62<sup>nd</sup> ISI WORLD  
STATISTICS  
CONGRESS 2019**

18 – 23 August 2019, Kuala Lumpur

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# **STS 543**

## **Effectiveness of policies to address household indebtedness: Evidence from credit registry data in Malaysia**



**Muizz Aziz**  
**Bank Negara Malaysia**  
**19<sup>th</sup> August 2019, 2.00 pm – 3.40 pm**



# Outline

- 
- 1 Malaysia's experience with macroprudential policy
  - 2 Micro data for macro-financial insights
  - 3 Results
  - 4 Conclusion and policy implications

# Outline

1

## Malaysia's experience with macroprudential policy

- *Where we were, what we did, and what followed*

2

## Micro data for macro-financial insights

3

## Results

4

## Conclusion and policy implications

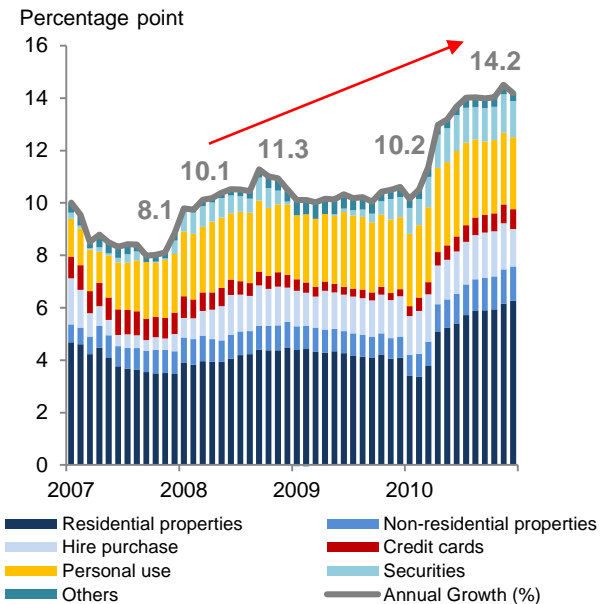
# Household debt began to register double-digit growth in 2008

Growth of household debt accelerated in 2008, reaching a peak of 14.2%...

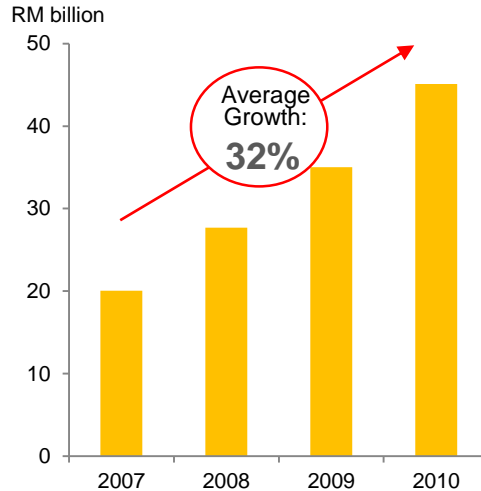
...driven by aggressive lending practices by major non-banks...

...and speculative activities in the housing market amid easy access to credit

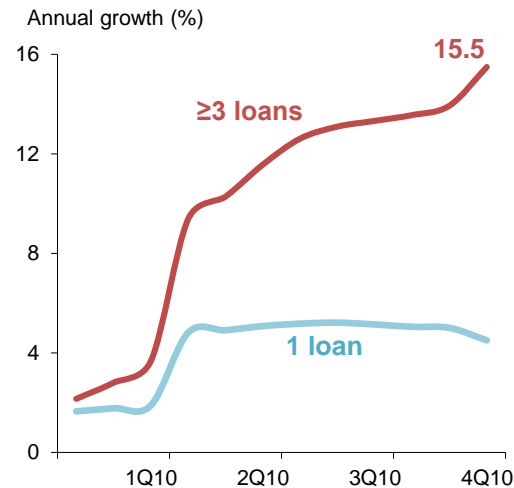
Contribution to Growth of Household Debt



