



# Rising Household Debt: Implications for Macroeconomic Stability

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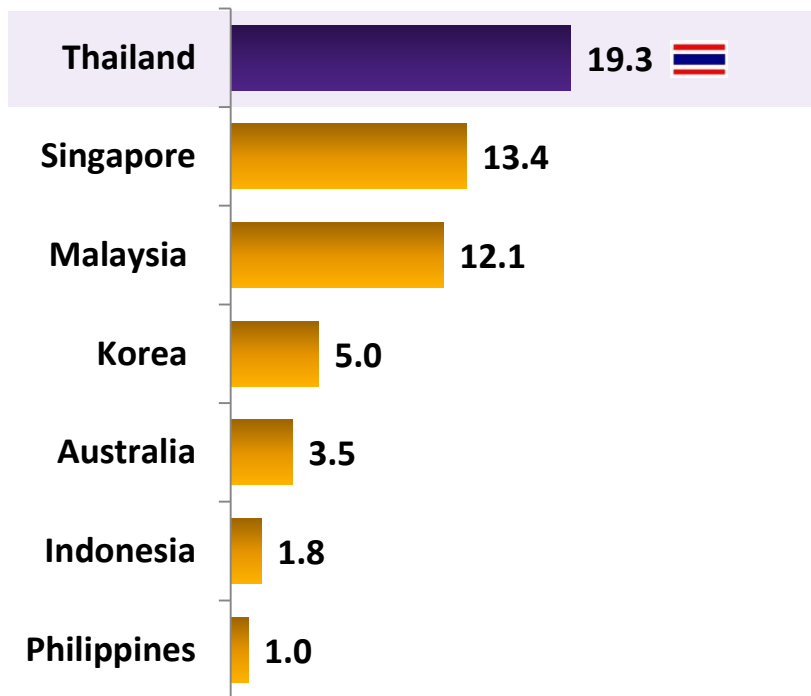
**Pasit Chotewattanakul**

Bank of Thailand

# Thailand's household debt has been rising fast and is now at the level of rich countries

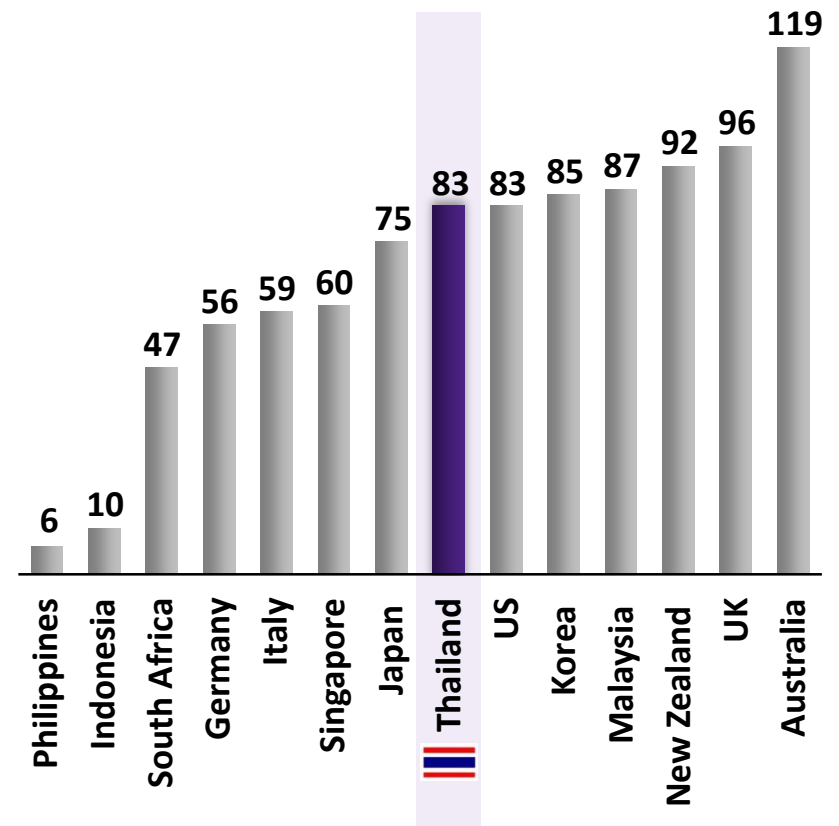
Thailand's household debt has been rising fastest in the region during the last 3 years..

Household debt in % of GDP, Change in percentage point (2010vs.2013)



..and it is currently at level similar to the rich countries

Household debt in % of GDP, 2013



Source: CEIC

# At household level, the high indebtedness among low-income households is particularly worrying



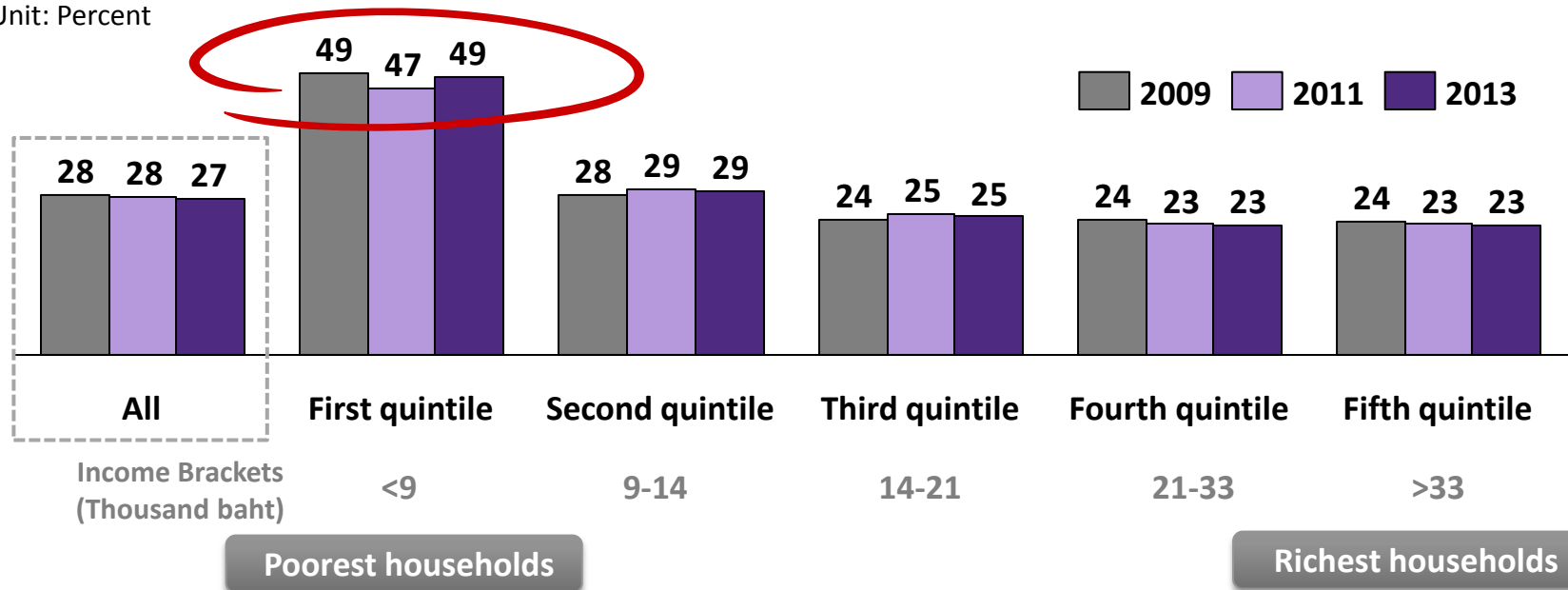
54% of Thai Households are Indebted

Debt Service Ratio (DSR)

$$\text{Debt Service Ratio (DSR)} = \frac{\text{Principal payment} + \text{Interest payment}}{\text{Income}}$$

