

THE ECONOMIC IMPACT OF A VERY HIGH NATIONAL MINIMUM WAGE

EVIDENCE FROM THE 1966 FAIR LABOR STANDARDS ACT

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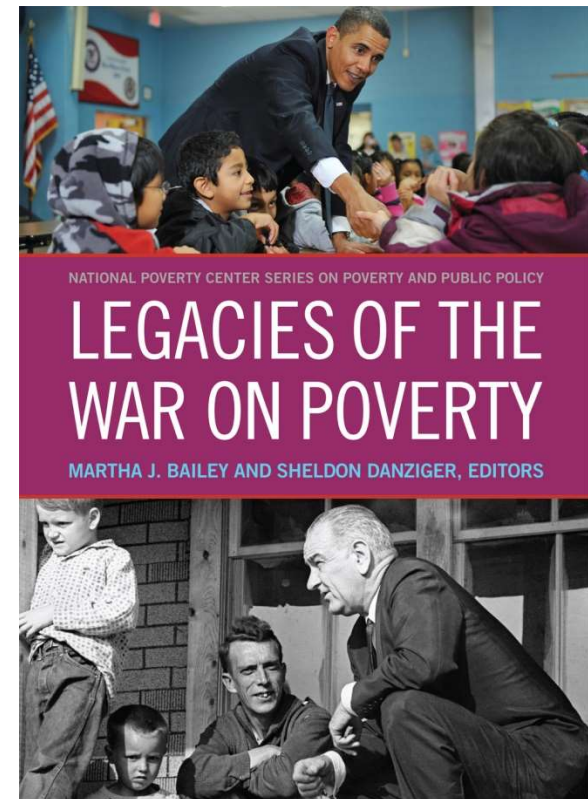
THE WAR ON POVERTY



- Johnson declared an “unconditional war on poverty” in his first State of the Union address (Jan. 1964)
 - Landslide victory in ‘64 + most liberal Congress since New Deal

MY WORK ON THE WAR ON POVERTY

- Book: Legacies of the War on Poverty
(co-edited with Sheldon Danziger, 2013)
- Political economy of War on Poverty
(with Duquette, 2013, JEH)
- Family planning (Bailey 2012, Bailey 2013,
Bailey Malkova and McLaren 2016)
- Community Health Centers
(with Goodman-Bacon, 2015, AER)
- Food Stamps
(with Hoynes, Rossin-Slater and Walker)
- Head Start (with Shuqiao Sun)
- **Today: The 1966 Amendments to the Fair Labor Standards Act**
(with DiNardo and Stuart)



Why Study Minimum Wage?

“The employment effects of the minimum wage are one of the most studied topics in all of economics. This report examines the most recent wave of this research – roughly since 2000 – to determine the best estimates of the impact of increases in the minimum wage on the employment prospects of low-wage workers. The weight of that evidence points to little or no employment response to modest increases in the minimum wage.”

~John Schmitt, Center for Economic Policy Research

Why Study Minimum Wage?

“Economists have written scores of papers on the topic dating back 100 years, and the vast majority of these studies point to job losses for the least-skilled. They are based on fundamental economic reasoning—that when you raise the price of something, in this case labor, less of it will be demanded, or in this case hired.”

