

# The Impact of Minimum Wage Increases on Consumption, Savings and Income in China

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## Research Objectives

- Study the impact of MW hikes on household consumption, savings and income
- Evaluate the heterogeneity of the impact among different groups of labor income earners
- Evaluate the effectiveness of the 2004 Labor Law Regulation on MW compliance

## Data

- Minimum wage data provided by the Ministry of Labor and the Chinese Academy of Labor and Social Security, collected at *county*-level.
- We merge the MW data with the national Urban Households Survey (UHS), nationally representative survey of workers and households in China conducted by the National Bureau of Statistics (NBS)
- For this paper we restrict our analysis to eight consecutive years of the UHS from 2002 to 2009.

## Identification Strategy

### Shock:

- Hike in MW used as exogenous shock to labor income, conditional on The 2004 Labor Law Regulation MW setting rules

### The Labor Law Regulation:

- Minimum living costs of local employees and their dependents (Min HH living expenditure)
- The consumer price index for urban residents (city price index)
- The average wage of employees in the locality (city salary)
- Level of economic development and the supply and demand of labor in the locality (city GDP and city unemployment)

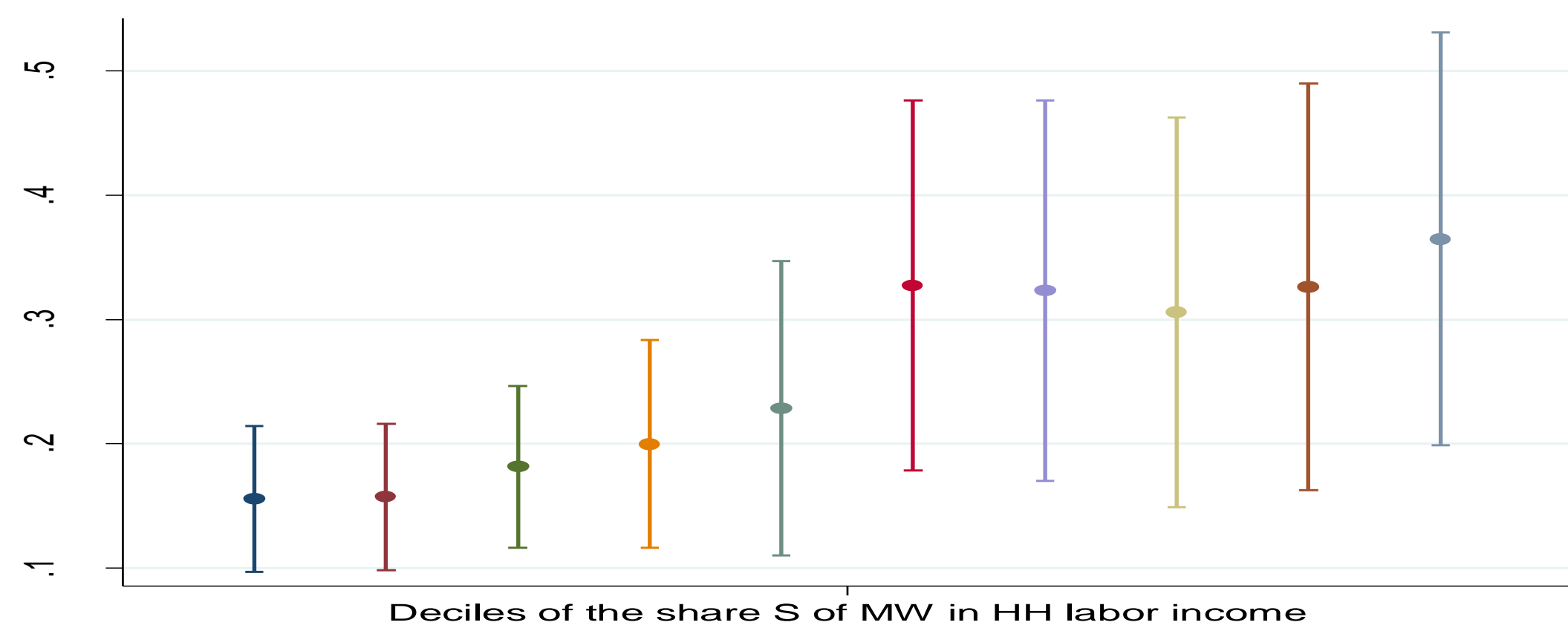
## Group Definitions

- **Treated Group:** workers earning salary in  $0.5 \text{ MW} < \text{wage} < 1.5 \text{ MW}$  range and in the first year they are observed - *ripple effect* (Card and Krueger, 1995)
- Divide households in two main groups, those not receiving any share  $S$  of their total income from minimum wage workers, and those having some of total income from minimum wage earners.
- We control for confounding factors and endogeneity by including city economic conditions as controls
- Results are robust to, and effects stronger for, other threshold levels below 1.5 of the minimum wage; thresholds above 1.5 have not been investigated.

