# Save more or less? The impact of government health insurance change on saving behavior

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## Background

- Chinese households have a high saving rate: More than 25% of income
- Three major burdens: housing, education, and **health care**

### China health insurance policy

- Most Chinese rely on government-provided health insurance
- Government-provided insurance coverage: 93.6%
- Private insurance coverage: 2.7%

### How it works

- Dual-pay system: insurance + self-payment
- Limit in the basic plan
- **Serious sickness insurance (SSI) as an additional medical insurance to reimburse the part over the ceiling of basic plan**
- Different cities introduced the SSI in different years
- Staggered shock

## Results summary

1. How does the introduction of universal insurance influence household budgeting behaviour?
   - The introduction of SSI causes an increase in household consumptions
   - The SSI introduction relieves the household burden of out-of-pocket medical expenses
   - Effects on the total medical treatment varies across different wealth groups
   - Such effects are different between sick and non-sick households
   - Households' investment in stocks increases after the introduction of SSI, only in amount but not in participation rate
2. Are the effects different across groups?
   - The wealthy and urban households consume more from the policy
   - Effects on the total medical treatment varies across different wealth groups
   - The channel regimes vary across different wealth groups

## Data

### CHARLS

- 26 provinces and 123 cities in China
- Sample aged above 45 years old
- Four panels: 2011, 2013, 2015, 2018
- Wide coverage of topics Income and consumption, Medical insurance, Life expectancy, Health status, Health history

### Serious sickness insurance

- Hand-collect data of the introduction years
- From local government websites/ official documents
- 2011-2016
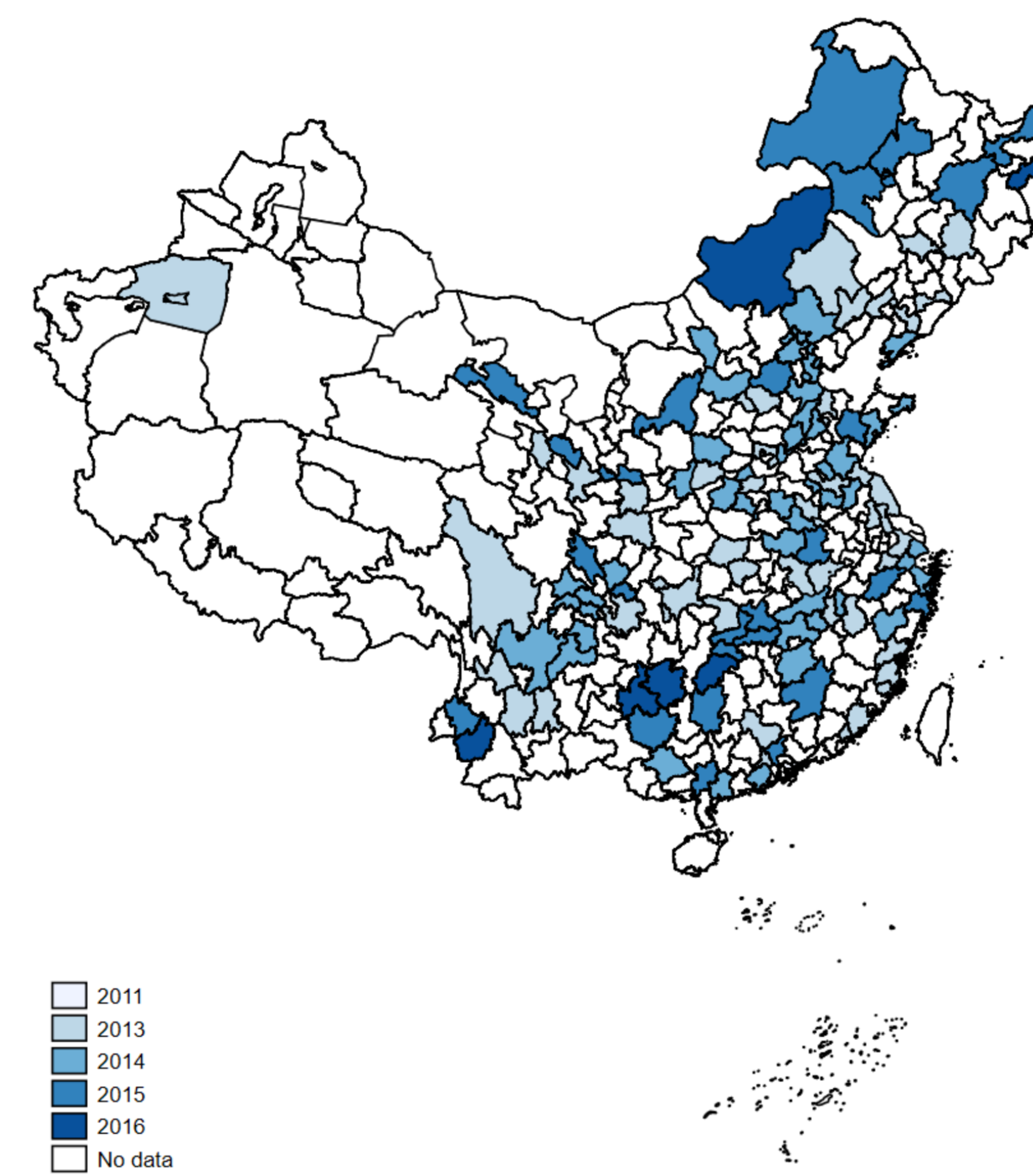- 123 cities in CHARLS
- Additional insurance