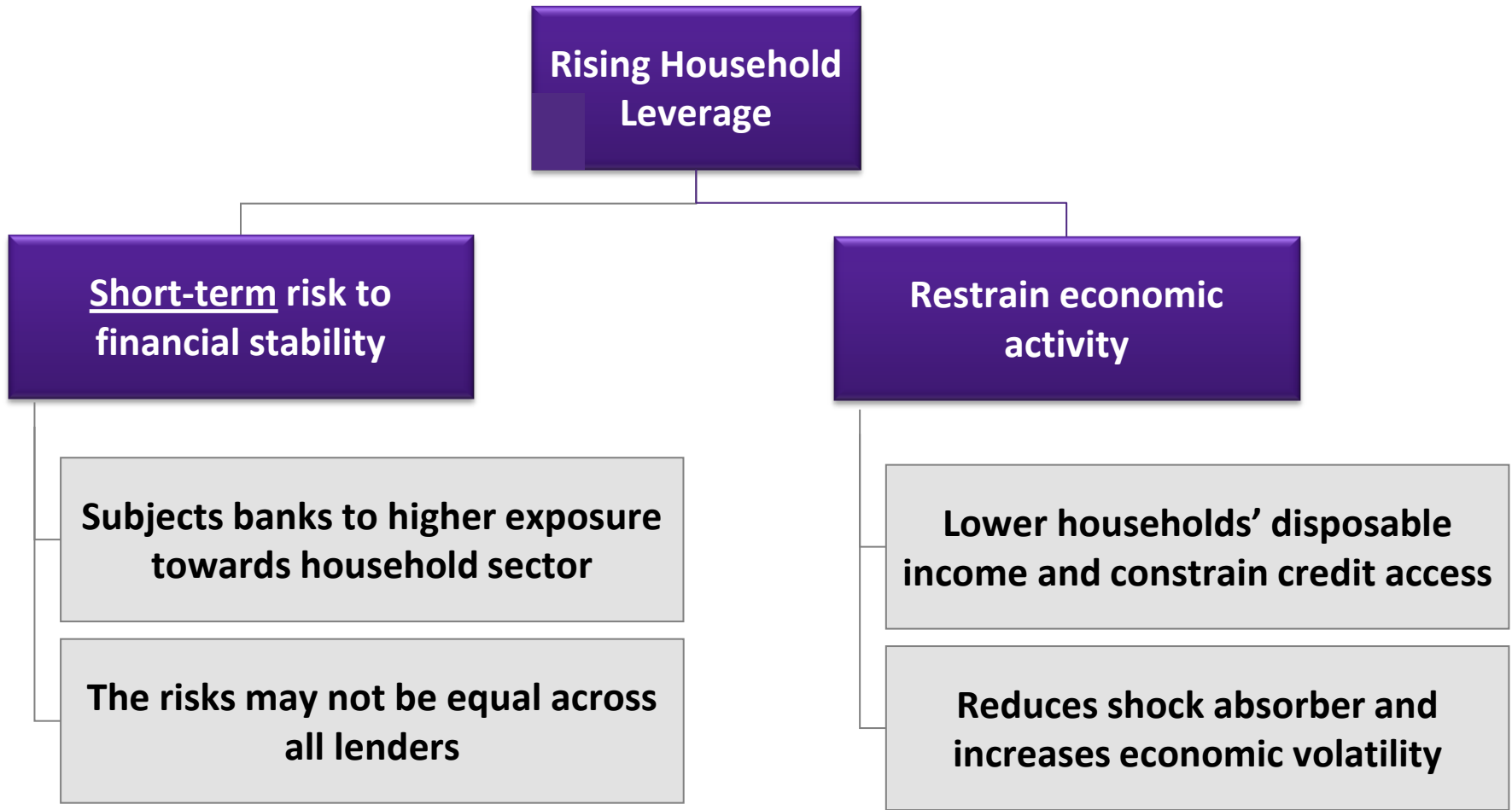
Average DSR by income quintiles, 2009-2013

Unit: Percent



3 Notes: Dropping observations with unreasonably high DSR values (DSR > 1000%). (9 such observations in the 2013 dataset)  
Source: SES

# How could the large build-up of household debt be dangerous to the economy?



# Research Questions, Model Strategies and Data Construction

Research Questions

Model Strategies

1

Does the rising debt increase short-term risk to financial stability?

Debt at Risk

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To what extent, does the debt surge hurt consumption?

Regression Analyses

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Model Strategies

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Debt at Risk

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To what extent, does the debt surge hurt consumption?

Regression Analyses

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How big is the threat associated with the potential rate hike?

Microsimulation

# Research Questions, Model Strategies and Data Construction

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Model Strategies

Data Construction

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Microsimulation

- **SES Surveys:** 2009, 2011 and 2013
- **BOT's supplemental survey to SES 2013Q1.** It contains questions about household's debt-servicing difficulties.
- **Best available resources on income and debt for Thailand's middle- and low-income households**
- **Allows focusing on the evolving structure of Thailand's household debt instead of cyclical effects**



# Agenda

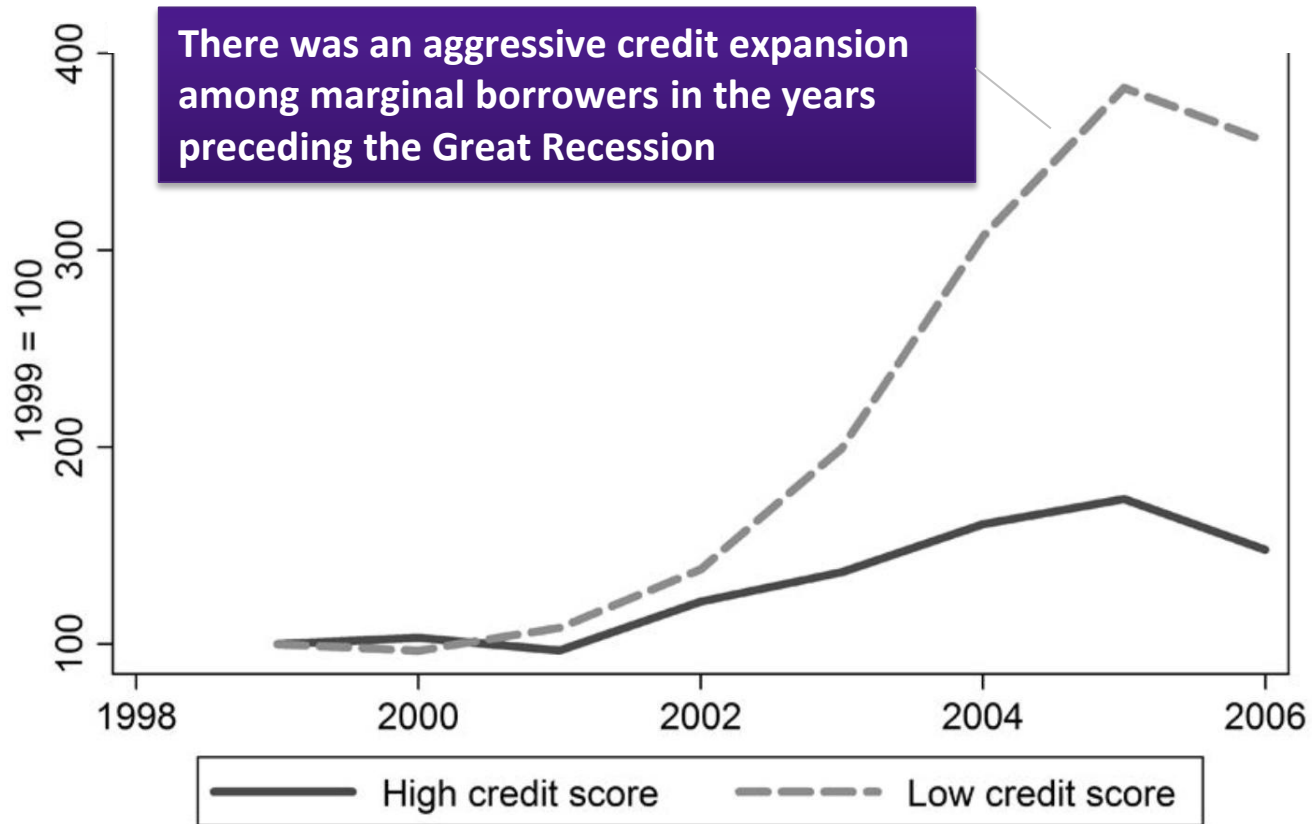
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- Does the rising debt increase short-term risk to financial stability?
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-