~David Neumark, 2015

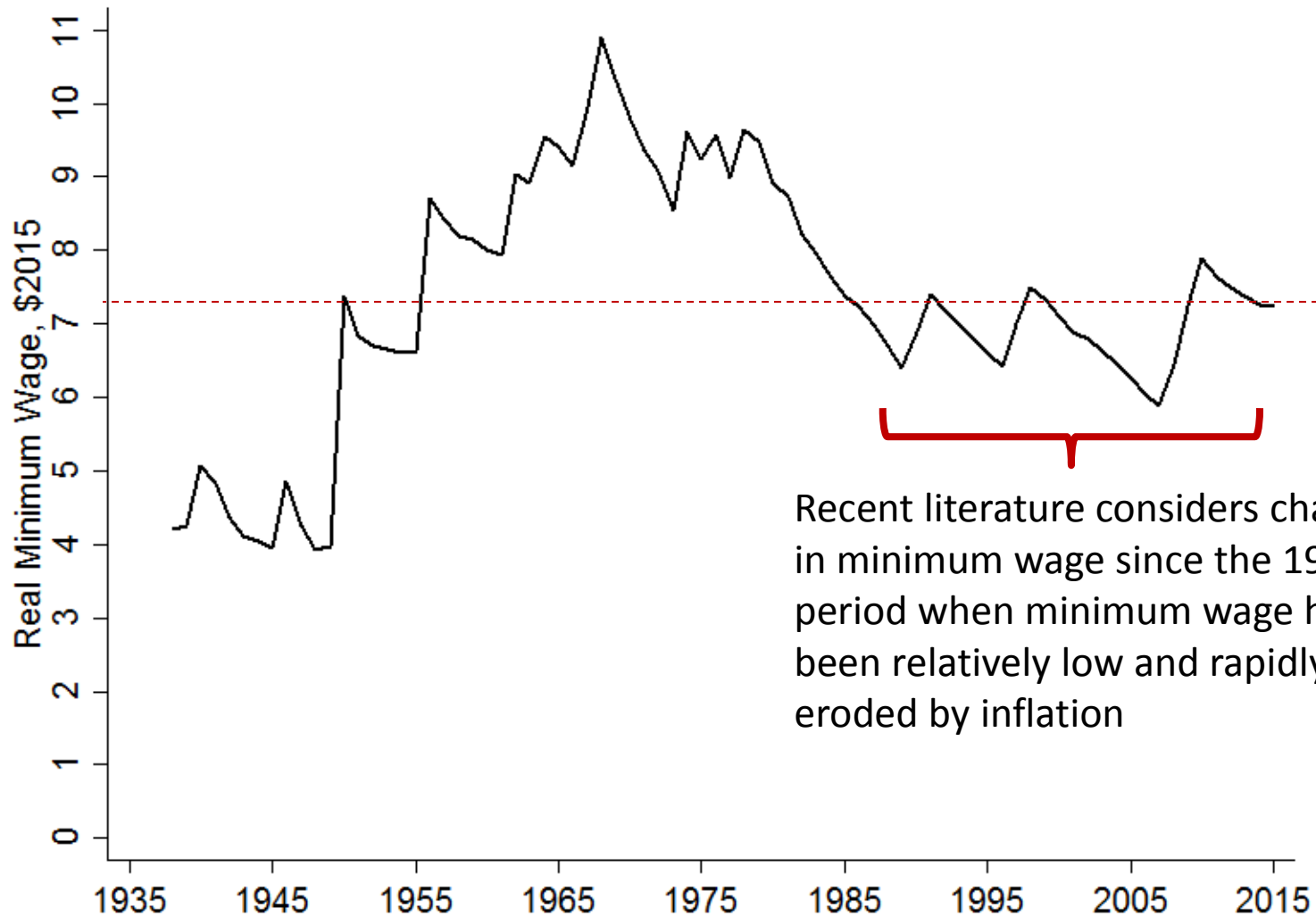
Area of Active Debate

- Large epistemic divides in economics relate to...
- Measurement
 - How to identify affected groups (teens or others)?
 - How to construct the comparison group?
 - Correct econometric specification (e.g., state trends or polynomials, local controls or border comparisons, how to capture dynamic effects (Neumark, Salas, and Wascher 2014; Allegretto, Dube, Reich, Zipperer forthcoming))
- Theory
 - Perfectly competitive v. monopsonistic competition?
- These divisions are deep but not the subject of this paper

This Paper's Contribution

- Revisit the economic effects of the 1966 Amendments to the Fair Labor Standards Act (1966 FLSA)
 - 20th century's highest minimum wage: 1968 reached \$10.90 (from ~\$8.50) versus \$7.25 today (\$2015)
 - Increase in wages of ~28% for covered workers
 - Increases in coverage make the effective hike even larger
 - Coverage expanded by 9 million workers, from 60 to 80 % of workers in many of the lowest earning industries

