มองมาตรการภาครัฐและหนี้ครัวเรือน ผ่านข้อมูลเครดิตบูโร

Fiscal Stimulus and Household Debt through the Lens of 80-million Loan Accounts

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Discliamer: The views expressed in this study are our own and do not represent those of the Bank of Thailand or the National Credit Bureau. Data provided in this study is from statistical database of the National Credit Bureau.

National Credit Bureau (NCB) Statistical Database

	Mar 2016
Loan outstanding (trillion baht)	8.7
Number of borrowers (million)	16.05
Number of active accounts (million)	49.1
NCB member	89

Source: Statistical database of the National Credit Bureau (authors' calculation)

Note: 1. Data from comsumer statistical database
2. BAAC not yet include in this study as it becomes member of NCB in Q2,16
3. Members comprise of 19 commercial banks, 5 SFIs, 65 non-banks
(i.e. credit card firms, hire purchase firms, insurance companies, etc.)

Unique Features

1) Coverage

- Wide population
  (covering 74% of total household debt)

- Consolidated view of financial
  institutions relations for each borrower

2) Granularity

- Account level information

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1) New perspectives of household debt through the lens of credit bureau data

2) Using credit bureau data to understand potential impacts of fiscal stimulus

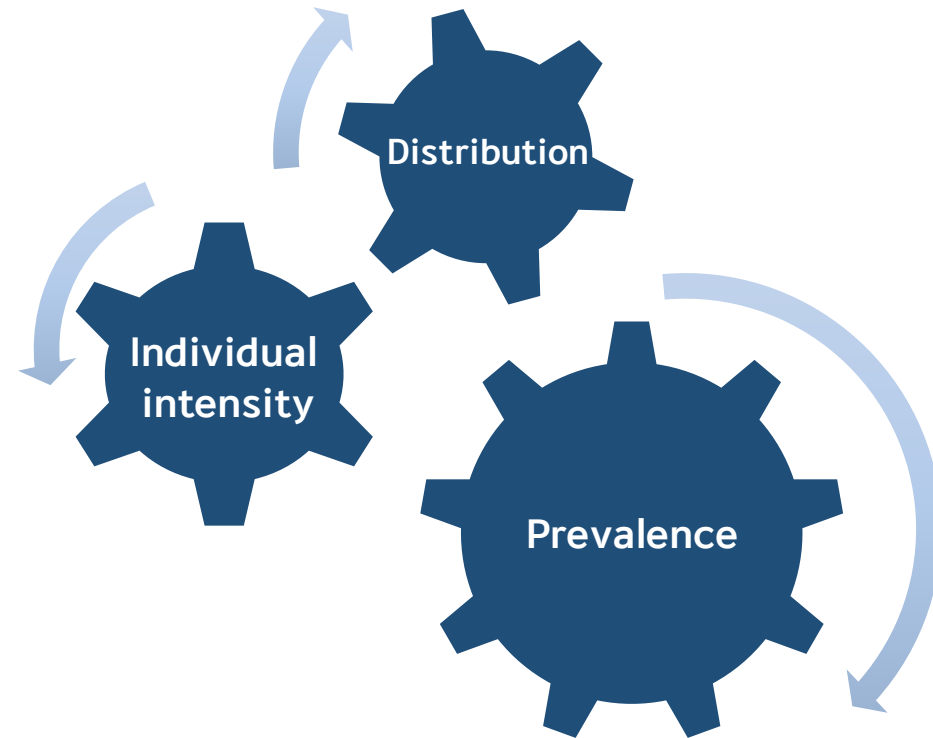# 1) New perspectives of household debt through the lens of credit bureau data

NCB data

Outcomes

- Loan outstanding
- Delinquent loan

Borrower characteristics

- Location
- Age
- Portfolio choice

Distribution

Individual intensity

Prevalence

Helicopter view of household debt (Mar 2016)

❖ Only 24% of population borrow
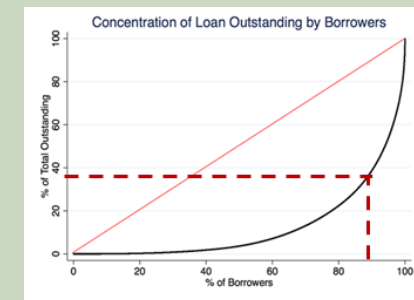❖ Debt burden is highly concentrated

Prevalence	Intensity

Debt per capita

132,931 Baht

Headcount

24%

Debt per borrower

Concentration of Loan Outstanding by Borrowers
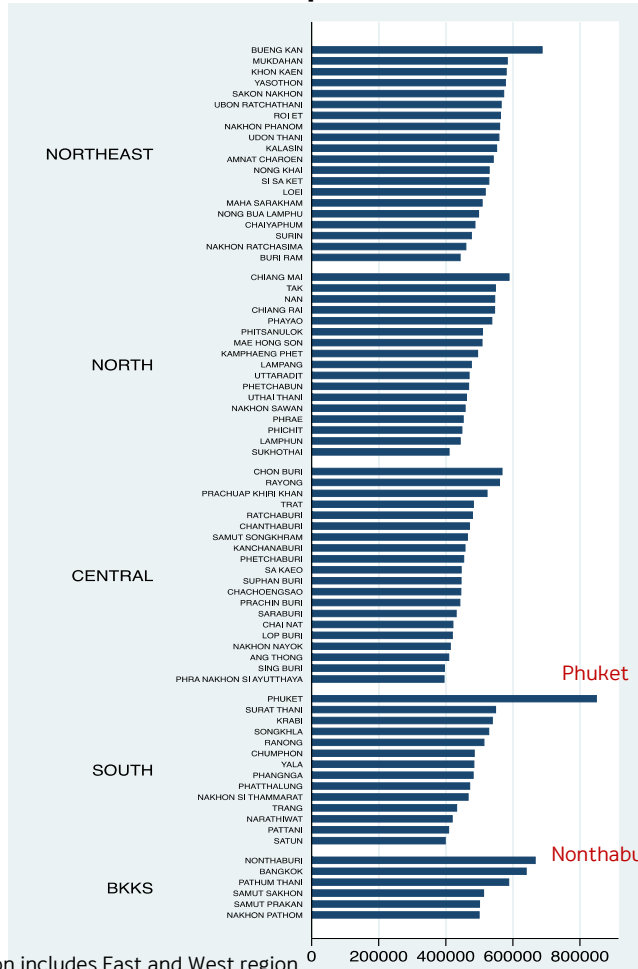
61.2% of total debt occupied by 10% of borrowers

- ❖ Distribution of debt intensity much different than those of headcount
- ❖ High debt intensity for borrowers in the Northeast

Prevalence — Headcount

tambon
debt_headcount

- 5.743661 - 10.000000
- 10.000001 - 20.000000
- 20.000001 - 30.000000
- 30.000001 - 40.000000
- 40.000001 - 50.000000
- 50.000001 - 60.000000
- 60.000001 - 70.000000
- 70.000001 - 100.000000

Intensity — Debt per borrower

Debt_per_bor

- 174,509 - 326,692
- 326,693 - 354,836
- 354,837 - 378,405
- 378,406 - 402,240
- 402,241 - 435,516
- 435,517 - 448,529
- 448,530 - 477,044
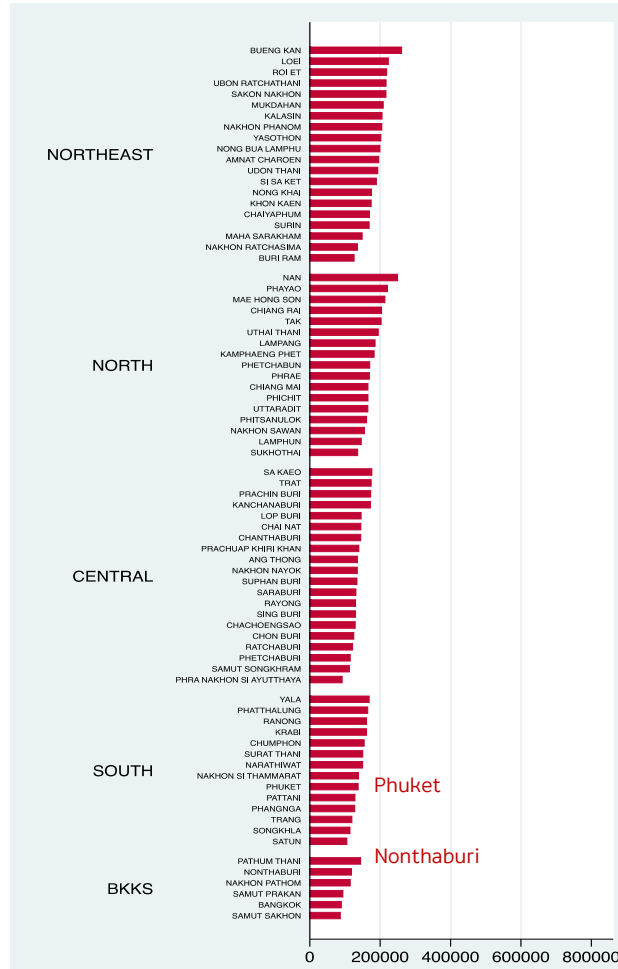- 477,045 - 508,264
- 508,265 - 554,364
- 554,365 - 1,041,922