# US experience suggests that distribution of debt matters

## US mortgage credit growth for house purchase by credit-score zip codes, 1999-2006

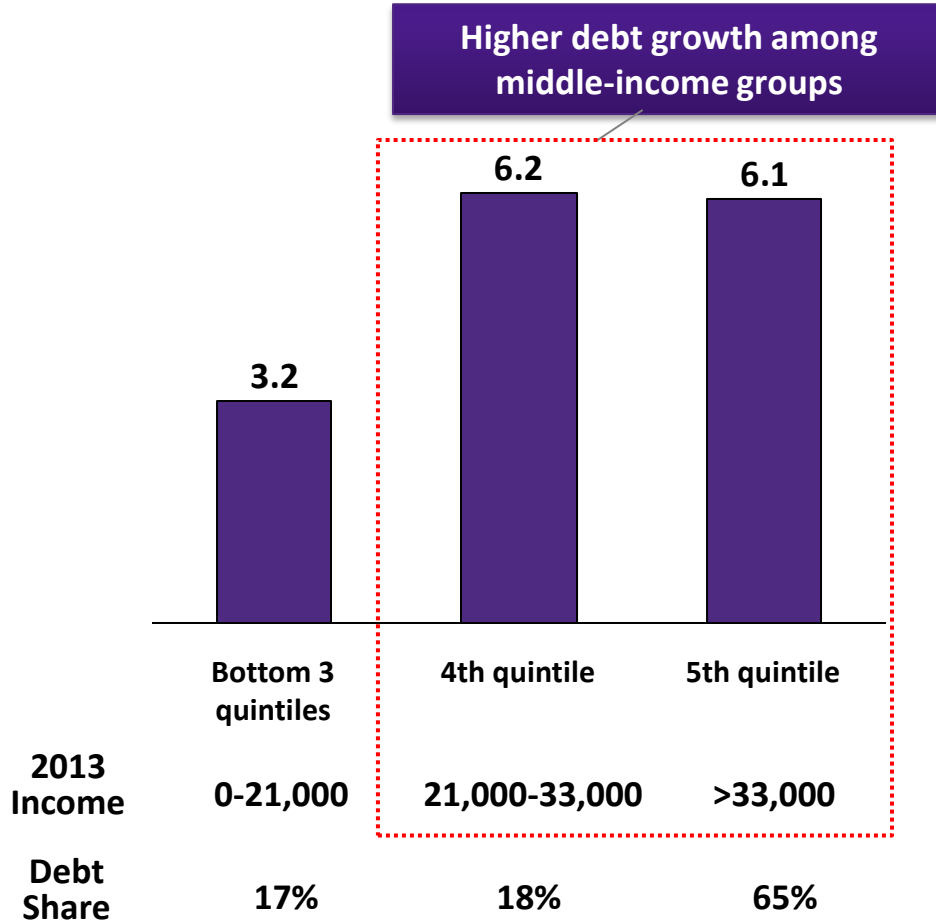
Unit: Index (1999 = 100)



# Debt growth has been higher among groups perceived as having lower risks

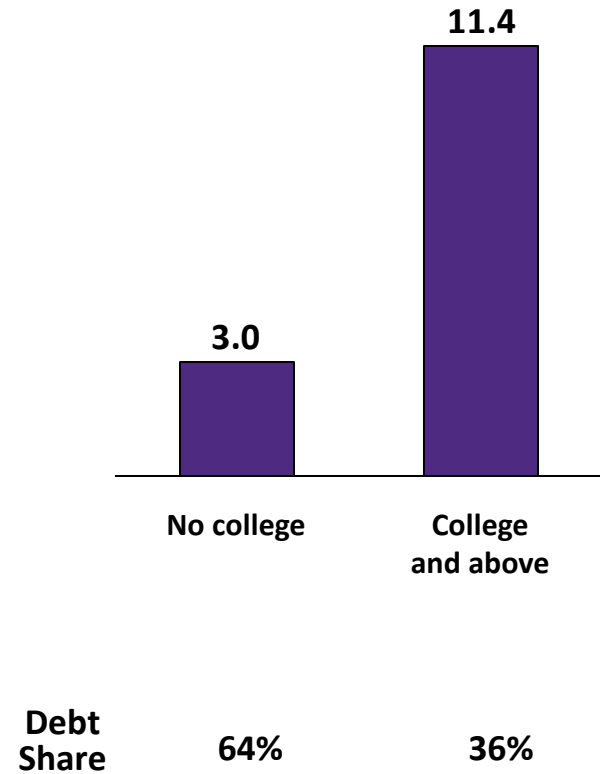
Debt growth (2013 vs. 2009) by income groups

Annualized growth rates (%)



Debt growth (2013 vs. 2009) by education groups

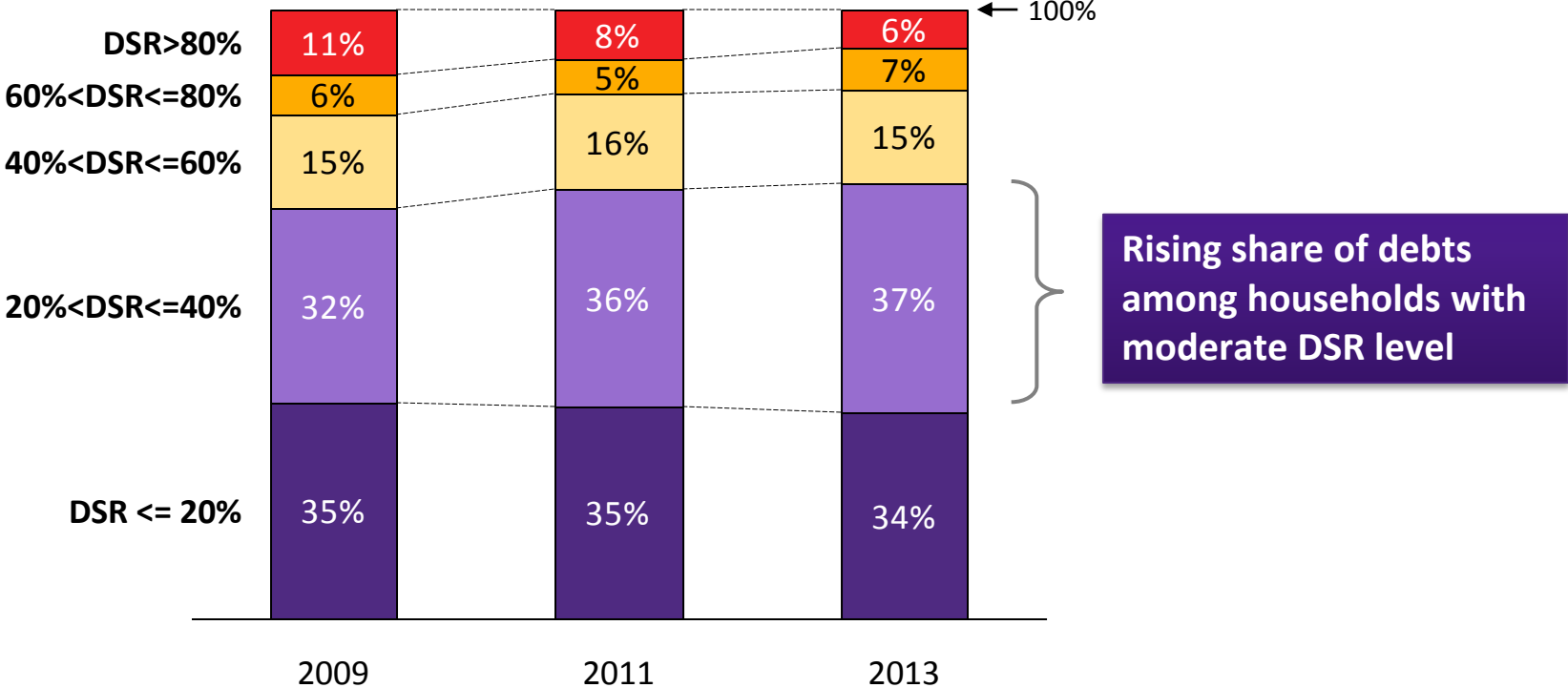
Annualized growth rates (%)