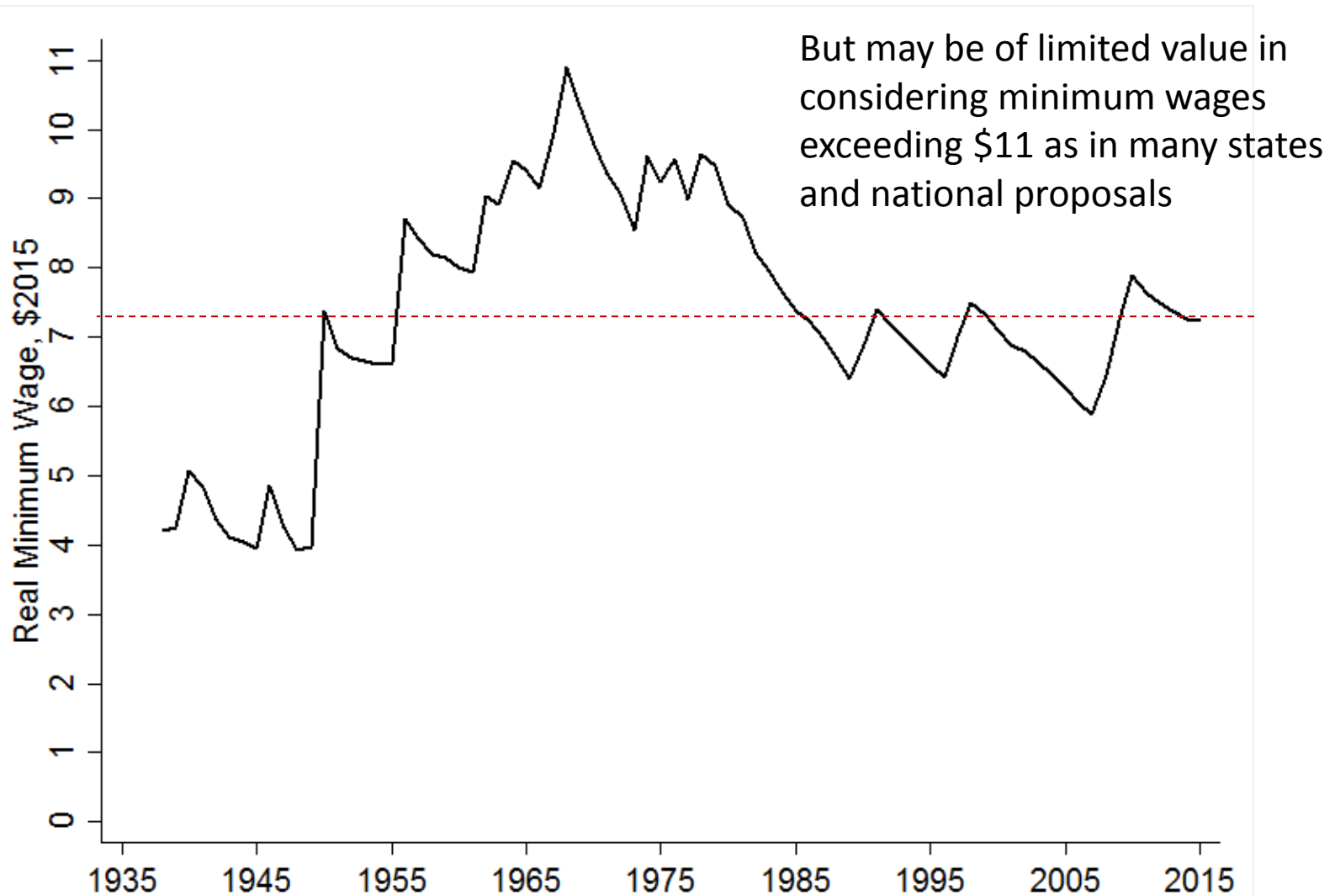
Real Minimum Wages Peak in 1968



Recent literature considers changes in minimum wage since the 1980s, a period when minimum wage has been relatively low and rapidly eroded by inflation