Geographical distribution of household debt

❖ Mean and median debt per borrower high in the Northeast
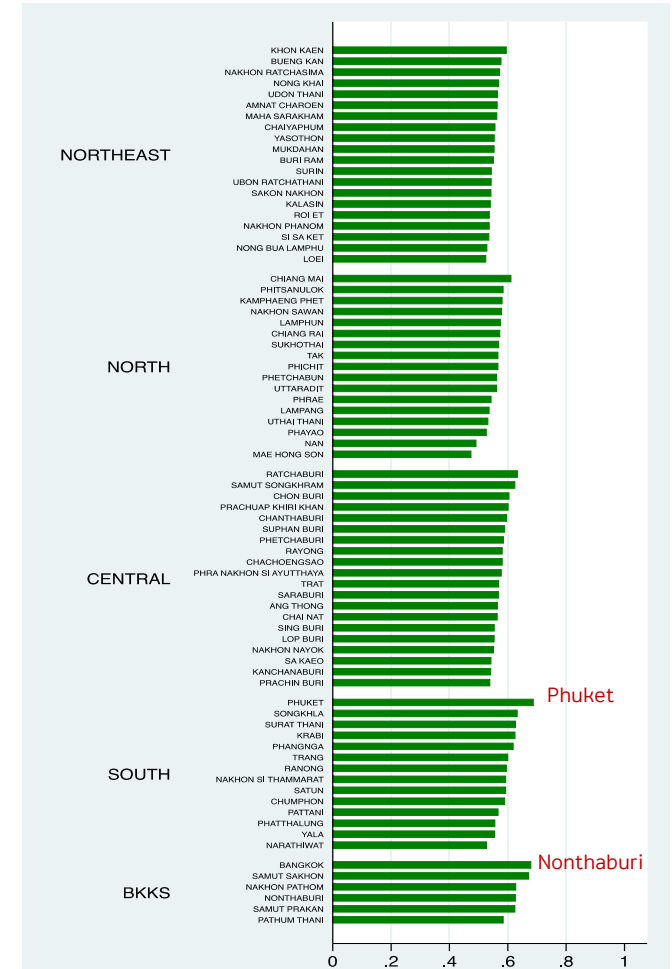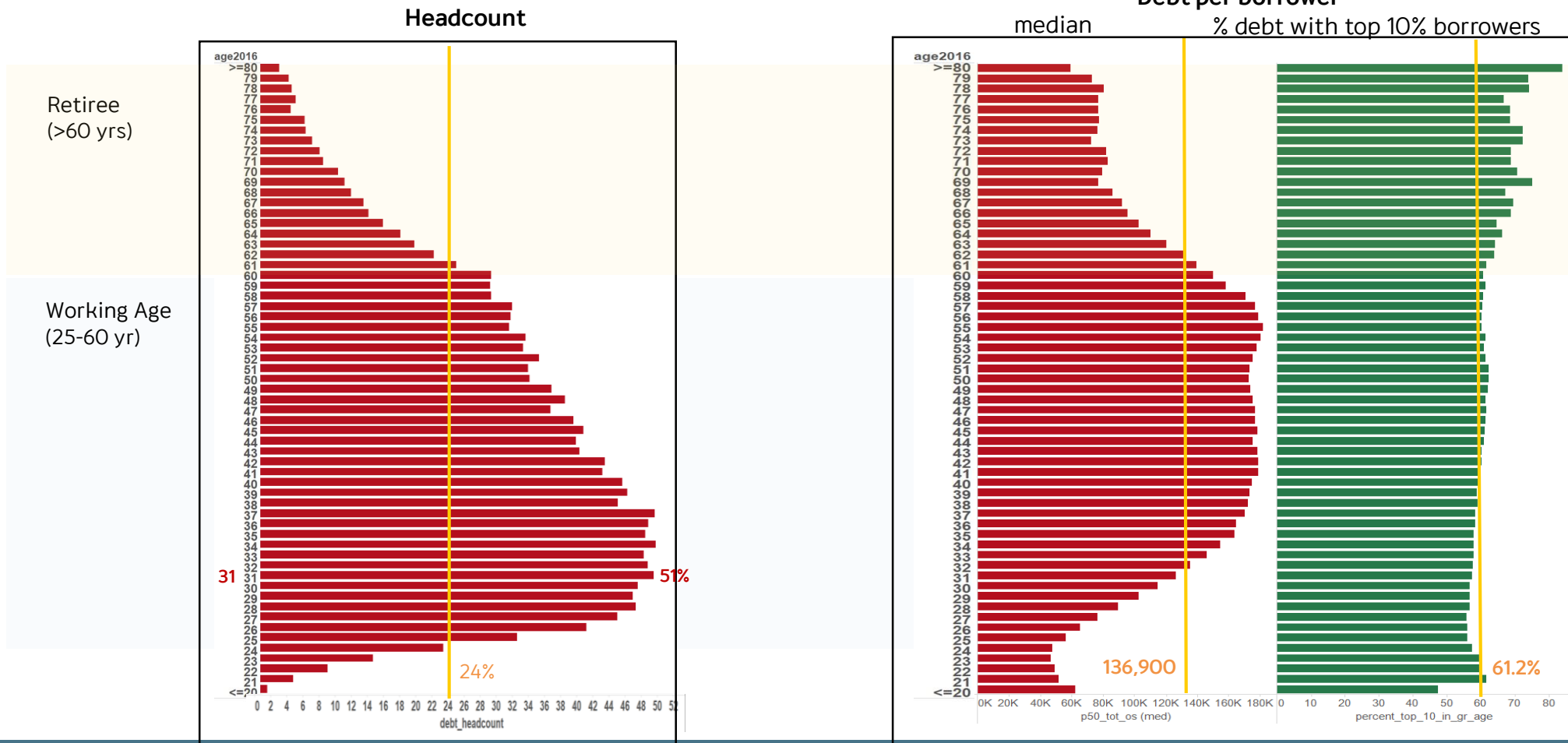❖ Concentration is high across regions, especially Bangkok and vicinity

Note: Central region includes East and West region.

Distribution of household debt by age

❖ Access to debt low for working age while debt burden is high and concentrated

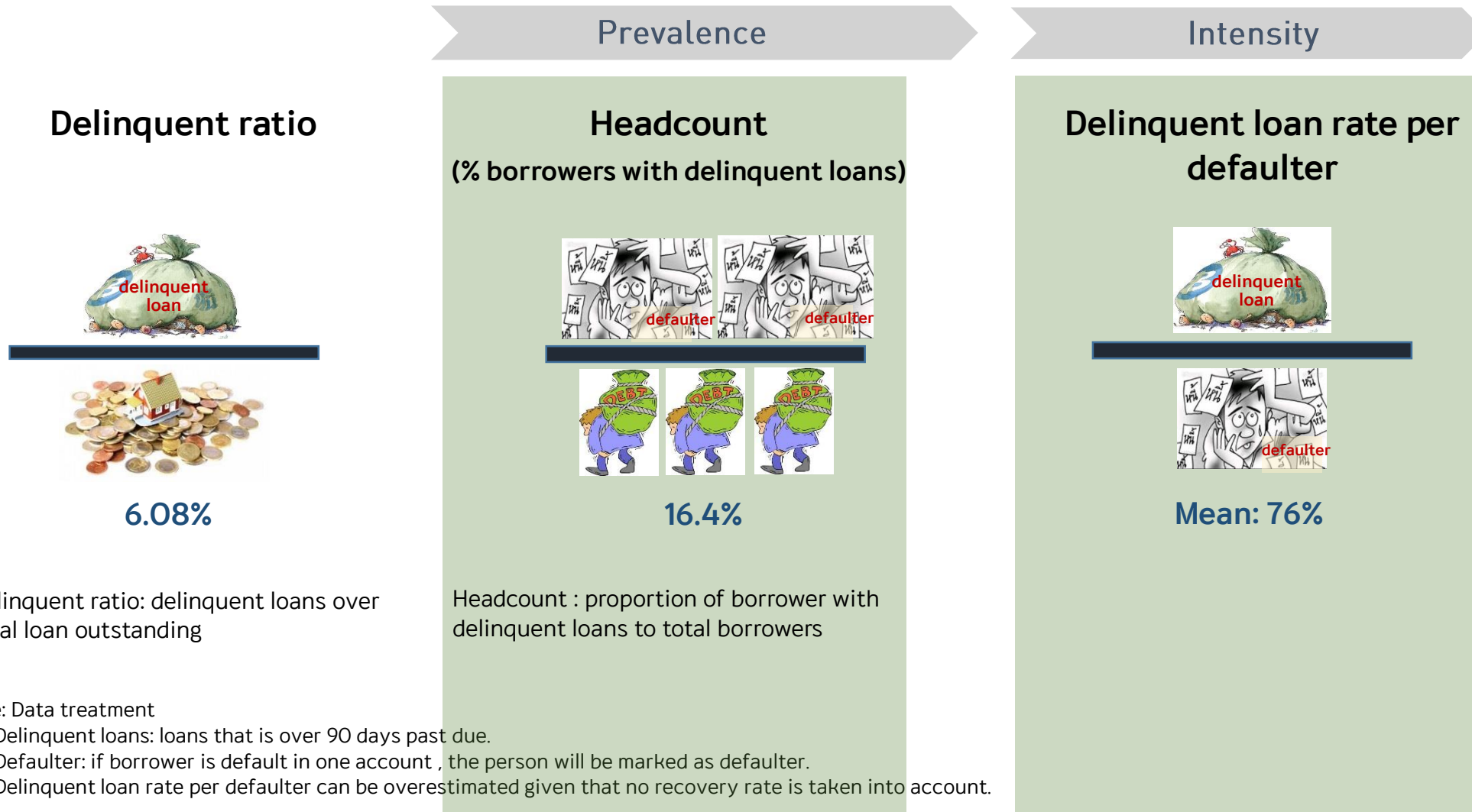❖ Duration of peak debt is long and debt run-down stunted at old age

Prevalence

Intensity

Headcount

Debt per borrower

median   % debt with top 10% borrowers

Retiree (>60 yrs)

Working Age (25-60 yr)

31   51%

24%

136,900   61.2%

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❖ 16.4% of borrowers have delinquent loans. Delinquency severity is high.