# The expansion of credit among middle-income groups also results in increasing shares of those with moderate debt-servicing burden

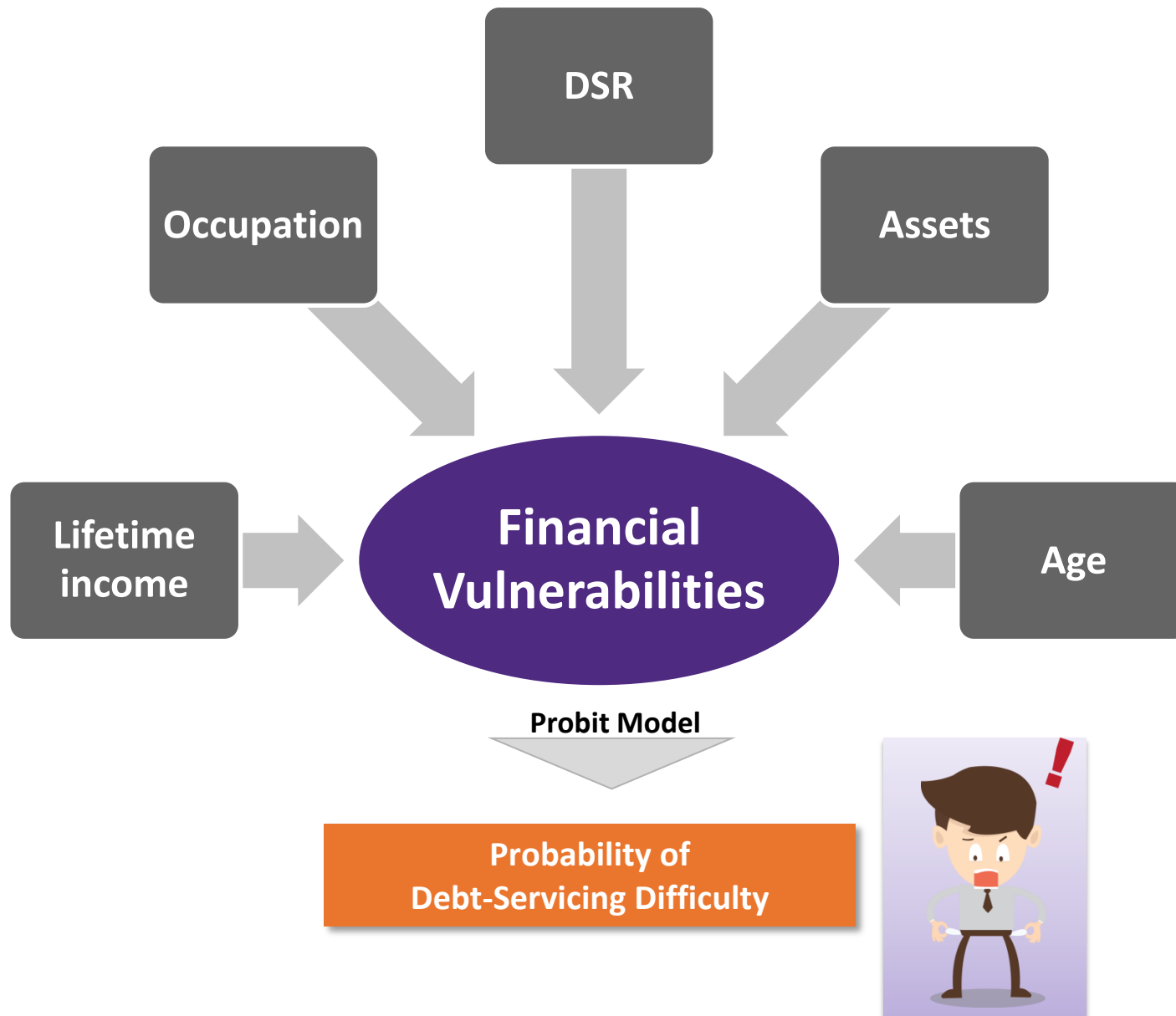
## Distribution of debt by DSR groups

Unit: %

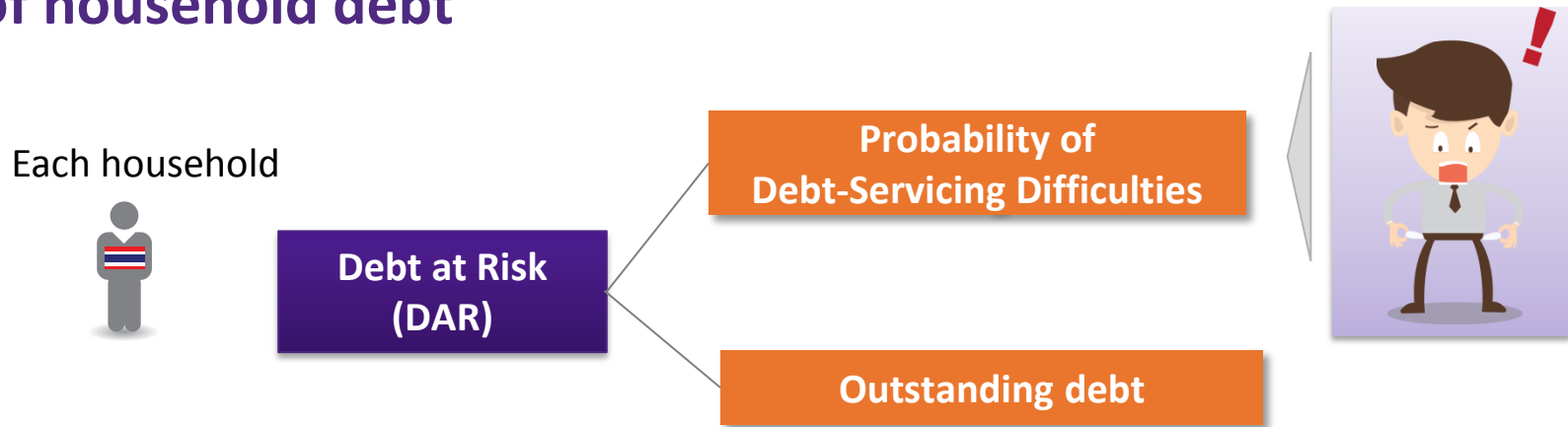


Source: SES

# What determines households' financial vulnerabilities?



# The “Debt at Risk” measure summarizes the health of our stock of household debt



Summing DAR across households



1

## Debt concentrated among high-risk households

	Debt (baht)	Prob.	Debt at Risk (baht)
A	80	50%	40
B	20	10%	2
Debt at Risk (% of total)			42%

2

## Debt concentrated among low-risk households

	Debt (baht)	Prob.	Debt at Risk (baht)
C	20	50%	10
D	80	10%	8
Debt at Risk (% of total)			18%

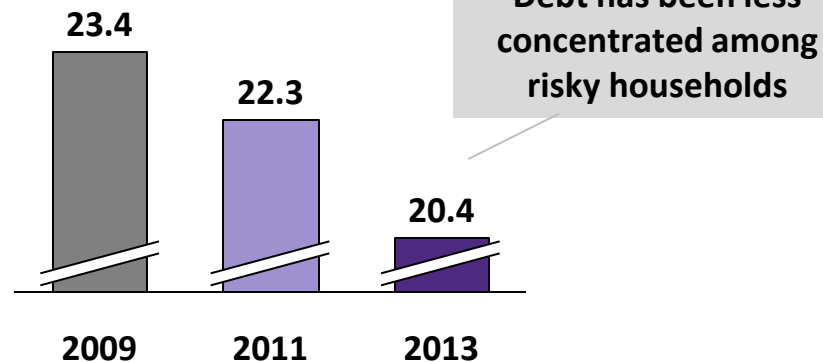
# Aggregate Debt at Risk has been declining gradually since 2009