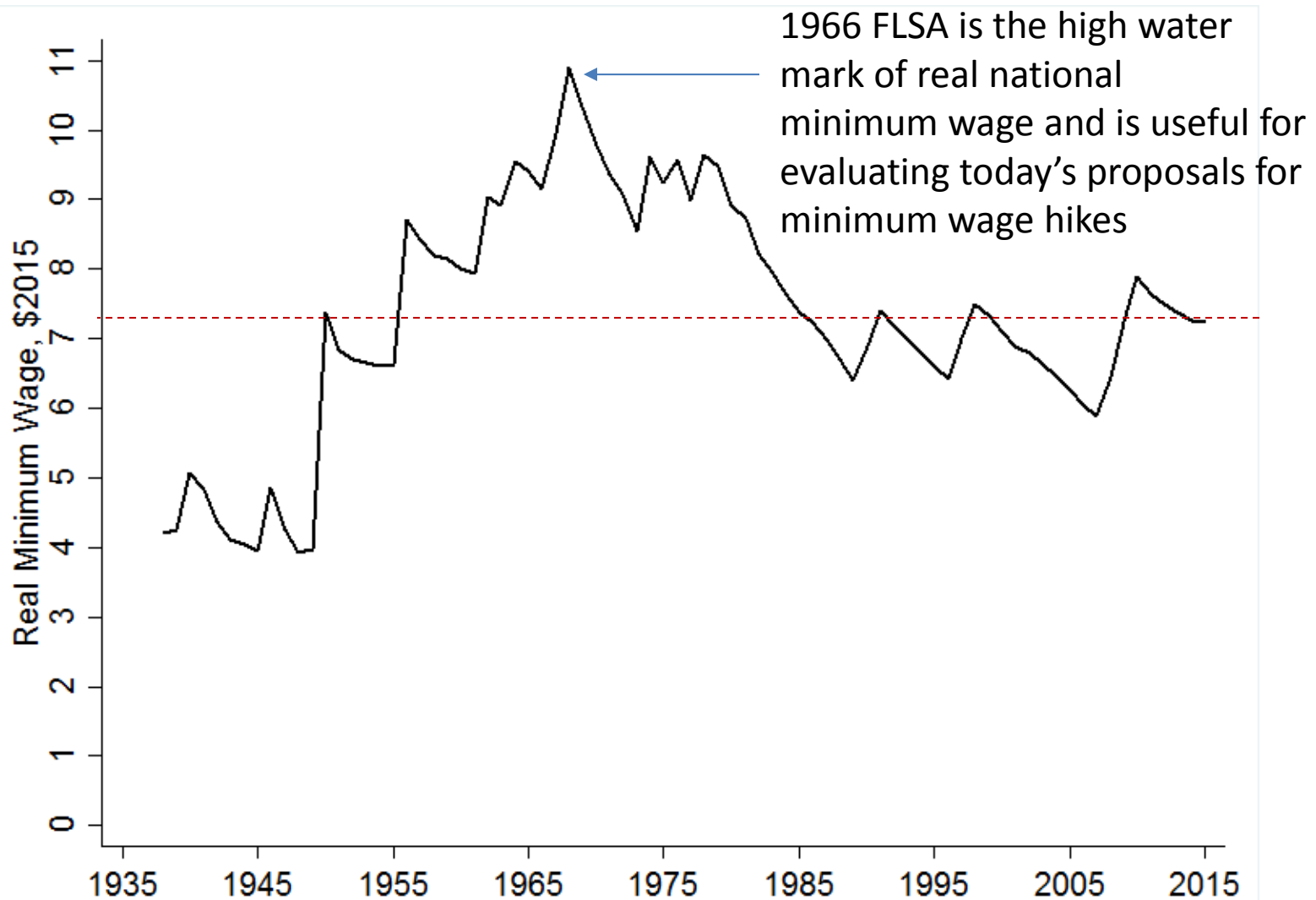
Notes: Nominal minimum wages (for workers initially covered by the 1938 FLSA) are inflated to 2015 dollars using the CPI-U (U.S. city average for all items, CUUR0000SA0). For each year, the figure displays the statutory federal minimum wage in effect for the majority of the year.