Prevalence	Intensity

Delinquent ratio

6.08%

Delinquent ratio: delinquent loans over total loan outstanding

Headcount
(% borrowers with delinquent loans)

16.4%

Headcount : proportion of borrower with delinquent loans to total borrowers

Delinquent loan rate per defaulter
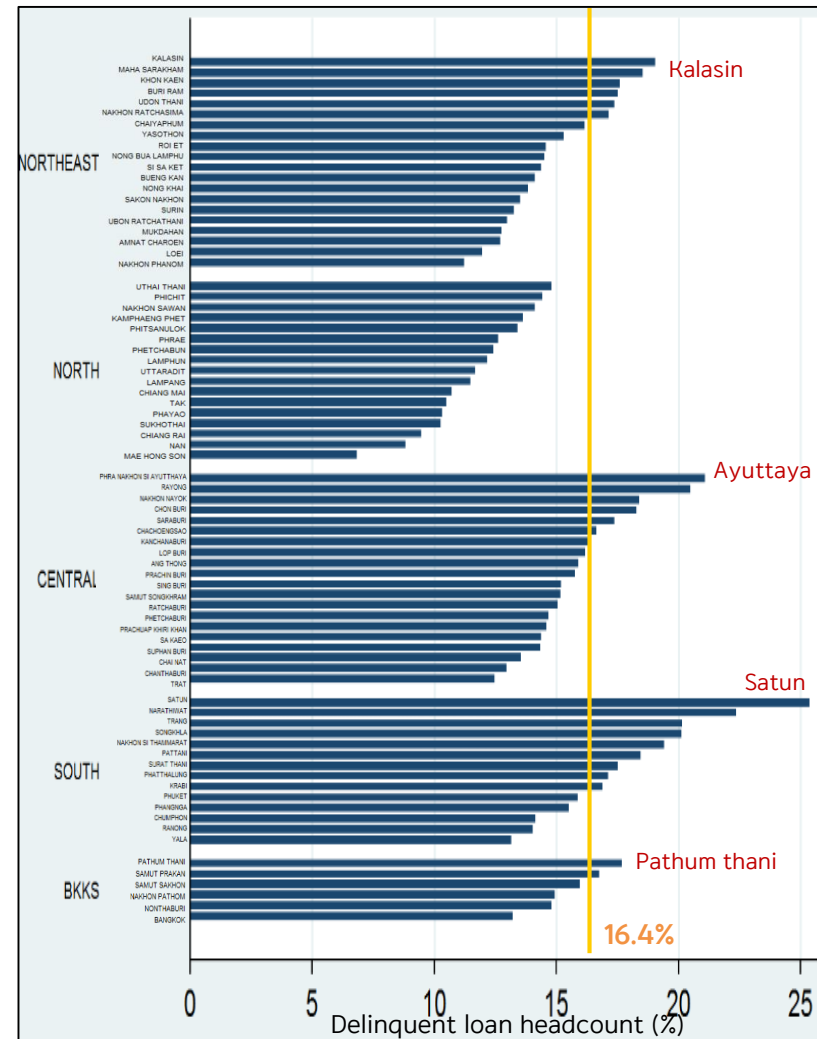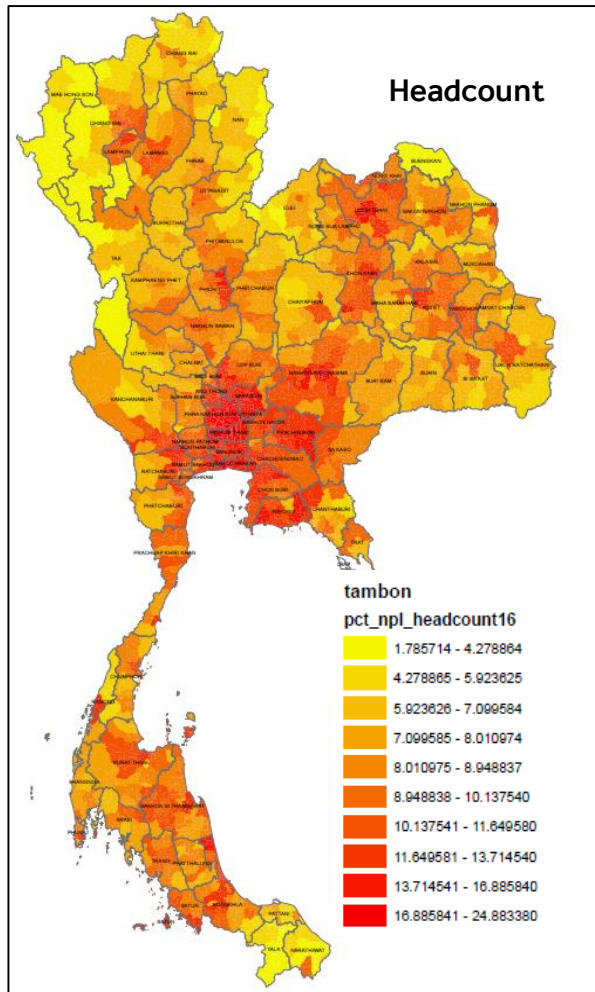

Mean: 76%

Note: Data treatment
1. Delinquent loans: loans that is over 90 days past due.
2. Defaulter: if borrower is default in one account , the person will be marked as defaulter.
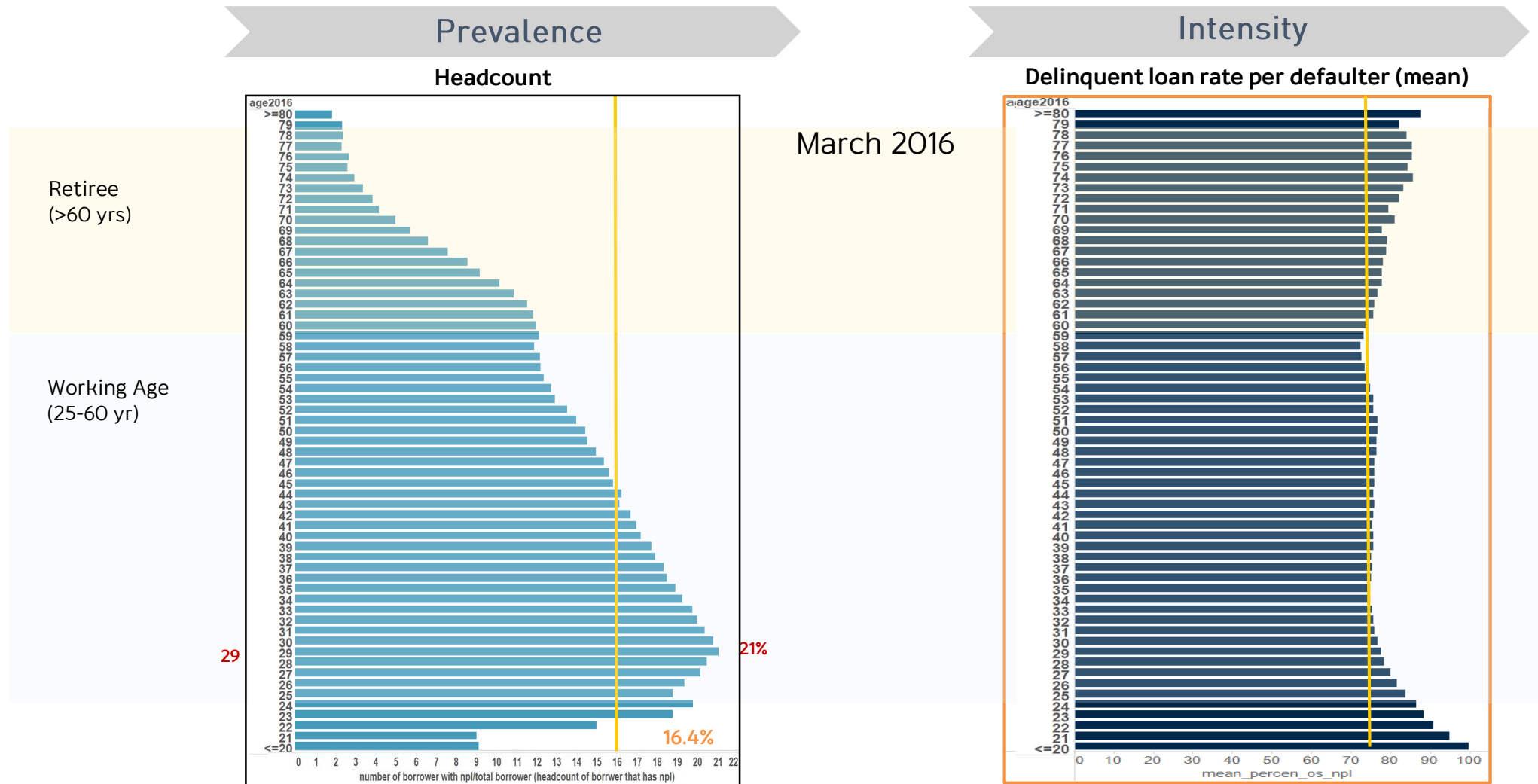3. Delinquent loan rate per defaulter can be overestimated given that no recovery rate is taken into account.

❖ Highest delinquency in the South, Bangkok and vicinity and lowest in the North

Distribution of delinquent loan by age

❖ Delinquent loan headcount is high for young adult in early 30's

Prevalence	Intensity

Headcount

Delinquent loan rate per defaulter (mean)

March 2016

Retiree
(>60 yrs)

Working Age
(25-60 yr)

29   21%

16.4%

number of borrower with npl/total borrower (headcount of borrwer that has npl)

mean_percen_os_npl

❖ Substantial segmentation across institutions...

Share of borrowers

Commercial banks   SFIs

20%   **8.3%**
(3.19 million)   3%   (1.33 million)
only use   only use SFIs
commercial banks

21.2%   4.8%

36%   **7%**
(5.76 million)   (1.13 million)
Others*   only use others   have access to all