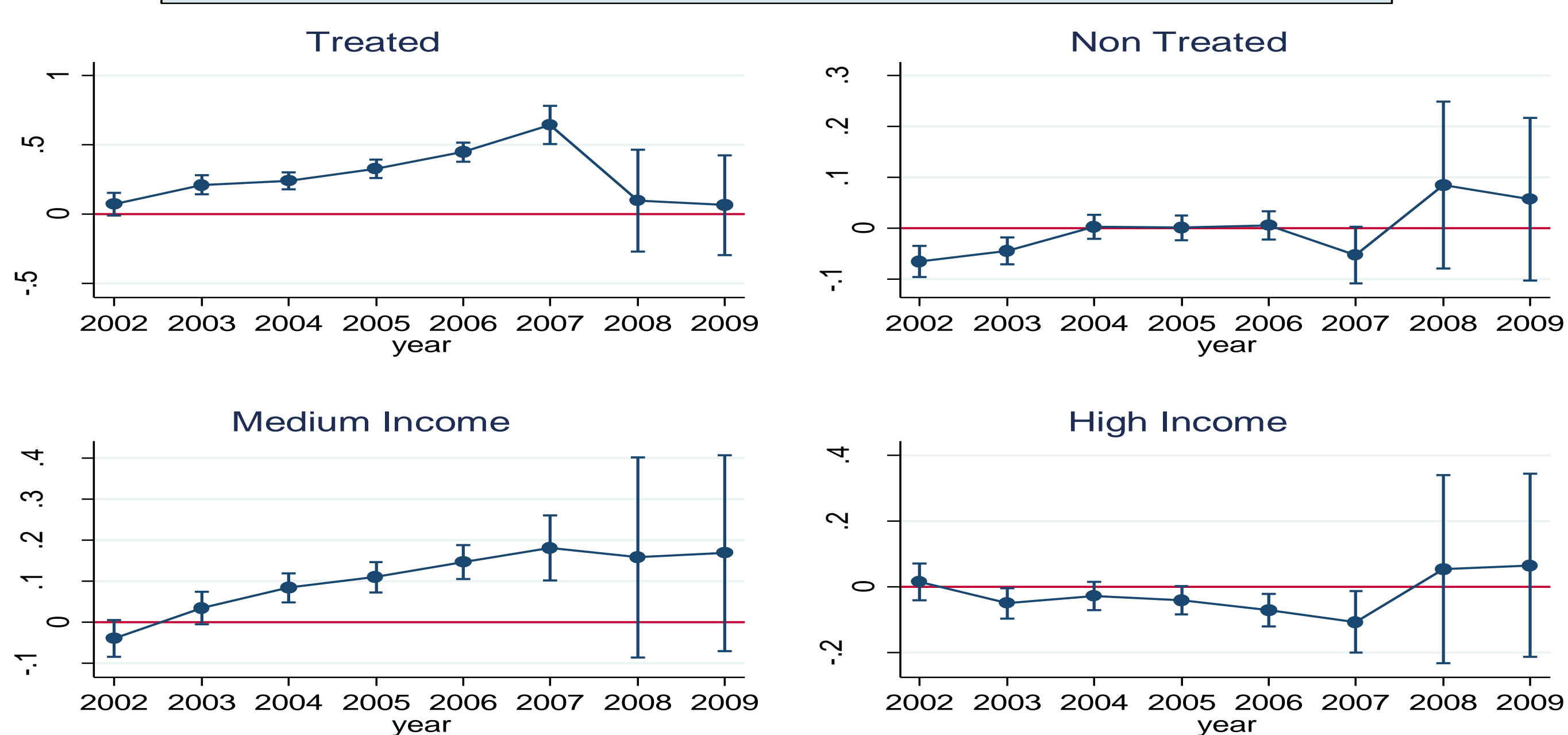
## Labor Income

Effect of MW on Households Income (yes city controls) Treatment  $0.5 < x < 1.5$

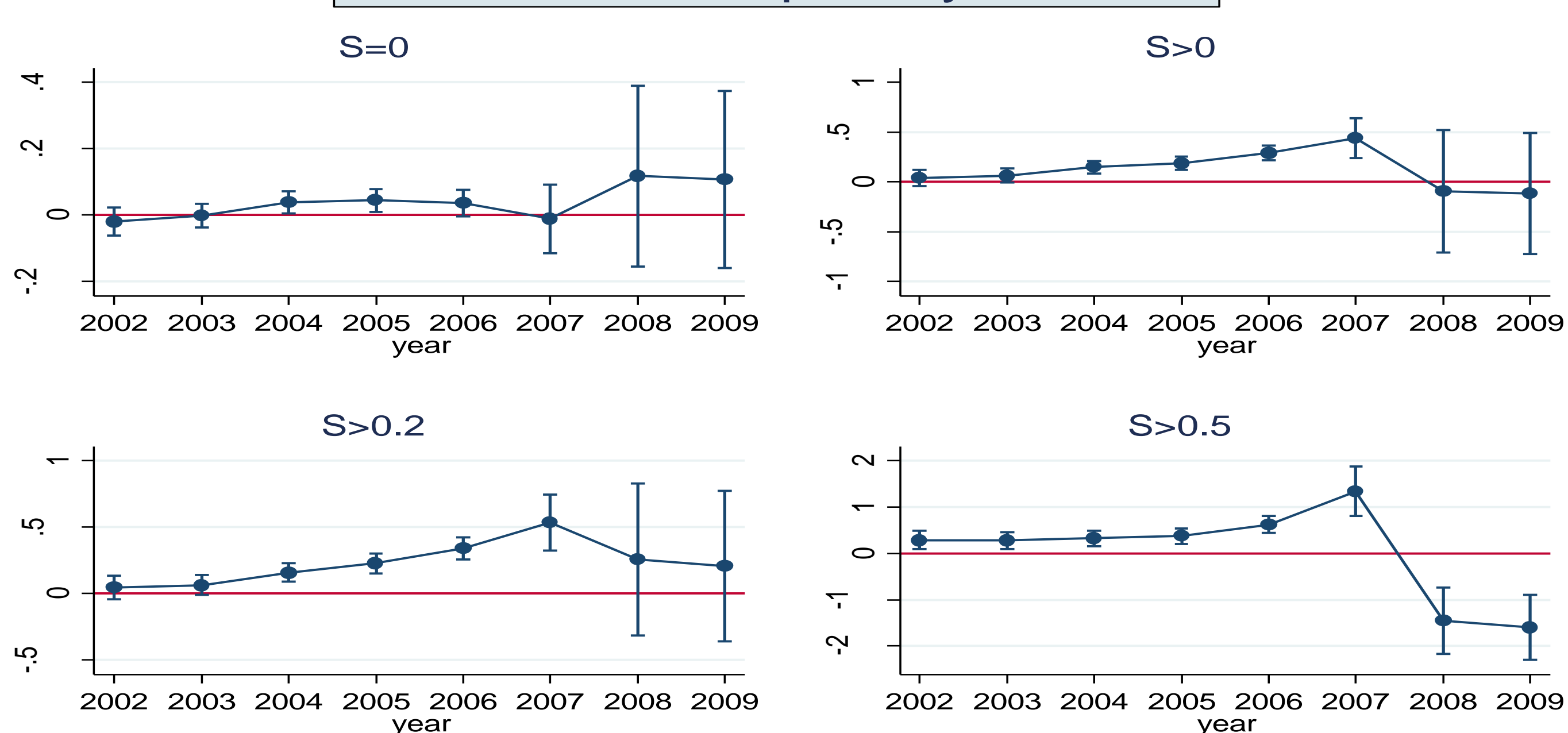
|              | (1)                  | (2)                | (3)                  | (4)                | (5)                   | (6)                  | (7)                  | (8)                  |
|--------------|----------------------|--------------------|----------------------|--------------------|-----------------------|----------------------|----------------------|----------------------|
|              | Treated              | Non-Treated        | MI                   | HI                 | S=0                   | S>0                  | S>0.2                | S>0.5                |
| Eff Real MW  | 0.2668***<br>(0.092) | 0.0320*<br>(0.019) | 0.1075***<br>(0.040) | -0.0199<br>(0.049) | 0.0363*<br>(0.019)    | 0.1557***<br>(0.036) | 0.1814***<br>(0.040) | 0.3274***<br>(0.090) |
| Observations | 3,922                | 53,970             | 12,849               | 9,097              | 51,976                | 19,893               | 16,896               | 4,425                |
| R-squared    | 0.495                | 0.305              | 0.377                | 0.202              | 0.294                 | 0.421                | 0.444                | 0.530                |
| N. of HH     | 1,784                | 22,507             | 5,349                | 3,799              | 21,117                | 8,217                | 6,981                | 1,908                |
| Chow Test    | F-stat 82.98 p=0.000 |                    |                      |                    | F-stat 321.73 p=0.000 |                      | F-stat 60.00 p=0.000 |                      |