1

Recent surge in household debt has NOT been associated with an increase in short-term risk to financial stability

**Debt at Risk, 2009-2013**

% of total debt

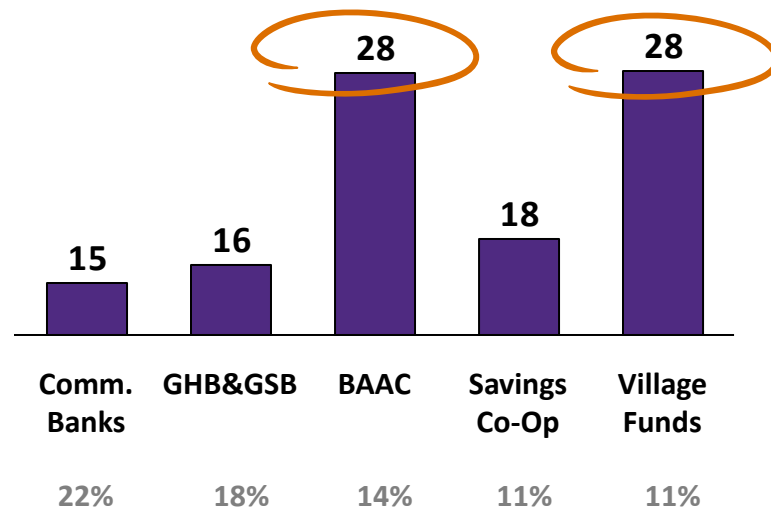


2

Not all lenders are equal in term of short-term risk to financial stability

**Debt at Risk across different lenders, 2013**

Unit % of Total Debt



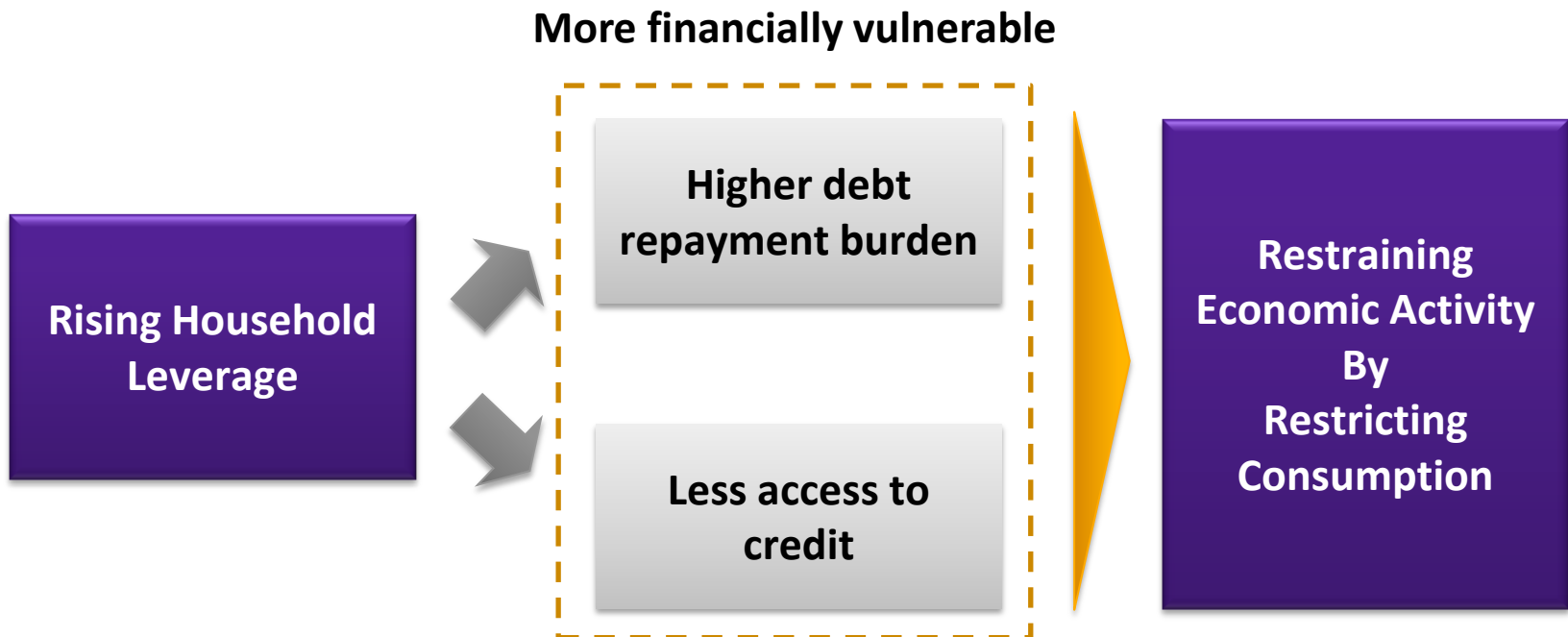
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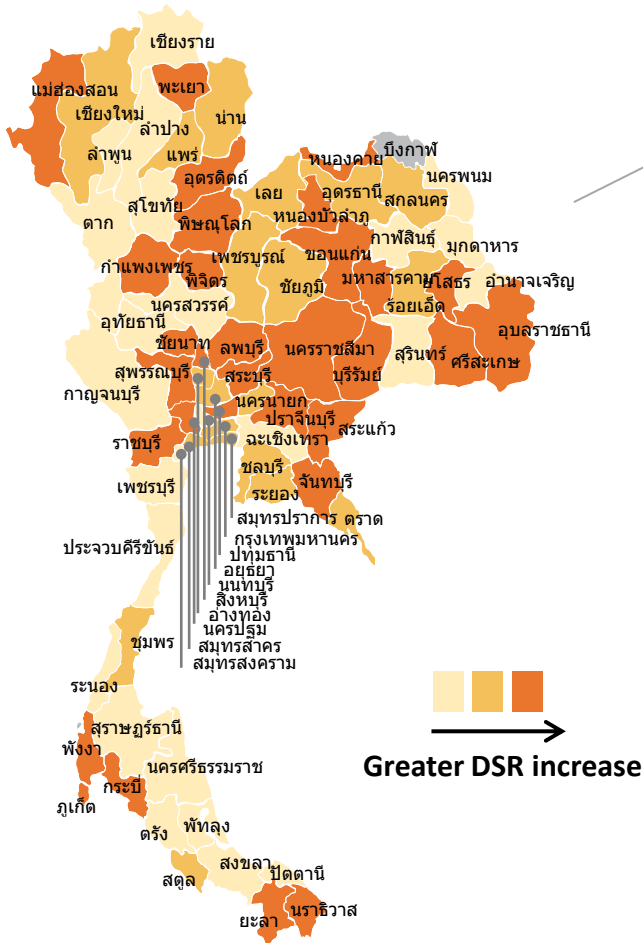


**Although the surge in debt does not increase short-term risk, it can restrain economic growth**



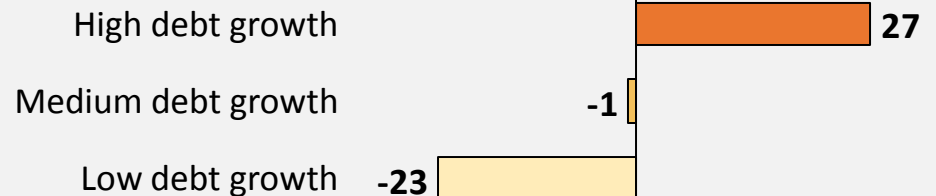
# Thailand experienced a wide variation of debt growth from 2009 to 2011

## Change in DSR by provinces from 2009 to 2011



### Splitting Thai districts into 3 groups based on their DSR increase

Average change in DSR (Percentage point)



We use this variation in DSR increases across 776 districts to examine the effect of debt acceleration on consumption during the subsequent period.