Share of loan outstanding

Commercial banks   SFIs

18%   6.8%   **5.6%**

35.3%   5.6%
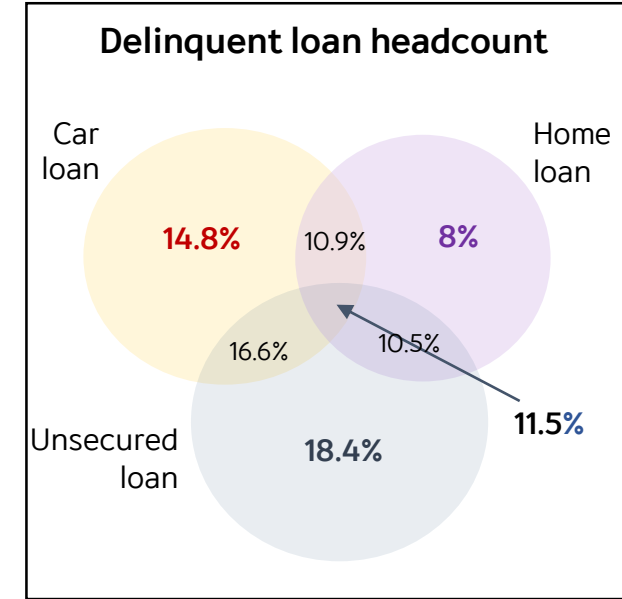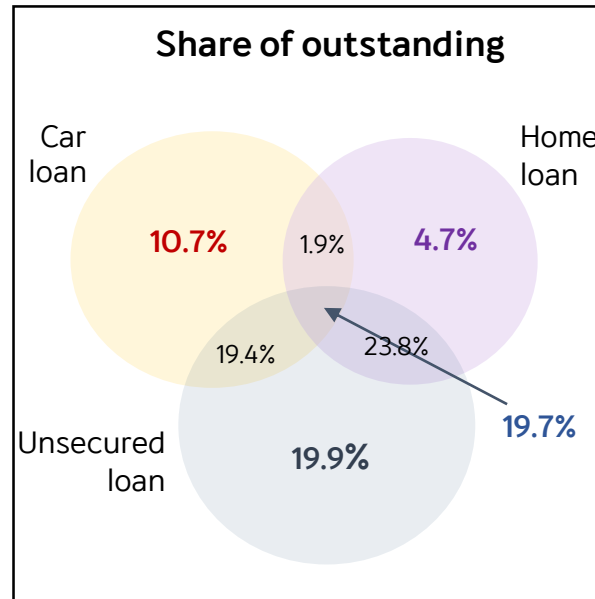
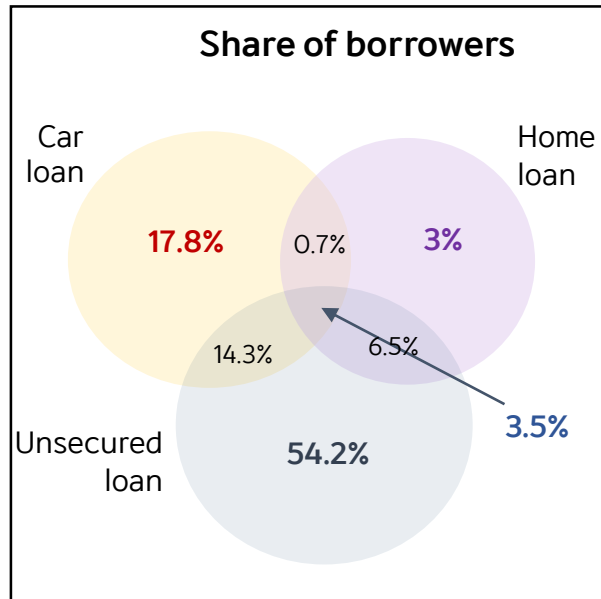**7.2%**   **21.6%**
Others*
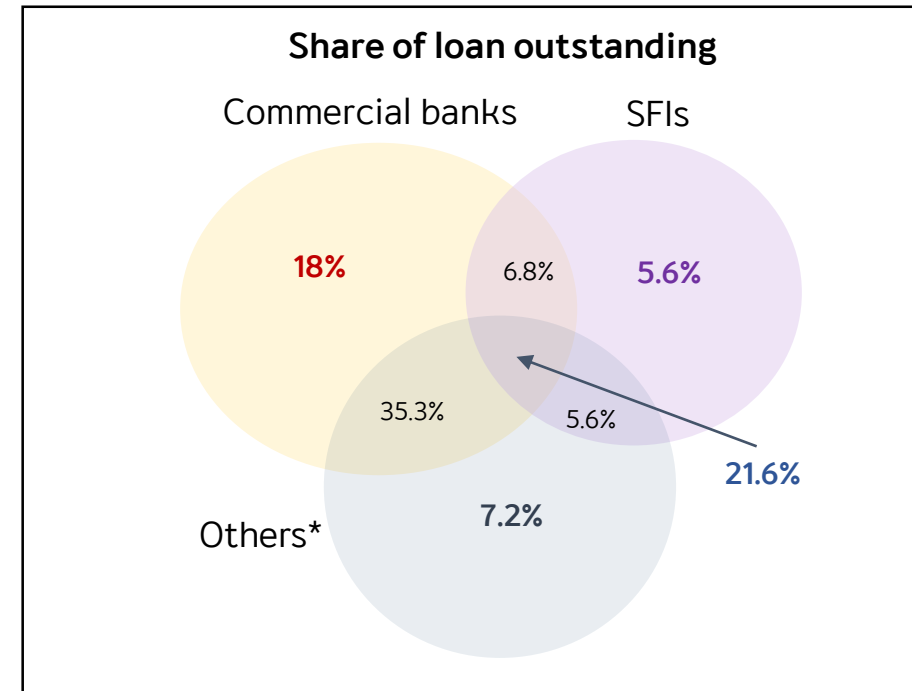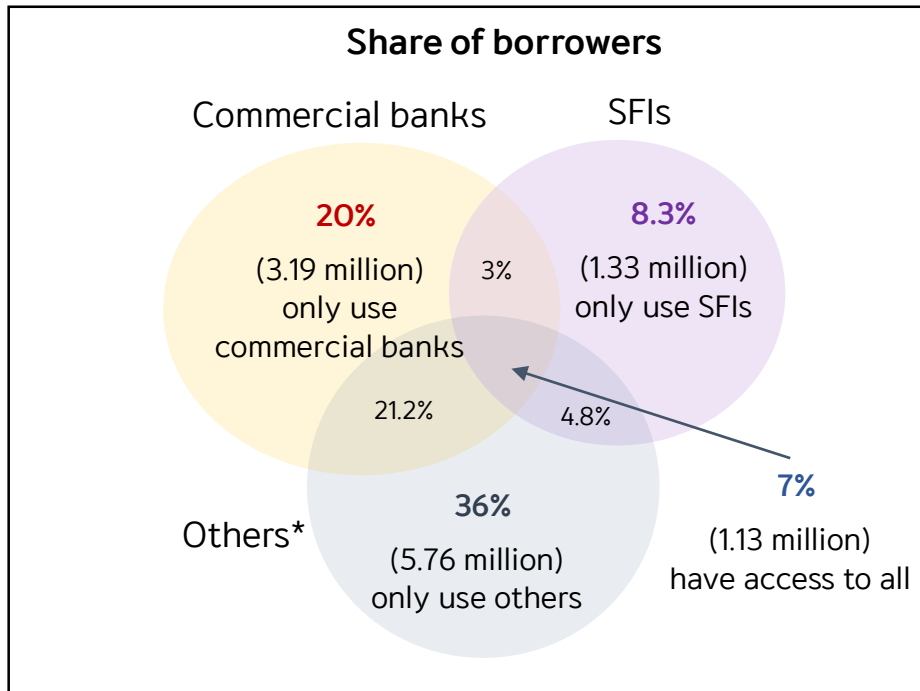
64.3% of borrowers use only ONE type of financial institution

52.7% of borrowers borrow from only ONE institution

* Others include non-banks (i.e. credit card firms, hire purchase firms, etc.) and insurance company, co-operative

❖ Again substantial segmentation across products

Share of borrowers

Car loan — **17.8%** · 0.7% · **3%** — Home loan
14.3% · 6.5%
Unsecured loan — **54.2%** · **3.5%**

Share of outstanding

Car loan — **10.7%** · 1.9% · **4.7%** — Home loan
19.4% · 23.8%
Unsecured loan — **19.9%** · **19.7%**

Delinquent loan headcount

Car loan — **14.8%** · 10.9% · **8%** — Home loan
16.6% · 10.5%
Unsecured loan — **18.4%** · **11.5%**

54% of borrowers only use unsecured loans

3.5% of borrowers with all account types make up 19.7% of total loan

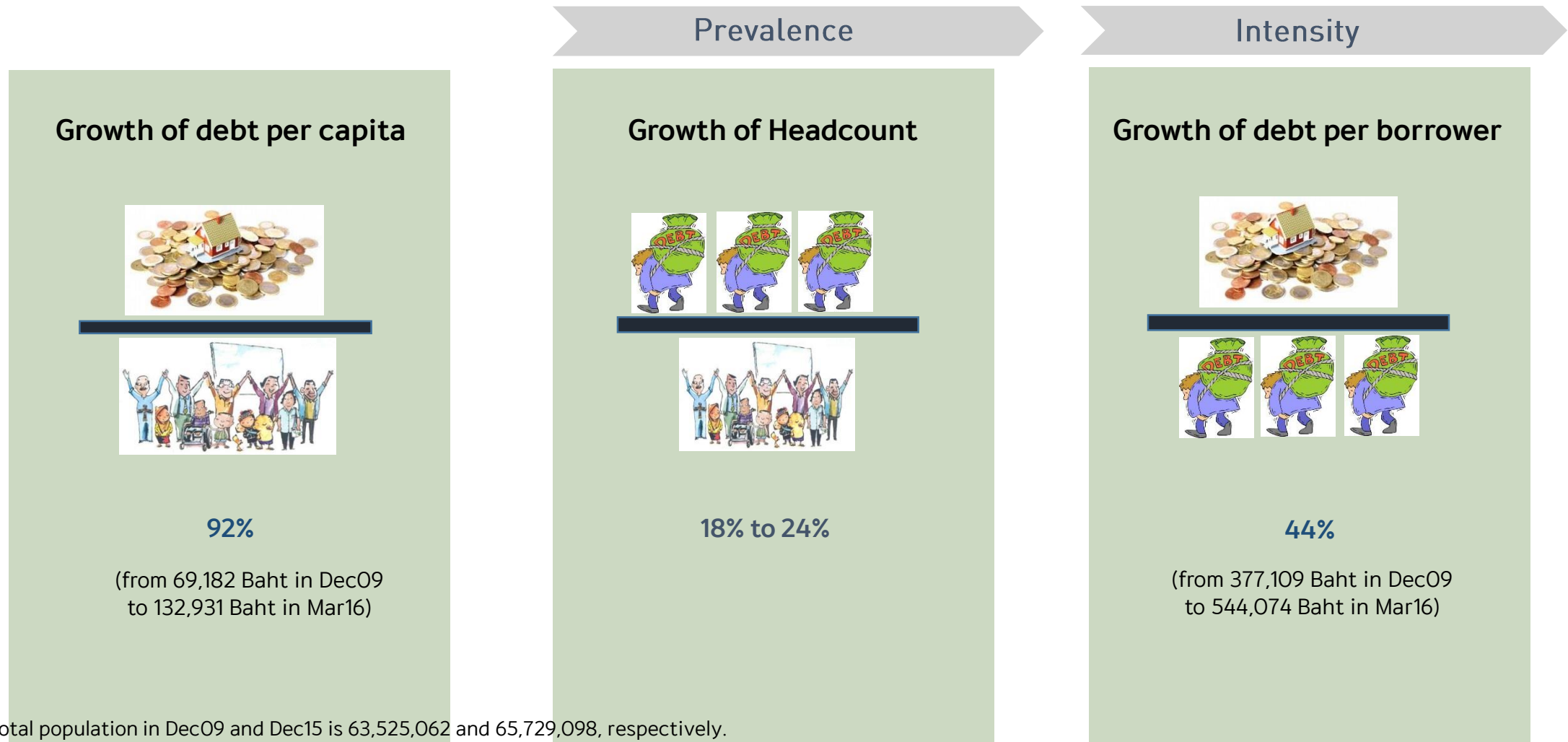13.7% of borrowers with housing loan account for 50.1% of total loan