Personal Financing Extended by NBFIs



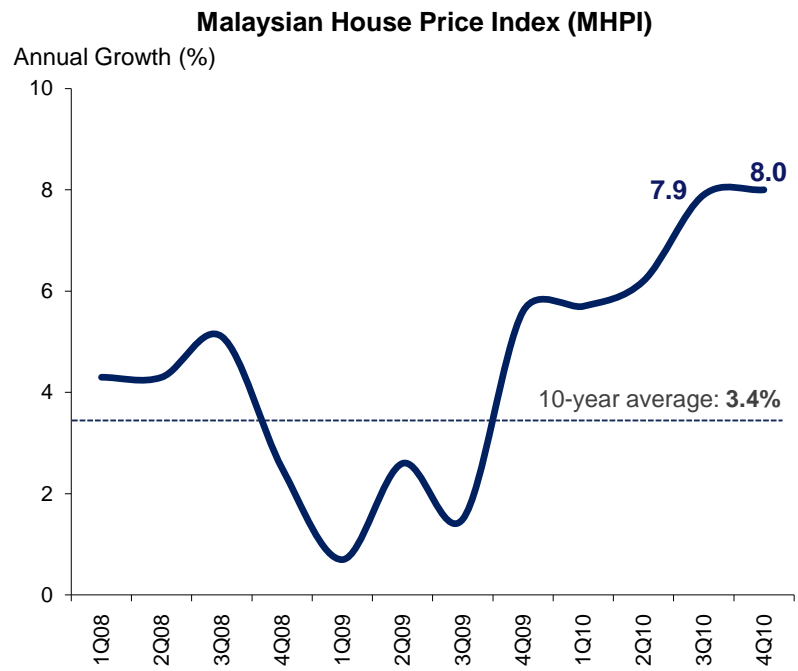
Number of Borrowers with Multiple Outstanding Housing Loans



Source: Bank Negara Malaysia

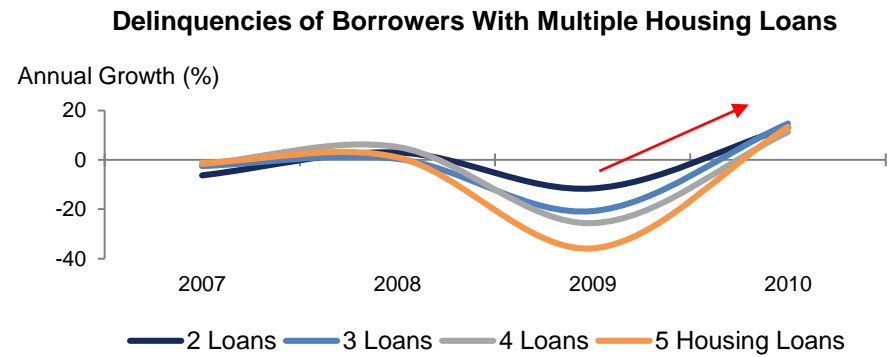
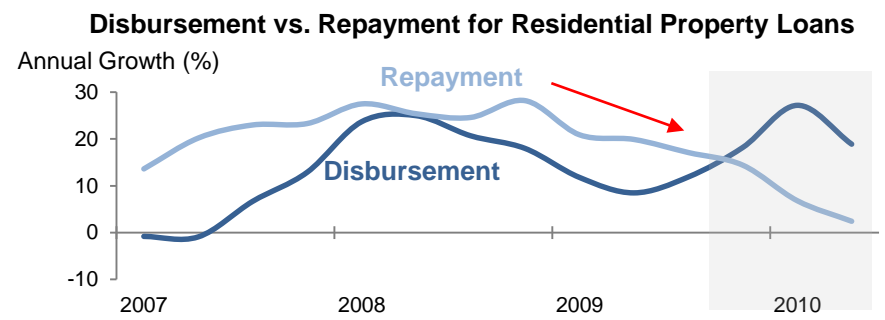
# Overall national house price growth outpaced 10-year average, with signs of increasing risks to financial stability

Overall national house price recorded an accelerated pace of growth...



Source: National Property Information Centre (NAPIC)

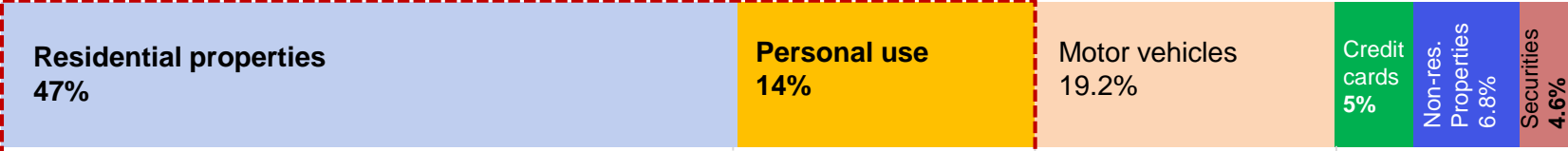
...with increasing vulnerabilities among borrowers with multiple residential property loans