## Measurement

- Household consumptions
- Out-of-pocket medical expenditure - Medical burden
- Total medical expenditure before insurance - Medical treatment served
- Life expectancy

## Empirical strategy - Staggered DID

$$y_{i,j,t} = \beta_0 + \beta_1 \times I_{j,t} + \gamma X_i + \alpha_j + \delta_t + \varepsilon_{i,j,t}$$

- $y_{i,j,t}$: variable to be explained
- $I_{j,t}$: dummy of the introduction of SSI of city i at time t
- $X_i$: household level control, including the respondent's and spouse's gender, age, education level, household registration (hukou) type, insurance coverage
- $\alpha_j$ and $\delta_t$: city level fixed effect and time fixed effect
- $\varepsilon_{i,j,t}$: error term

## SSI introduction



2011
2013
2014
2015
2016
No data

All cities in Mainland China included SSI after 2016. No data only means this city is included in the CHARLS survey.

## Effect on the whole sample

| SSI Effects | Whole Sample | Non-sick | Sick |
|---|---|---|---|
| Consumption | 0.0657** (0.0282) | 0.0822** (0.0364) | 0.0428 (0.0447) |
| OOP_Medical | -762.8* (451.8) | -342.0 (436.2) | -1,630* (913.6) |
| Total_Medical | 352.9* (180.1) | 142.1 (189.4) | 471.7 (499.0) |
| Life_Expectancy | 0.0515 (0.0504) | 0.0594 (0.0666) | 0.00720 (0.0740) |

- **Consumption:** Whole sample increases; Only significant for non-sick households
- **Actual medical expense:** Whole sample decreases; Only significant for sick households
- **Total medical treatment:** Whole sample increases; Not significant for either sub-group

## A highlighted block containing some math

| Wealth Quantile | Q1 | Q2 | Q3 | Q4 |
|---|---|---|---|---|
| Consumption | 0.122 | 0.0132 | 0.0752 | 0.134* |
| (Non-sick Group) | (0.102) | (0.0826) | (0.0750) | (0.0725) |
| OOP_Medical | -1,086 | -247.2 | 1,533 | -5,410** |
| (Sick group) | (1,571) | (934.1) | (1,268) | (2,408) |
| Total_Medical | -797.2 | 2,638** | 2,211** | -3,332 |
| (Sick group) | (1,541) | (1,244) | (1,003) | (3,018) |
| Life_Expectancy | 0.106 | 0.179 | 0.116 | -0.0490 |
| (Whole Sample) | (0.116) | (0.121) | (0.140) | (0.142) |

- **Consumption:** Increase for non-sick households in the most wealthy quantile
- **Actual medical expense:** Decrease for sick households in the most wealthy quantile
- **Total medical treatment:** Increase for sick groups the middle two quantiles