High delinquency among those with car and unsecured loans

Note:
1. Delinquent loan: loans that is over 90 days past due
2. Unsecured loan comprises of p-loan, OD, credit card and others
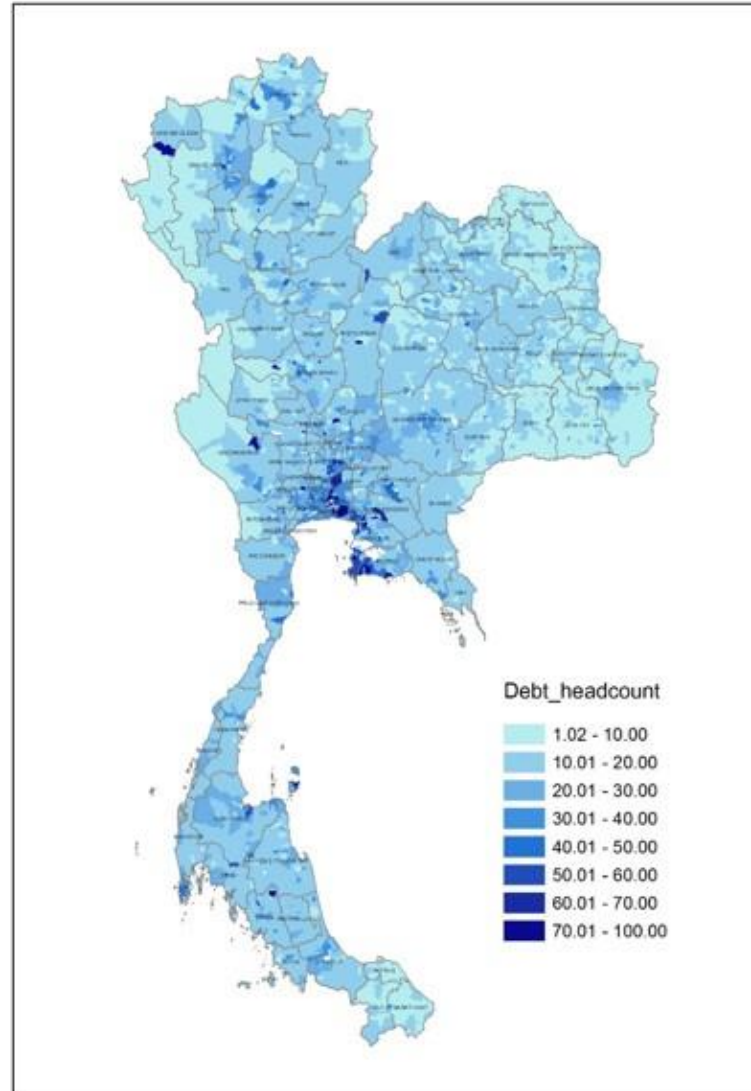
❖ Debt growth from 2009-2016 comes from rise in both headcount as well as debt per borrower

Prevalence	Intensity

Growth of debt per capita

Growth of Headcount

Growth of debt per borrower

92%

(from 69,182 Baht in Dec09
to 132,931 Baht in Mar16)

18% to 24%

44%

(from 377,109 Baht in Dec09
to 544,074 Baht in Mar16)

Note: total population in Dec09 and Dec15 is 63,525,062 and 65,729,098, respectively.
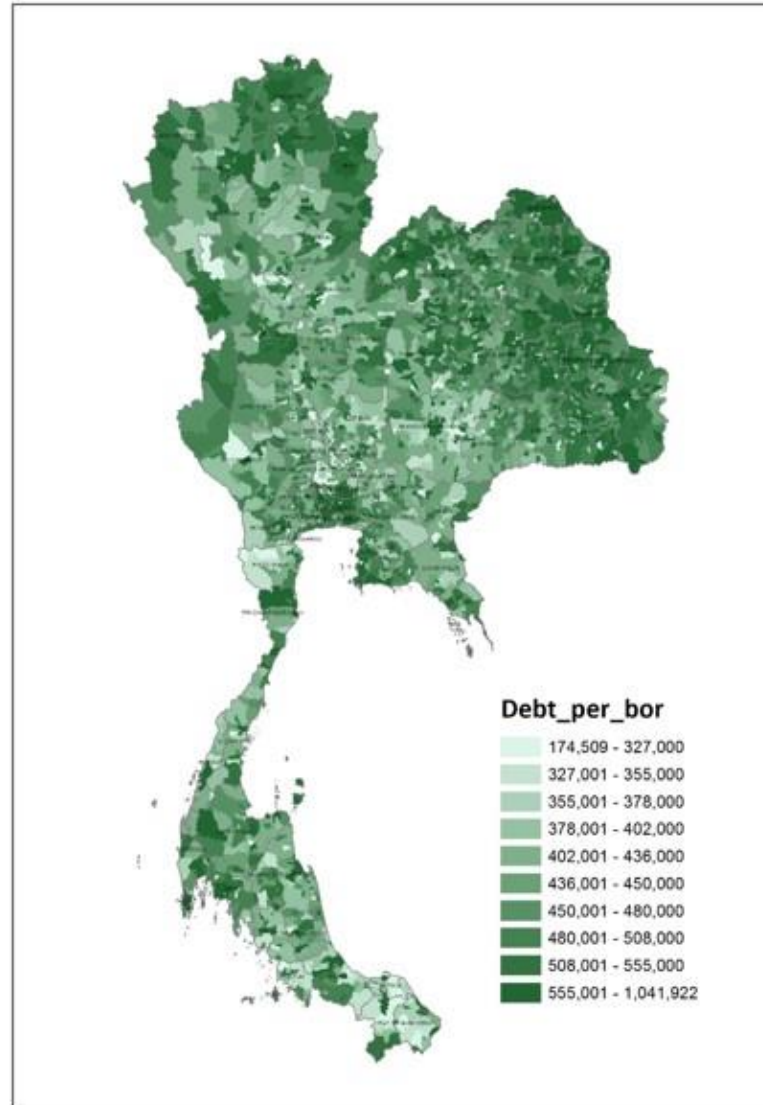
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❖ Catch-up growth (both access and debt per borrower) in credit in the Northeast

Debt Headcount

2016 (Q1)

Debt_headcount

- 1.02 - 10.00
- 10.01 - 20.00
- 20.01 - 30.00
- 30.01 - 40.00
- 40.01 - 50.00
- 50.01 - 60.00
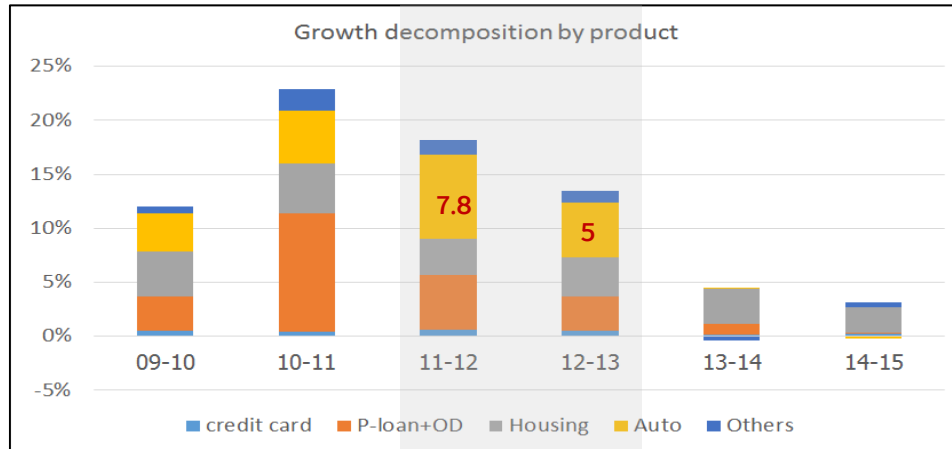- 60.01 - 70.00
- 70.01 - 100.00

Geographical distribution of debt growth (2009-2016)

❖ Catch-up growth (both access and debt per borrower) in credit in the Northeast

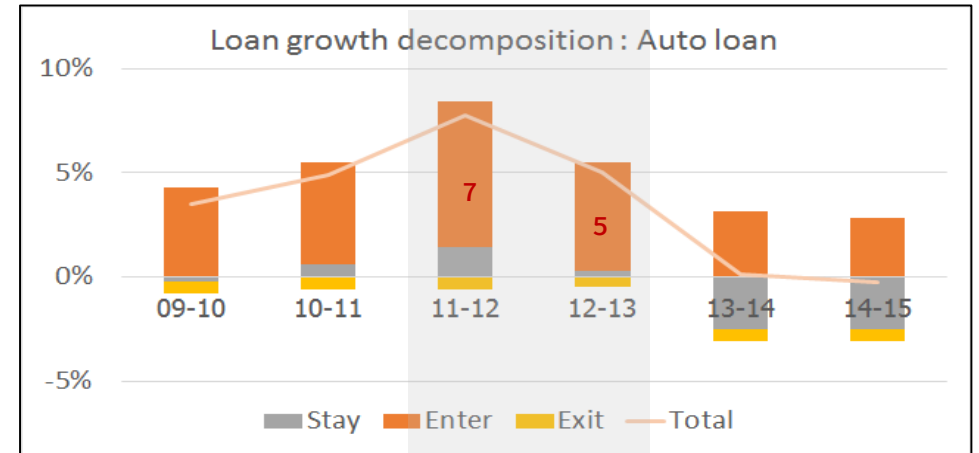Debt per borrower
2016(Q1)