## Enforcement Impact on Worker Labor Income



## Enforcement Impact by Share S



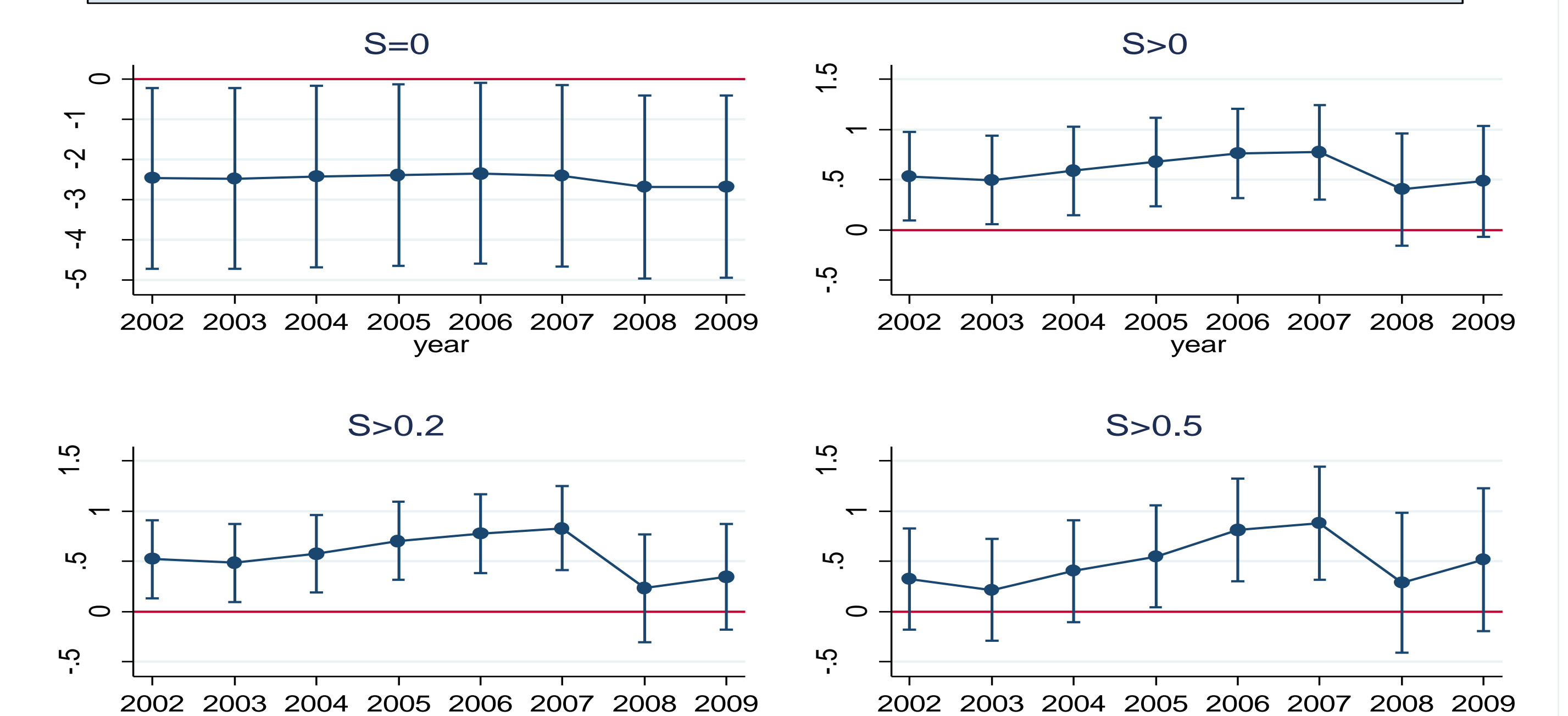
Std Err. computed with Delta Method, C.Level 95%. HH FE, Year FE, Industry FE, City Controls