# The acceleration of debt burden represents the key impediment to consumption growth

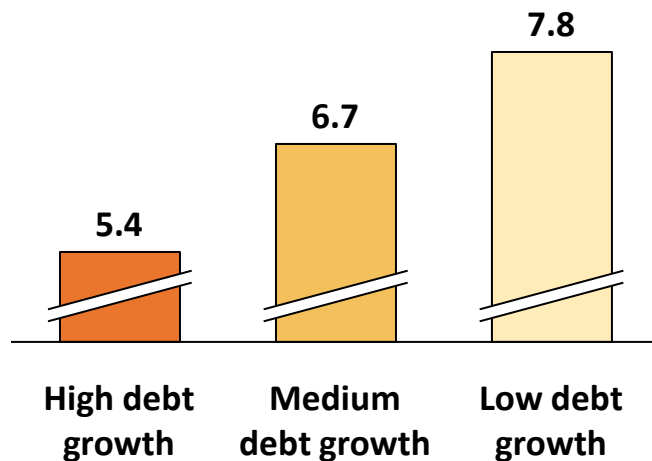
## Regression Analysis Result

- Our analysis shows that recent weakness in consumption is closely related to lagged acceleration of household debt
- The coefficient on lagged DSR increase is negative and statistically significant.

## Illustration of the regression results

Predicted mean of non-durable consumption growth\*

The income growth of 10% yields the consumption growth of:

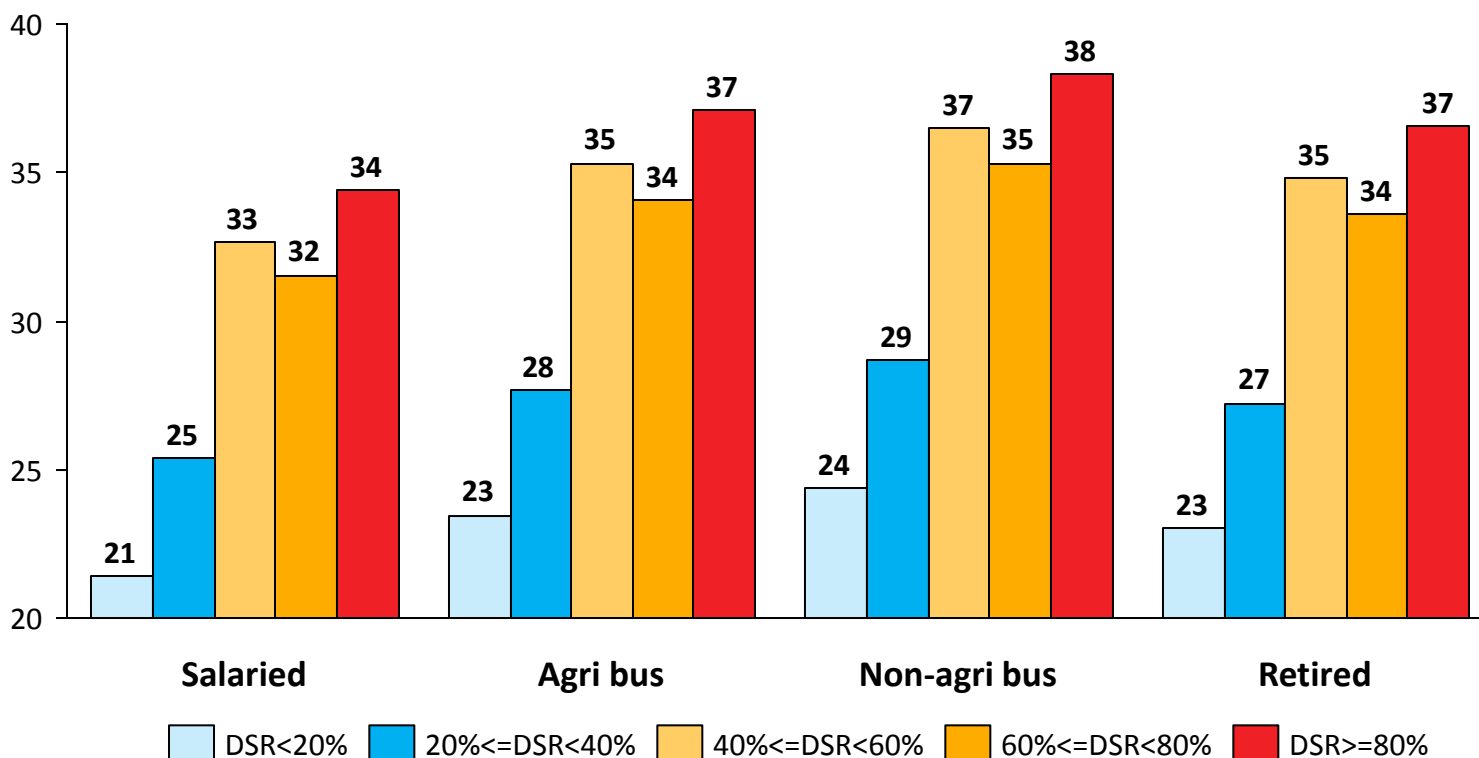


Note: \*The predicted mean is computed using average values of DSR increases in each district group.

Source: SES

# When is household leverage financial burden to Thai households?

## Predicted probability of having debt-servicing difficulty



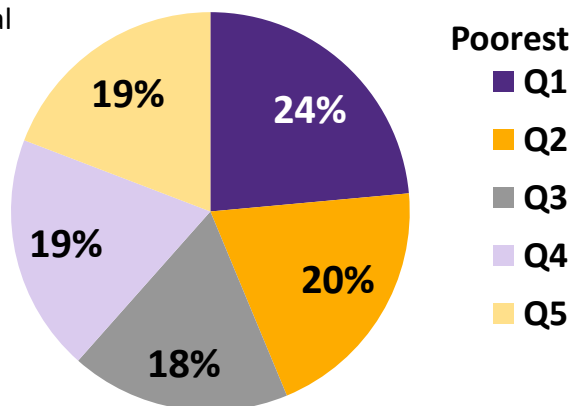
**The critical DSR threshold is 40%. Above this level, households in all occupations exhibit a significant increase in the probability of having difficulty paying their debt.**

# Who are these financially vulnerable households?

## Not necessarily poor people

Vulnerable households by income quintile

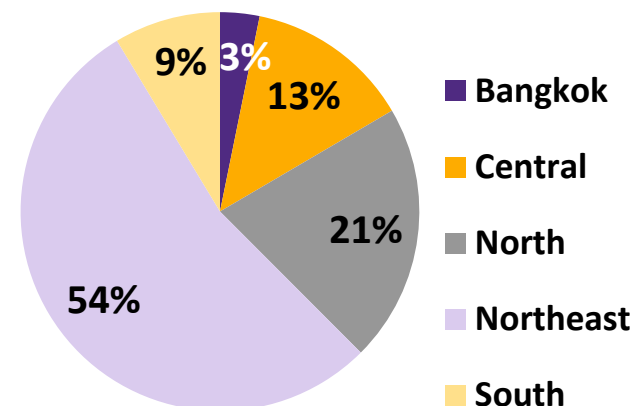
Unit % of Total



## Concentrated in the Northeast

Vulnerable households by region

Unit % of Total



## Have less liquid asset cushion but more fragile income

	Vulnerable	Not Vulnerable
Median liquid asset coverage	4.8	16.8
Share of fragile income	73%	58%

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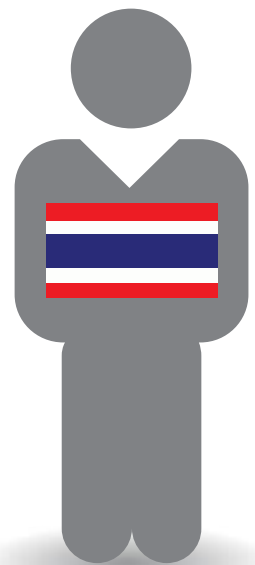
# We construct a microsimulation model to help assess the impact of the interest rate hike on households' financial health.