Debt_per_bor

174,509 - 327,000
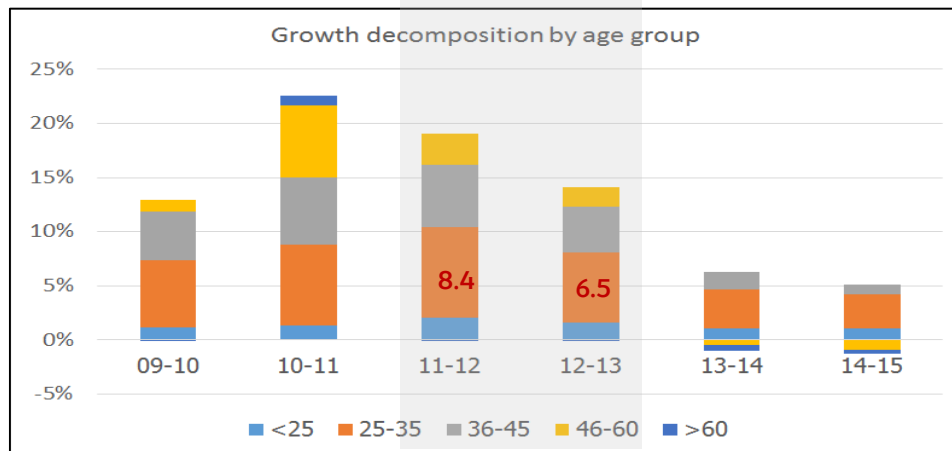327,001 - 355,000
355,001 - 378,000
378,001 - 402,000
402,001 - 436,000
436,001 - 450,000
450,001 - 480,000
480,001 - 508,000
508,001 - 555,000
555,001 - 1,041,922

Debt growth by product

Growth decomposition by product

7.8

5

credit card ■ P-loan+OD ■ Housing ■ Auto ■ Others

Debt growth by age

Growth decomposition by age group

8.4

6.5

■ <25 ■ 25-35 ■ 36-45 ■ 46-60 ■ >60

Growth of auto loan: by borrower type

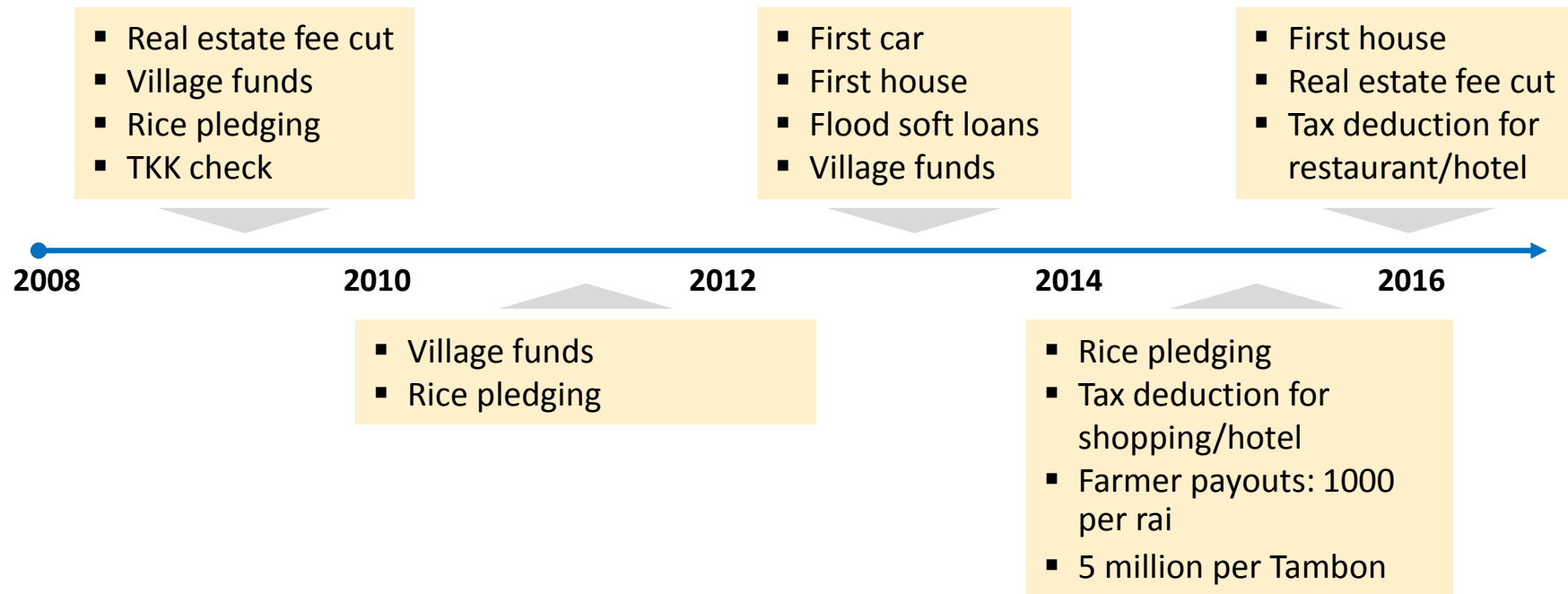Loan growth decomposition : Auto loan

7

5

■ Stay ■ Enter ■ Exit — Total

❖ Highest growth during 2010-2011

❖ 2013-2015 growth mainly from home loan

❖ 2011-2013 growth dominated by auto loan and age 25-35

❖ Unusual high contribution of new entry borrower to 2011-2013 auto loan growth

2) Using credit bureau data to understand potential impacts of fiscal stimulus

Thailand has seen a wide array of fiscal stimulus programs over the past decade

Thailand's major fiscal stimulus programs since 2008

- Real estate fee cut
- Village funds
- Rice pledging
- TKK check

- First car
- First house
- Flood soft loans
- Village funds

- First house
- Real estate fee cut
- Tax deduction for restaurant/hotel

2008   **2010**   **2012**   **2014**   **2016**

- Village funds
- Rice pledging

- Rice pledging
- Tax deduction for shopping/hotel
- Farmer payouts: 1000 per rai
- 5 million per Tambon

Here we use NCB statistical data to enhance our understanding of their effects on individuals and economy

Application: First-car tax rebate program

Overview of the first car program
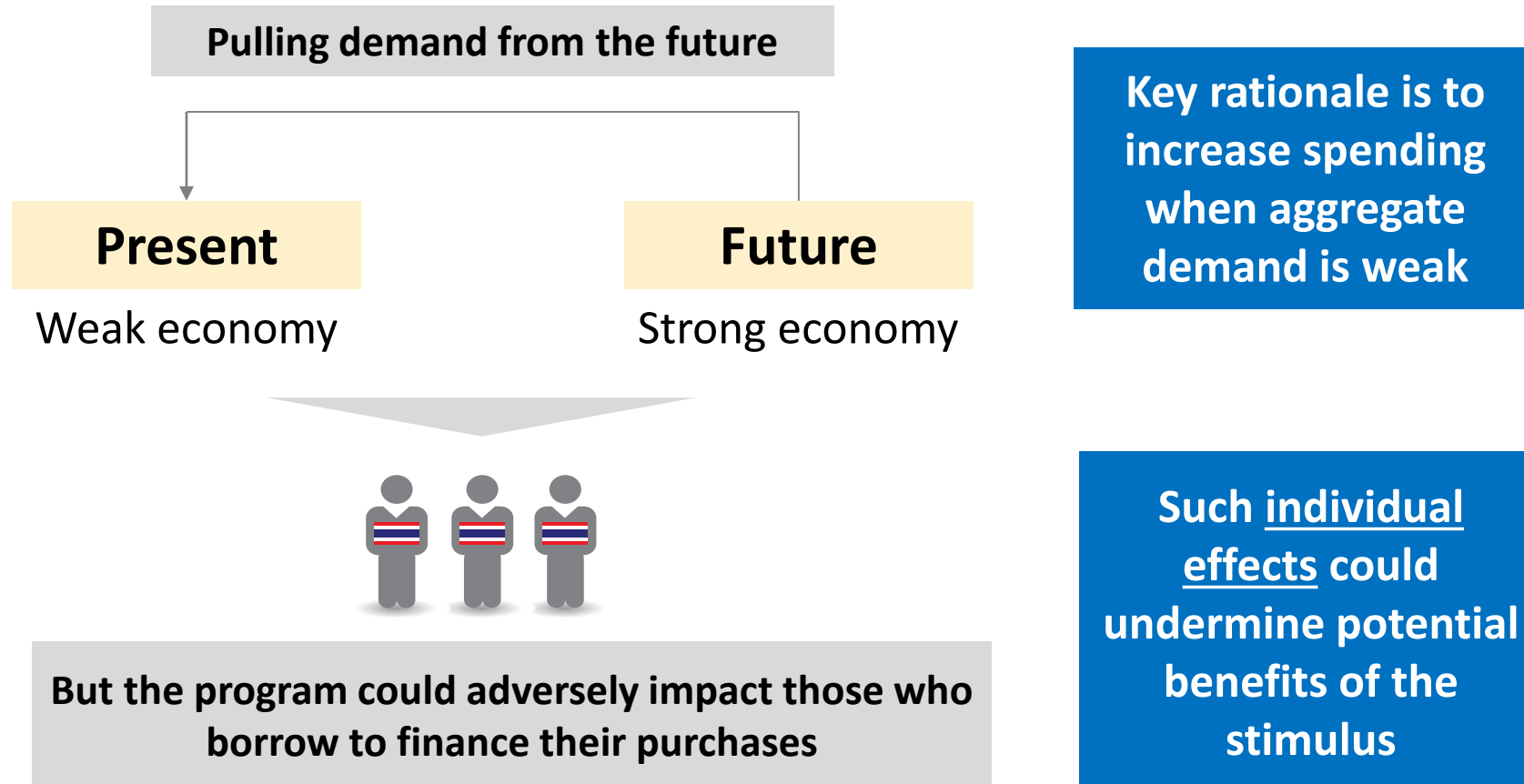
- An excise tax rebate for first-time car buyers
- Rebate of 50,000-100,000 baht
- Sep 2011-Dec 2012 (Over 90% bought cars by end of 2013)