Source: Bank Negara Malaysia

# These developments led to a series of targeted measures...

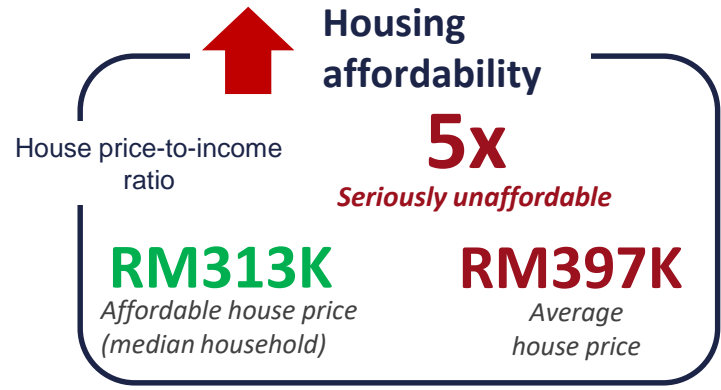
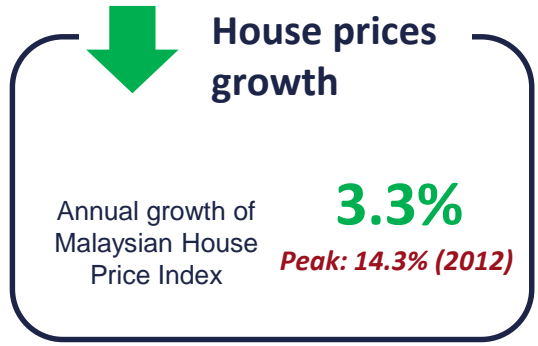
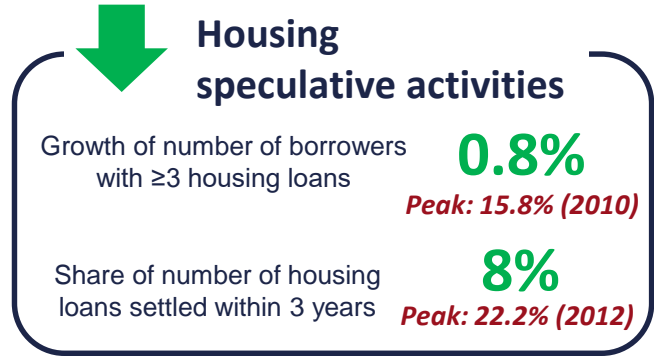
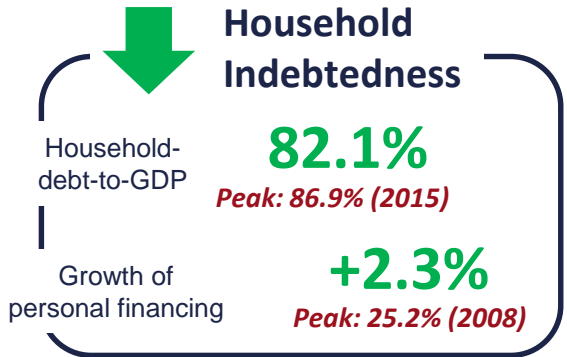
Composition of Household Debt by Purpose (as at end-2010):



Micro- and macro-prudential measures by debt type:

Year	Measures
2010	<ul style="list-style-type: none"> <li>Introduction of <b>maximum 70% LTV</b> on 3rd residential property loan and above</li> </ul>
2011	<ul style="list-style-type: none"> <li><b>Higher risk weights for capital adequacy requirements</b> for housing loans with LTV ratio &gt;90%</li> <li>Introduction of <b>maximum 60% LTV</b> on any residential property loan for non-individuals</li> </ul>
2012	<p>Implementation of <b>Policy Document on Responsible Financing</b></p> <ul style="list-style-type: none"> <li><b>Implicit DSR limit of 60%</b> for the low income borrowers</li> </ul>
2013	<ul style="list-style-type: none"> <li>Introduction of <b>maximum tenure of 35 years</b></li> <li><b>Prohibition of developers' interest bearing scheme</b> and related financing by financial institutions</li> </ul>

# ...which have yielded the desired outcomes



\*Based on Median Multiple methodology developed by Demographia International. Recommended by the World Bank as well as the United Nations.