## Total Consumption

Second Stage IV Regression: Effect of MW on Households Expenditure - Worker Level

|                | (1)                | (2)                | (3)                 | (4)                | (5)                 | (6)                | (7)                | (8)              |
|----------------|--------------------|--------------------|---------------------|--------------------|---------------------|--------------------|--------------------|------------------|
|                | TR                 | NT                 | MI                  | HI                 | S=0                 | S>0                | S>0.2              | S>0.5            |
| Fitted Wage    | 0.453**<br>(0.211) | -4.898*<br>(2.794) | 0.796***<br>(0.249) | 1.490**<br>(0.712) | -2.840**<br>(1.368) | 0.529**<br>(0.269) | 0.523**<br>(0.236) | 0.372<br>(0.310) |
| N              | 38397              | 177154             | 76715               | 50846              | 112815              | 43686              | 37219              | 10277            |
| R <sup>2</sup> | 0.181              | 0.079              | 0.113               | 0.045              | 0.067               | 0.162              | 0.187              | 0.256            |
| N.Workers      | 15929              | 71798              | 30973               | 20680              | 44813               | 17550              | 14972              | 4245             |
| tstat FS MW    | 5.16               | 0.46               | 5.13                | -2.11              | 1.1                 | 4.56               | 5.09               | 3.54             |