Monetary incentives ◄------► **Purchase durable goods in a given time frame**
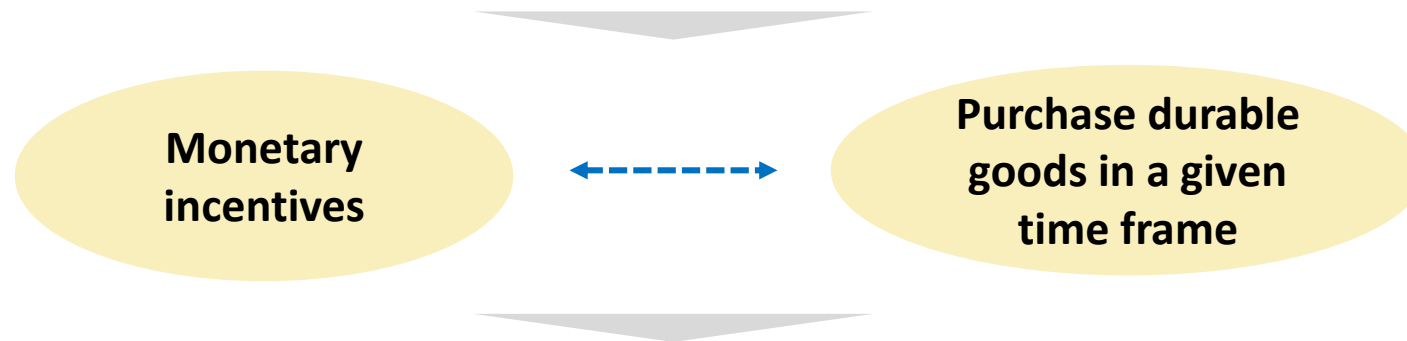
Durable goods stimulus

- Many countries introduced such programs to revive auto demand during the global financial crisis
- Details vary but most also had the aim of removing inefficient vehicles from the road
- US (2009), France (2009), Japan (2009-2010)

How could the first-car program help boost the economy?

Pulling demand from the future

Present

Weak economy

Future

Strong economy

But the program could adversely impact those who borrow to finance their purchases

Key rationale is to increase spending when aggregate demand is weak

Such _individual effects_ could undermine potential benefits of the stimulus

Overview of the study

Research Questions	Research Design

1

How does the first car rebate scheme affect loan performance/portfolio of individuals?

2

Does the scheme produce any measurable impacts on local economies?

- **Individual-level analysis**
  - Account-level quarterly panel data of accounts
  - Difference-in-Difference technique
  - Analyze responses before and after the purchase decision of Treatment vs. Control

- **Postcode-level analysis**
  - Quarterly panel data of post codes
  - Difference-in-Difference technique
 - Exploit nationwide variation in exposure to the program

Does the first car scheme impact loan performance/portfolio of participants?

Individual-Level Empirical Strategy

- **Treatment group** = First-time buyers who bought qualified models <u>during</u> the program period

- **Control group** = First-time buyers who bought qualified models <u>outside</u> the program period

- Compare the responses before and after the purchase decision

New loan probability before and after the first-car purchase (Treatment vs. Control)

Unit: %

The two groups moved almost parallel before the purchase decision
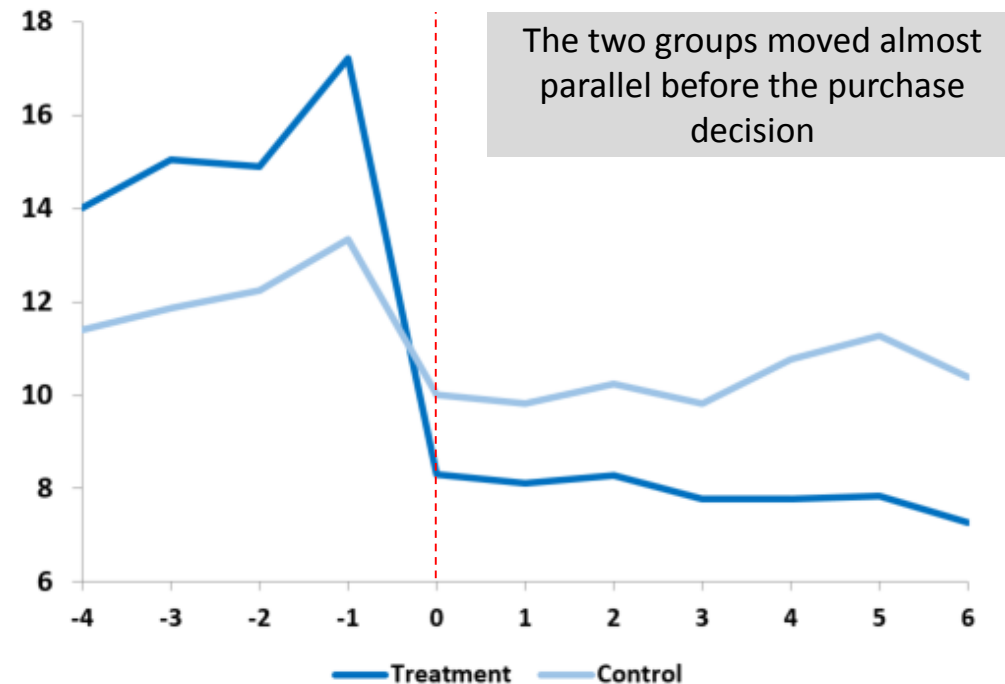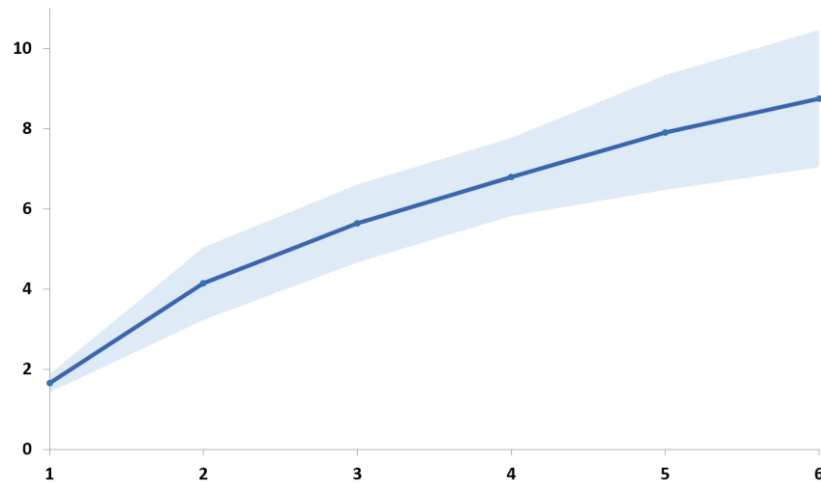
Quarters relative to the first-car purchase

Source: Authors' estimate

Results indicate higher delinquency probability for the first car scheme participants

**The delinquency probability is significantly higher on the first car..**

Change in delinquency probability on the first car of the treatment group relative to the control group (%)

..and there is also an evidence of higher delinquency on other loans

Change in delinquency probability on unsecure loans of the treatment group relative to the control group (%)
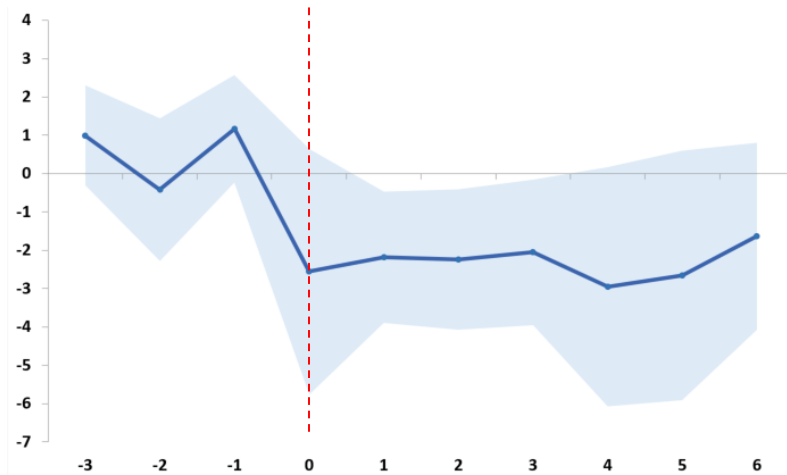

Quarters relative to the first-car purchase
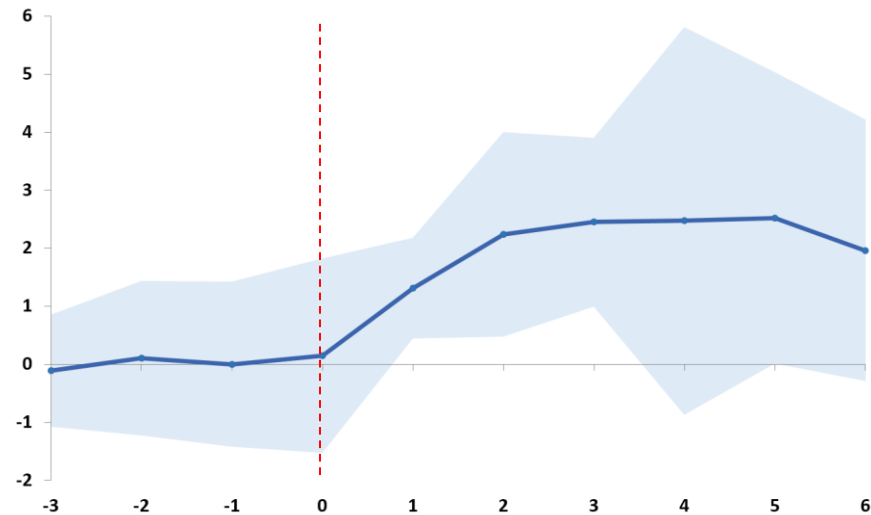
Quarters relative to the first-car purchase

The results suggest that the first car program might have encouraged individuals to prematurely originate auto loans

Notes: 1) The shaded band indicates 90% confidence level. 2) Unsecure loans include credit card, personal and OD loans
Source: Authors' estimate

The first car scheme participants also have significantly lower new loan probability