# Outline

1

Malaysia's experience with macroprudential policy

2

**Micro data for macro-financial insights**

- *Research questions, data and empirical strategy*


3

Results






4

Conclusion and policy implications


# Borrower-level data from the credit registry were utilised

 **Central Credit Reference Information System (CCRIS)**

*Contains borrower-level information on:*

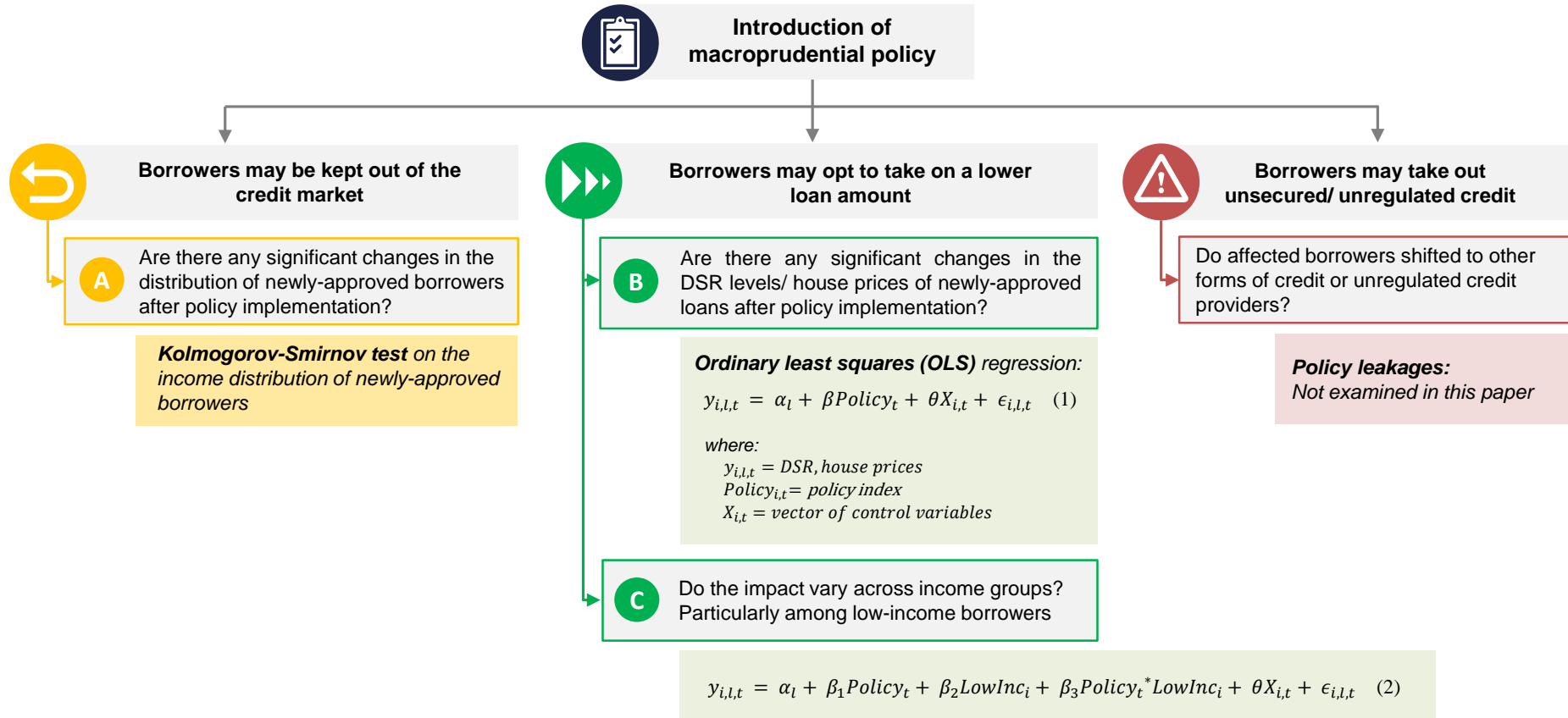
-  Age, Location, Sex, Marital status
-  Income
-  Loans (by purpose, lender etc.)
-  Financing rate, Tenure
-  Repayment (i.e. loan-in-arrears)



 **Data utilised for this study:**  
*Repeated cross-sectional data*

- 1** The population of individual borrowers with newly-approved housing/personal loan from 2009 to 2015 is selected
- 2** Income information of borrowers in certain years is estimated based on the average income growth over the same period
- 3** Random sample of 10,000 newly-approved housing/personal loan borrowers for each quarter is selected