## Microsimulation Framework

### Income

#### Heterogeneous income growth across households

- ❑ Assume average income growth consistent with BOT's projected GDP growth
- ❑ Allow variance of income growth to differ across income groups



### Debt expense

#### Interest rate = MRR + Risk premium

- ❑ Debt with fixed rate: Consumption, Mortgage, Non-BACC Agriculture

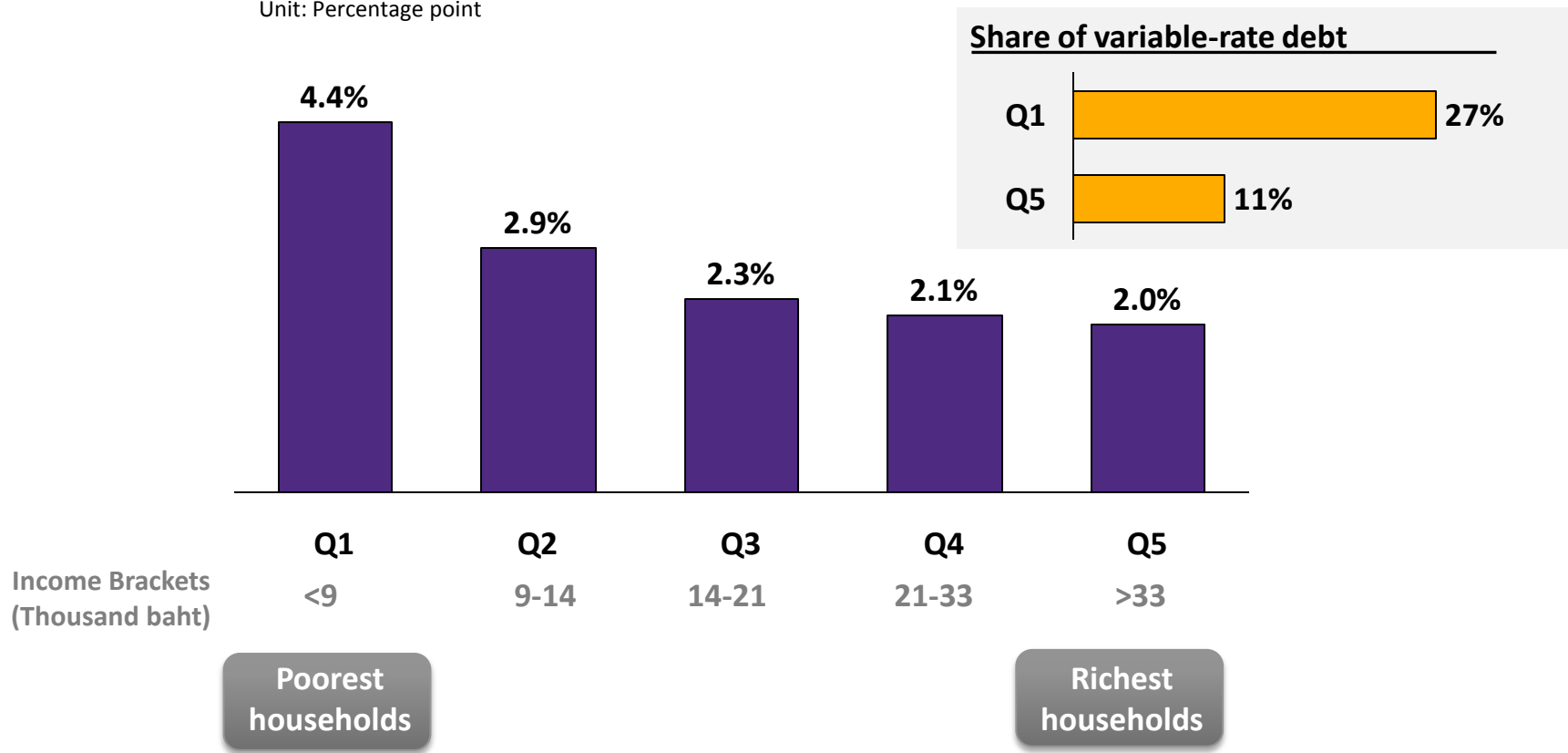
#### Debt growth as function of income growth

- ❑ Construct a pseudo-panel dataset with 48 household clusters based on education, age, occupation and location

# Our microsimulation indicates low-income households will be more burdened by the interest rate hike.

## Increase in average DSR by income quintiles

Unit: Percentage point



Notes: 1. The microsimulation uses 2013Q1 SES observations as the base dataset.

2. Indebted households only

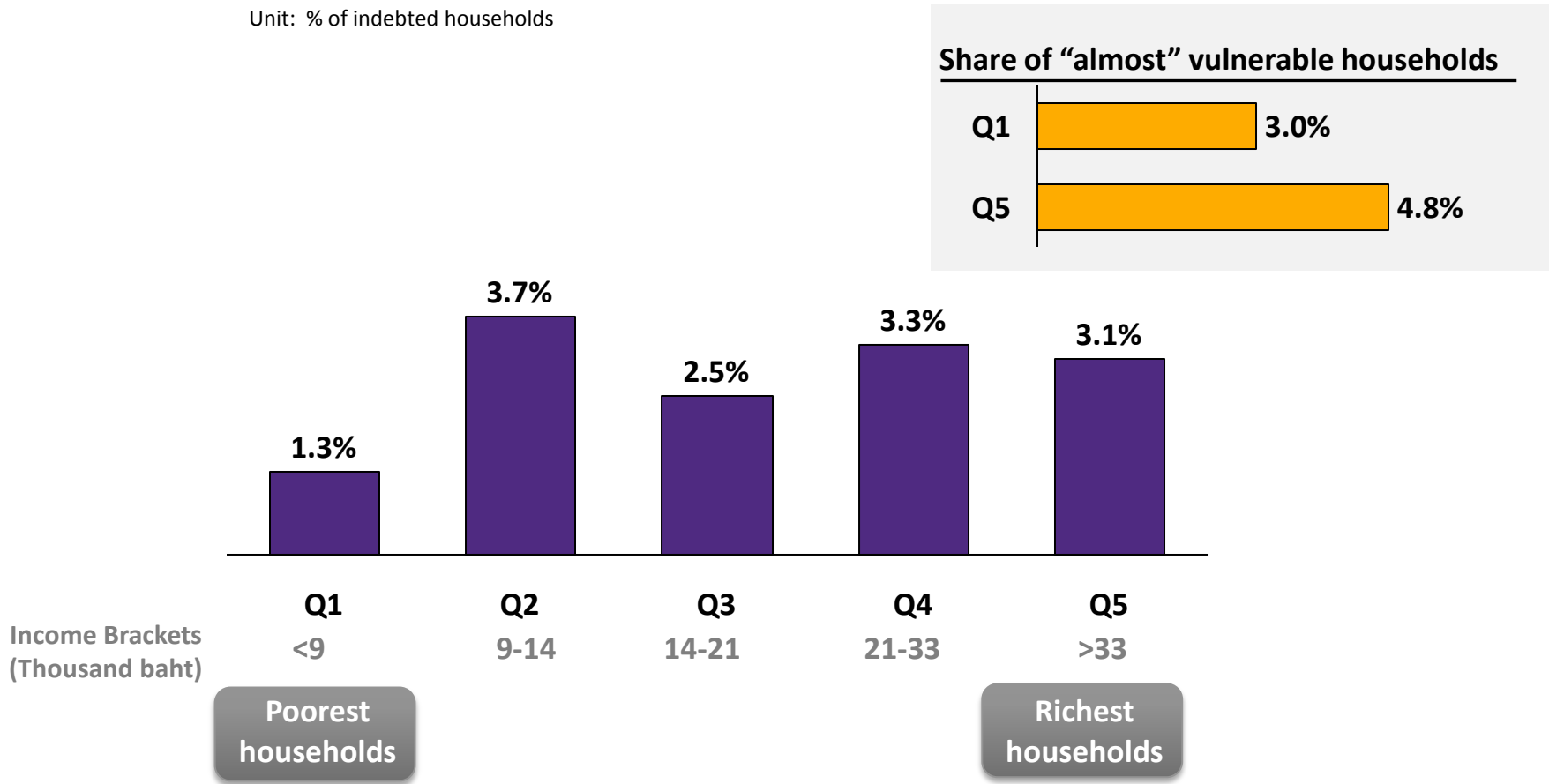
Source: SES



# The rate hike will also threaten households who are “almost” financially vulnerable to begin with

## Increase in share of financially vulnerable households

Unit: % of indebted households



Notes: 1. The microsimulation uses 2013Q1 SES observations as the base dataset.