The overall new loan probability is significantly lower for the treatment group..
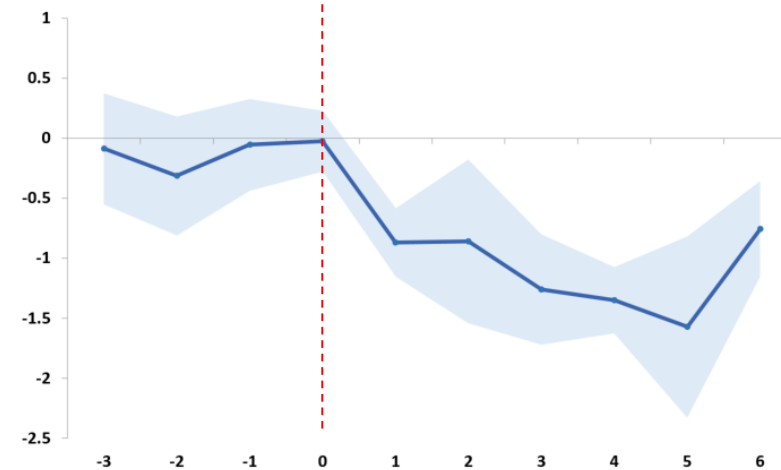
Change in new loan probability on all loans of the treatment group relative to the control group (%)

Quarters relative to the first-car purchase

..with the effect being more evident on secure loans

Change in new loan probability on secure loans of the treatment group relative to the control group (%)


Quarters relative to the first-car purchase

Notes: 1) The shaded band indicates 90% confidence level. 2) Secure loans include mortgage and hire purchase loans.
Source: Authors' estimate

# The effects on new loan probability are evidently different between buyers of passenger cars and trucks

The fall in new loan probability concentrates only among passenger car buyers,

Change in new loan probability on all loans of the treatment group relative to the control group (%)

Passenger Cars

Quarters relative to the first-car purchase
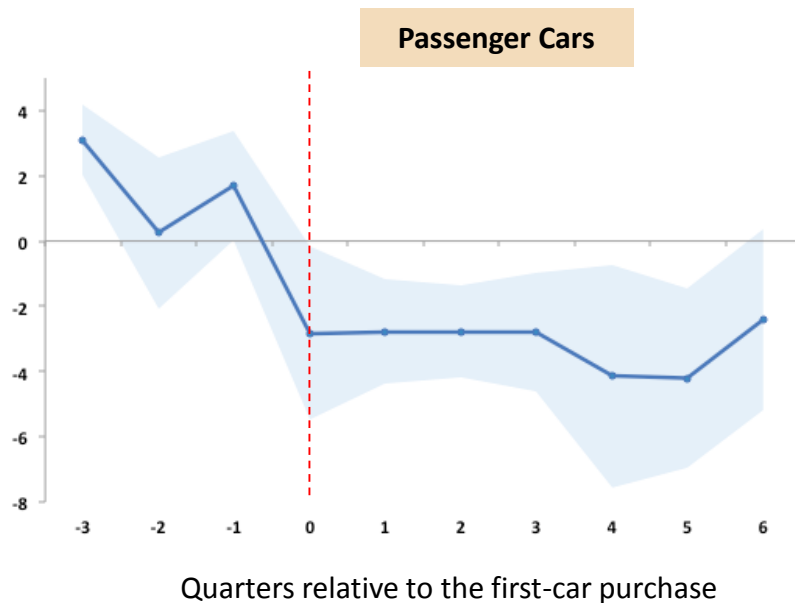
.. with no impact among truck buyers

Change in new loan probability on all loans of the treatment group relative to the control group (%)
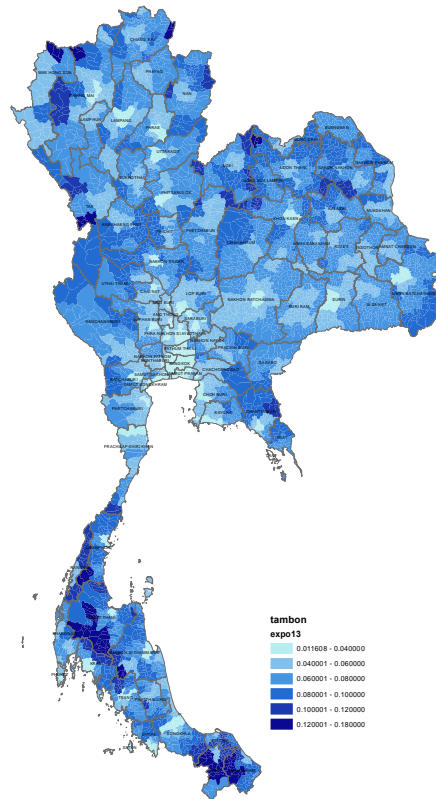
Trucks

Quarters relative to the first-car purchase
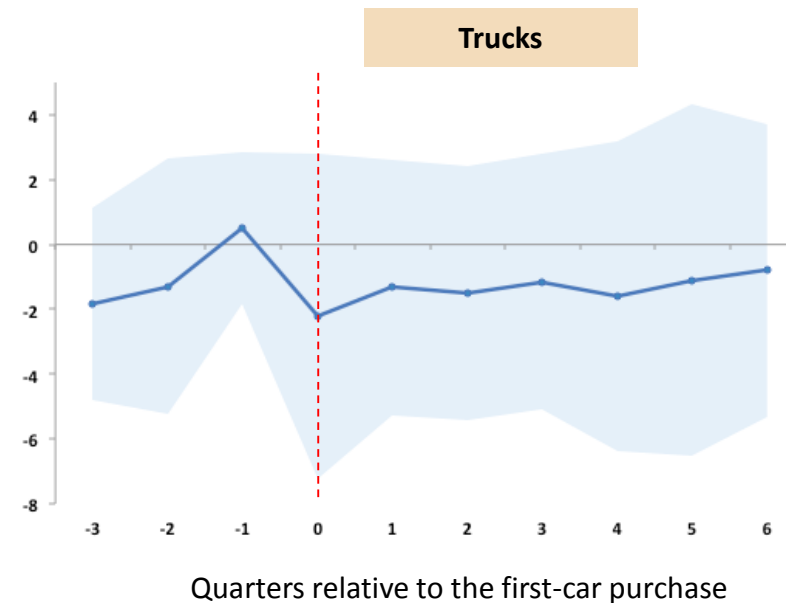
While the program crowds out new loans when the stimulus was on consumer durables, there was no impact for subsidies to productive business durables

Notes: The shaded band indicates 90% confidence level.
Source: Authors' estimate

Does the first car scheme produce any measurable effect on local economies?

Share of first-car scheme participants across postcodes

Darker shading indicates higher share of program participants

tambon
expo13
- 0.011608 - 0.040000
- 0.040001 - 0.060000
- 0.060001 - 0.080000
- 0.080001 - 0.100000
- 0.100001 - 0.120000
- 0.120001 - 0.180000

Postcode-Level Empirical Strategy

- Utilize postcode-level quarter data on loan growth and delinquencies

- Exposure variable = Share of the number of first-car program participants to the total number of borrowers

- Significant variation in the exposure to the program across the nation—the share ranges from 2% to 18%.

Source: Authors' estimate

# The first car program produces significantly adverse impacts on local economies

Areas with higher exposure experience significantly lower loan growth..

Estimates of the effects of the first car program on loan growth (%)

-0.35

-0.49

-0.17

All   Auto   Non-Auto
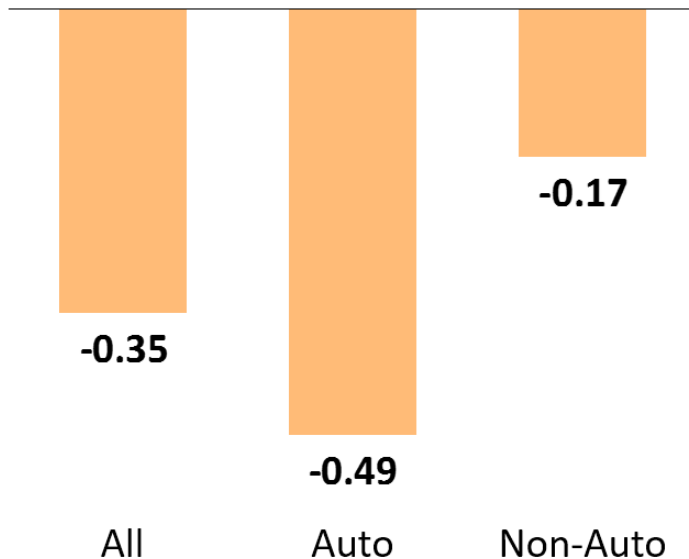
.. and higher delinquency rates

Estimates of the effects of the first car program on delinquency share (%)

0.30

0.31

0.17

All   Auto   Non-Auto
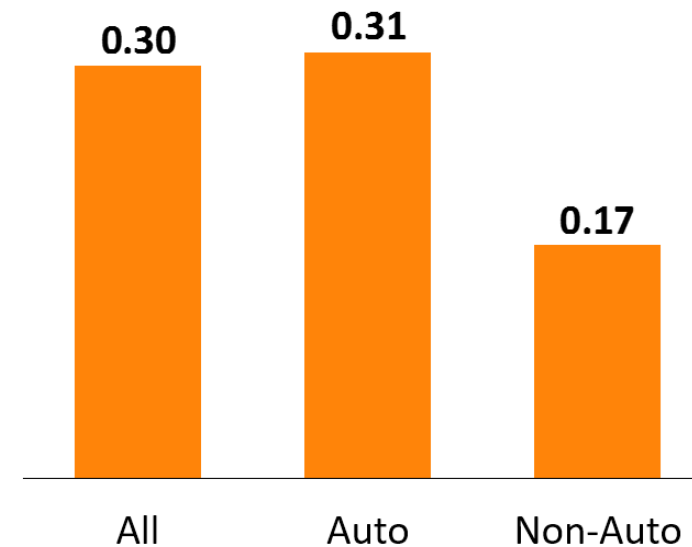
These results could be driven by both participants themselves as well as spillover effects to other borrowers

Note: The figures show coefficients on the interaction between the share of program participants and the dummy indicating post-program periods, controlling for postcode, year and province-year fixed effects.

Key Takeaways

1 Significant adverse effects on program participants—undermining potential stimulus benefits

2 Important distinction between consumer and business durables—more limited negative effects among truck buyers

3 Possible spillover effects—areas with more program exposure have experienced lower loan growth and higher delinquencies

4 Administrative micro-level data could help inform policymakers on the design of future fiscal stimulus programs