## Various effects across wealth levels
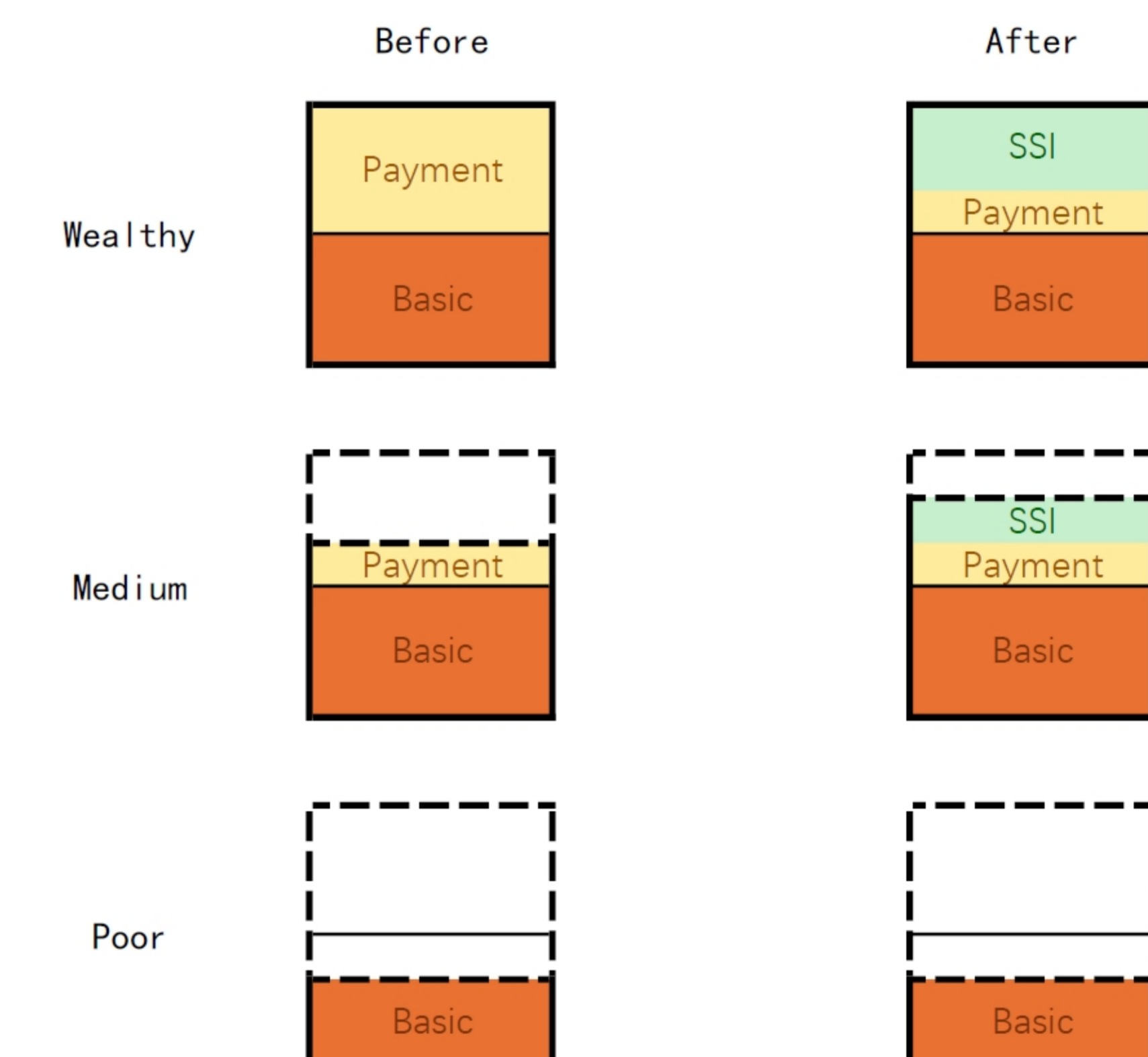


## Effect on portfolio compositions

| Portfolio | Q1_coef | Q1_pval | Q2_coef | Q2_pval | Q3_coef | Q3_pval | Q4_coef | Q4_pval |
|---|---|---|---|---|---|---|---|---|
| cash | 226.28614 | 0.5851 | -183.69589 | 0.8144 | -2189.1643 | 0.2863 | -15230.638 | 0.1760 |
| stock | 339.68659 | 0.0000 | 333.68471 | 0.0001 | 1039.6787 | 0.0033 | -2402.2855 | 0.5285 |
| gov bonds | 35.621015 | 0.6668 | 123.62494 | 0.0004 | -136.09609 | 0.0009 | -612.0361 | 0.5474 |
| other savings | 2153.5144 | 0.1404 | -668.13326 | 0.0346 | -2007.6316 | 0.1049 | 4222.3389 | 0.5291 |
| other real estate | 68.846643 | 0.9666 | -673.47496 | 0.4714 | 1568.3349 | 0.5746 | -262042.84 | 0.6082 |
| primary residence | 74.372064 | 0.9824 | 1241.1022 | 0.5806 | -17513.572 | 0.0003 | -397385.25 | 0.3620 |
| vehicles | 1855.0858 | 0.0046 | -239.72918 | 0.5531 | -951.7592 | 0.4014 | -4300.5591 | 0.4492 |
| non-financial assets | 55.619444 | 0.7543 | 233.33663 | 0.2262 | 139.1778 | 0.7232 | -2497.3409 | 0.8669 |
| fixed capital | -2200.925 | 0.4863 | -895.7904 | 0.0722 | -1946.8366 | 0.0399 | -6155.8547 | 0.8042 |
| land | -258.21532 | 0.1437 | -142.46535 | 0.5288 | 1641.8635 | 0.0038 | 39473.138 | 0.1858 |
| monetary assets | 3019.6544 | 0.5145 | 548.81231 | 0.6124 | 8137.078 | 0.0001 | 18346.409 | 0.2375 |
| debt | 7520.9663 | 0.5119 | -893.24081 | 0.5211 | -8446.2201 | 0.0021 | 4962.5902 | 0.4978 |

- Stock investment amount increases for Q1 Q2 Q3
- No effect on the participation rate