2. Indebted households only

Source: SES

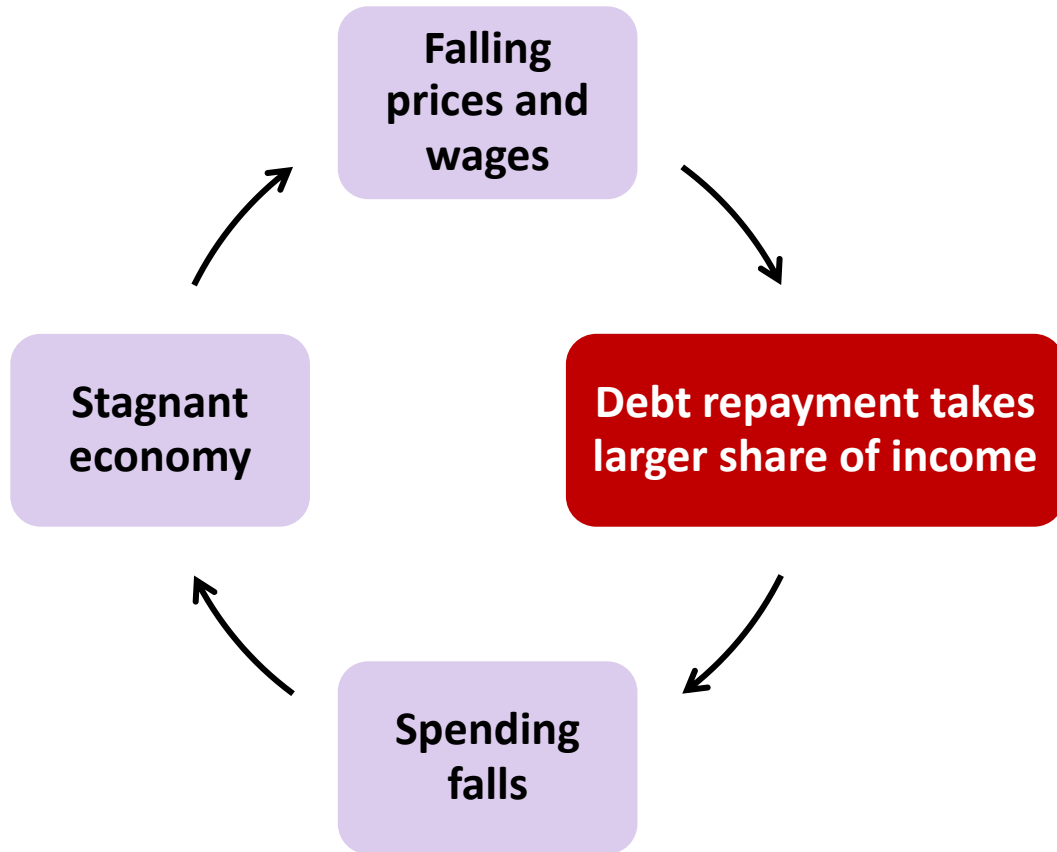
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# Living with highly leveraged households

## Be vigilant on debt deflation



### Monetary Policy

- Keep inflation expectation steady.
- **Deflation** could be as dangerous as high inflation.

# Living with highly leveraged households

**Reduce households' downside risk**



Source: Dailynews



# Living with highly leveraged households

Increase financial awareness

Technology can significantly simplify financial planning and budgeting

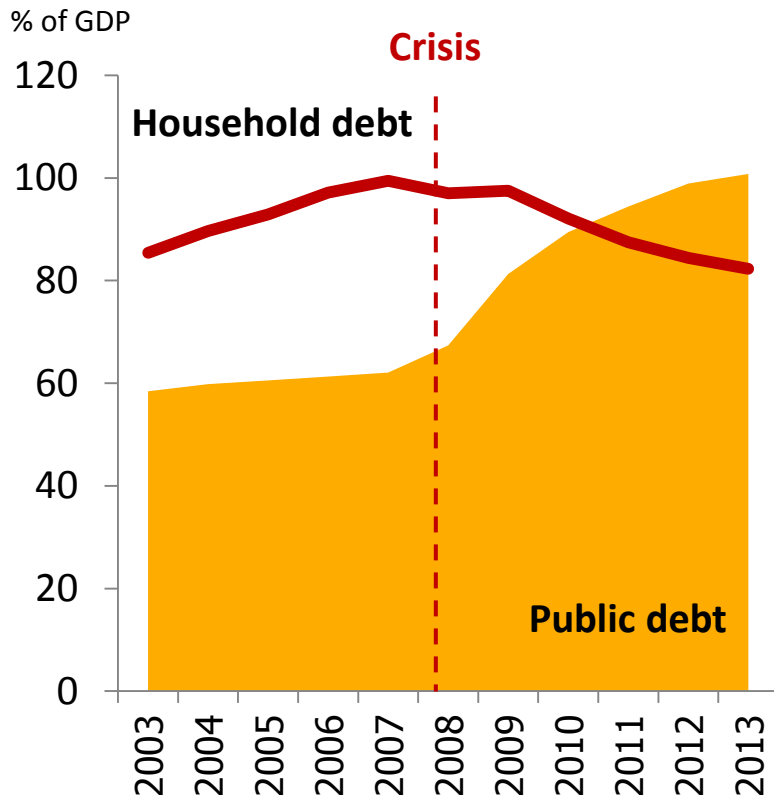


# Living with highly leveraged households

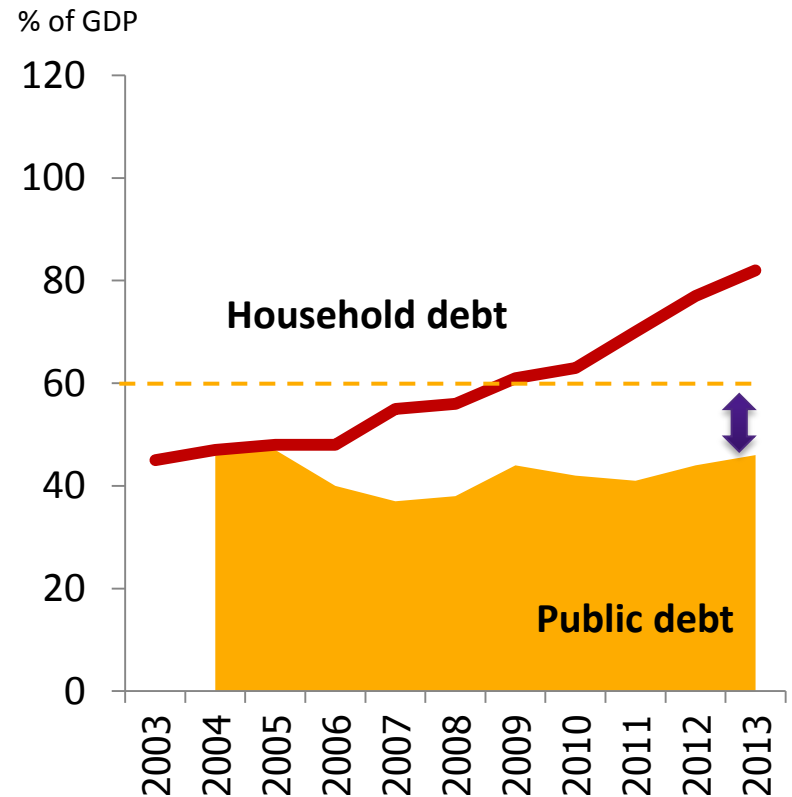
## Manage the buffer

Fiscal space must be carefully managed as it is the ultimate shock absorber

### US household debt and public debt



### Thailand household debt and public debt



# Key Takeaways

1

Does the rising debt increase short-term risk to financial stability?

- No. The debt has been rising primarily among lower-risk households

2

To what extent, does the debt surge hurt consumption?

- Evidence shows the debt burden hinders consumption growth
- DSR > 40% could hurt household's consumption

3

How big is the threat associated with the potential rate hike?

- Poor households are likely to see disproportionate increase in DSR
- Impacts on consumption will not be limited to poor households

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