## Impact on HH Expenditure by Share S of MW Income



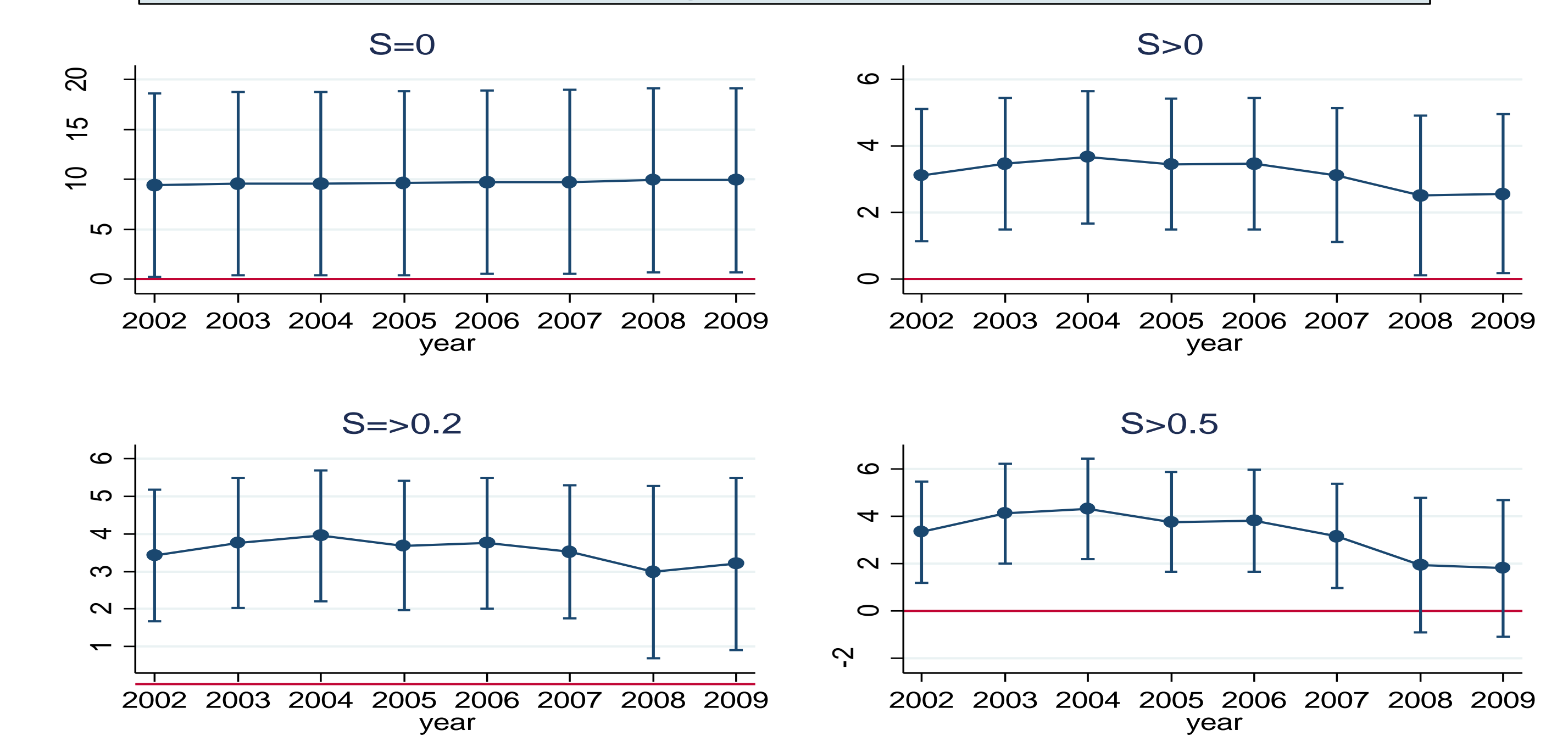
Std Err. computed with Delta Method, C.Level 90%. HH FE, Year FE, Industry FE, City Controls

## Savings

Second Stage IV Regression: Effect of MW on Households Savings - Worker Level

|                | (1)                | (2)                 | (3)              | (4)                | (5)              | (6)                 | (7)                 | (8)                 |
|----------------|--------------------|---------------------|------------------|--------------------|------------------|---------------------|---------------------|---------------------|
|                | TR                 | NT                  | MI               | HI                 | S=0              | S>0                 | S>0.2               | S>0.5               |
| Fitted Wage    | 1.750**<br>(0.889) | 23.79**<br>(11.521) | 1.693<br>(1.082) | -4.899*<br>(2.711) | 9.162<br>(5.574) | 3.395***<br>(1.198) | 3.625***<br>(1.052) | 3.835***<br>(1.274) |
| N              | 20901              | 100495              | 42472            | 30350              | 64546            | 23010               | 19610               | 5646                |
| R <sup>2</sup> | 0.071              | 0.030               | 0.044            | 0.017              | 0.026            | 0.070               | 0.081               | 0.137               |
| N.Worker       | 11794              | 54835               | 23331            | 16306              | 34434            | 12853               | 10962               | 3151                |

## Impact on HH Savings by Share S of MW Income



Std Err. computed with Delta Method, C.Level 90%. HH FE, Year FE, Industry FE, City Controls

## Findings:

1. The MW increases have a positive effect on income, consumption and savings of the treated households and workers
2. The lower end of the income distribution benefits the most, consuming the biggest share of the increase (permanent shock)
3. Positive effects are noticeable also on the middle class
4. The 2004 Labor Law Regulation on MW compliance worked very well by increasing the positive externalities for the Chinese families
5. The positive spillovers vanish after 2-3 years, to determine whether due to the financial crisis or an attenuation effect