# How effective were the policies in improving household indebtedness?



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**Results**

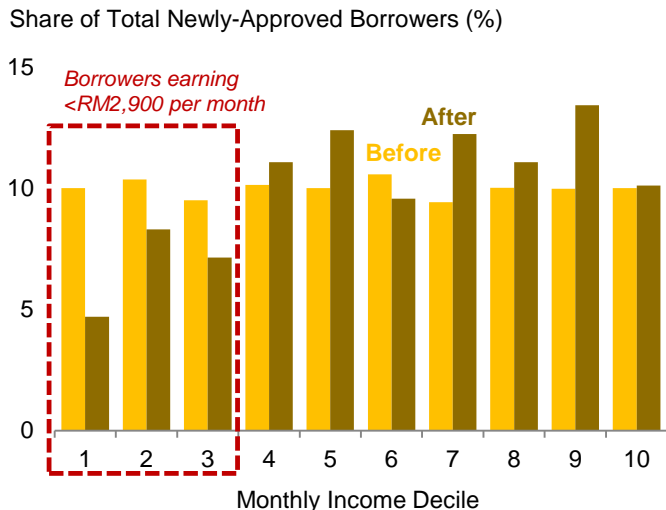
- *Key findings*

4

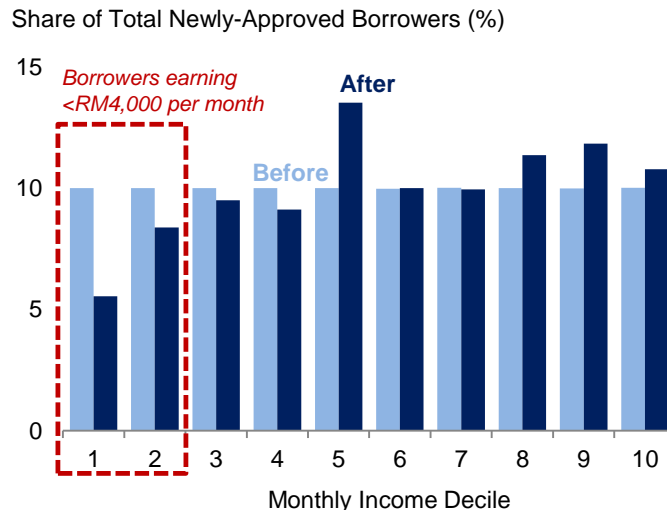
Conclusion and policy implications

# Decline in newly-approved loans to low-income borrowers, who are typically highly-leveraged

**Income Distribution for Newly-Approved Personal Financing Borrowers**



**Income Distribution for Newly-Approved Residential Property Loan Borrowers**



# PART B

## Policies are found to be effective in reducing DSR levels of personal loans...

Y = DSR	Eq 1a	Eq 1b	Eq 1c
Policy	-0.966***	-1.333***	-1.324***
State	Y	Y	Y
Income	Y	Y	Y
OPR	Y	Y	Y
Age	N	Y	Y
Tenure	N	N	Y

On average, an introduction of one additional policy is associated with **1.32 percentage points** reduction in DSR for personal financing.

Legend: \* p<.05; \*\* p<.01; \*\*\* p<.001

# PART C

## ...particularly among low-income borrowers

Y = DSR	Eq 2a	Eq 2b
Policy	-0.413*	-0.898**
Low Income	13.082***	7.079***
Interaction (Low Inc. & Policy)	-1.227***	-1.051***
State	Y	Y
Other controls	N	Y

The impact of policies on low-income borrowers is **larger** compared to average borrowers

Legend: \* p<.05; \*\* p<.01; \*\*\* p<.001

## However, the impact of policies on residential property loans was limited.....

Y = DSR	Eq 1a	Eq 1b
Policy	0.818***	0.730***
State	Y	Y
Income	Y	Y
OPR	Y	Y
Age	N	Y
Tenure	N	N
House price	N	N

Legend: \* p<.05; \*\* p<.01; \*\*\* p<.001

On average, DSR levels continue to increase after each addition policy implementation

## ...as the effectiveness is constrained by a simultaneous increase in house prices

Y = DSR	Eq 1c
Policy	-0.220***
State	Y
Income	Y
Age	Y
Tenure	Y
House price	Y

Legend: \* p<.05; \*\* p<.01; \*\*\* p<.001

The policies are found to be effective, only after controlling for the house prices purchased by borrowers

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1

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**Conclusion and future research**

- *Summary and what's next?*

# Summary

1

Policies are found to be generally effective in improving borrowers' DSR levels for personal financing

*- particularly among low-income borrowers who are typically highly leveraged*

2

The effectiveness of the policies in improving borrowers' DSR levels for residential property loan may be constrained by the simultaneous increase in house prices

## Limitations and areas for future research

Expanding the scope of research to include, among others, the impact of:

- the policies on the different forms (e.g. hire purchase and credit cards) and sources (e.g. banks and non-bank financial institutions) of credit extended to households
- other policies introduced including Basel III-related prudential requirements on indebtedness of households



THANK YOU