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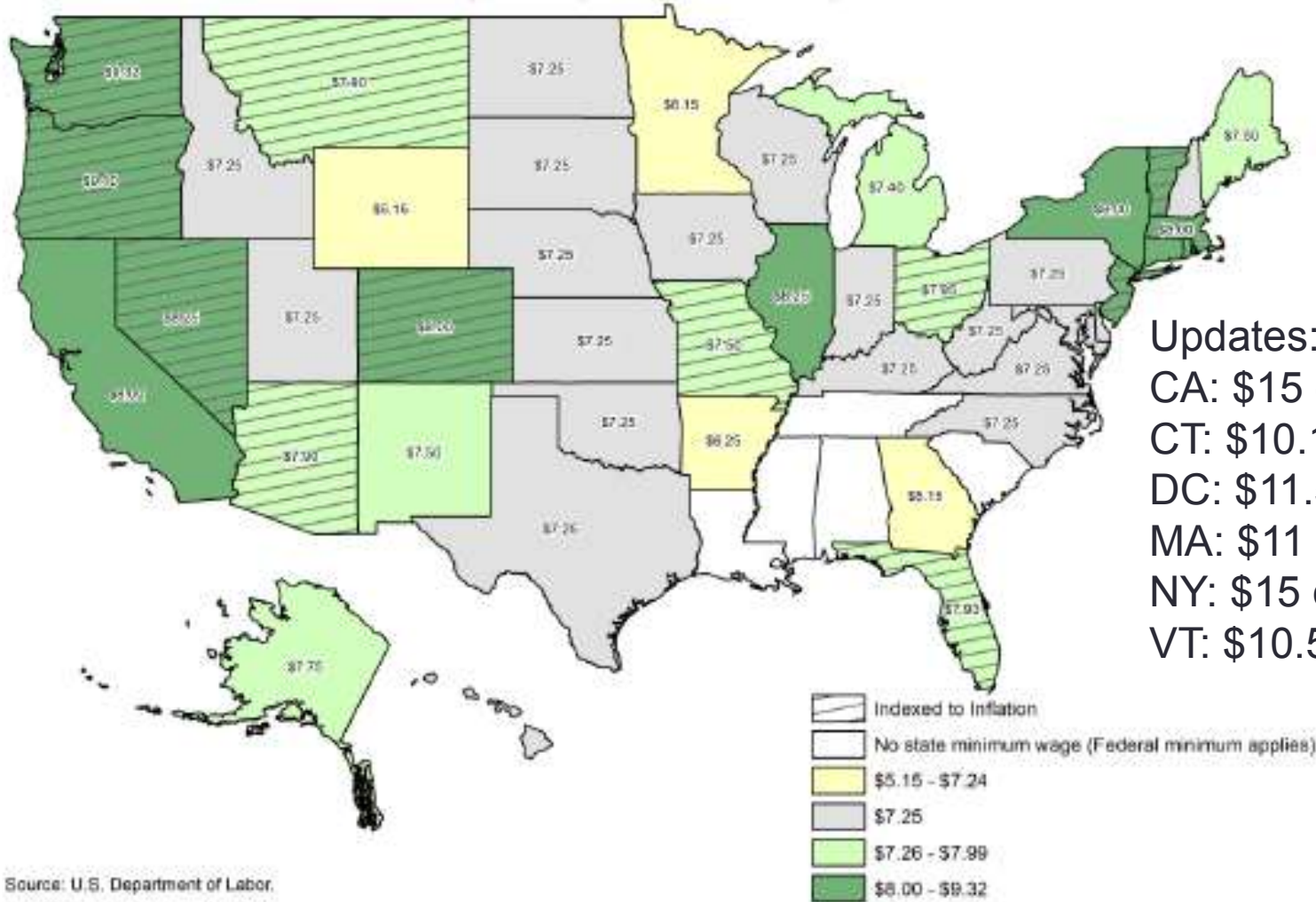
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Today's State Minimum Wages & Proposals

Minimum Wage Law by State as of January 1, 2014



Updates:
 CA: \$15 eff. '22
 CT: \$10.10 eff. '17
 DC: \$11.50 eff. '16
 MA: \$11 eff. '17
 NY: \$15 eff. '19
 VT: \$10.50 eff. '18

Source: U.S. Department of Labor.

Potential Lessons from the 20th Century's Highest *National* Minimum Wage

- Very high minimum wage implies larger disemployment effects in both monopsonistic and competitive models
 - *Even those who have argued raising the minimum wage has had no to small disemployment effects worry that a very high minimum could be harmful (Krueger 2015)*
- Occurred after a decade of sustained minimum wage hikes. Firms may have reasonably expected minimum wages to continue to increase
- National scope means factor mobility cannot ameliorate effects (as with state legislation)
- Many reasons argue we might expect larger disemployment effects after 1966 than in the current context

This Paper's Contribution

- Revisit the effects of the 1966 Amendments to the Fair Labor Standards Act (1966 FLSA) on Wages and Employment
 - Important piece of legislation in its own right
 - Important input into formulating current policy
- Use modern panel methods (earlier literature used timeseries) to make the analysis more comparable to current research
- Develop new method to overcome data limitations in the March CPS in the 1960s

Outline of the Talk

- Brief history of 1966 FLSA
- Measuring the effects of the 1966 FLSA in the March CPS
 - Event-study generalization of Card (1992)
 - Systematic measurement error near the minimum wage
- Method for overcoming measurement error (TS-2SLS)
 - First stage using the Multiple Outgoing Rotation Group of the March CPS (ORG)
 - Replication of Card (1992) in the March CPS
- Results

Preliminary Results: Effects of 1966 FLSA

- Large increases in wages
 - Substantial effects on wages: 0.033 log points for a 1 stdev increase in fraction affected (moving from AL-MS to middle of distribution); 0.053 log points for nonwhites; 0.027 log points for whites
- Little aggregate effects on employment or weeks worked
 - At the mean, 1 stdev. increase in the share of workers affected by the FLSA leads to no more than a 0.27% decline in employment and 0.28% decline in weeks worked
 - LCI for employment: -0.1%; LCI for weeks worked -1.4%
 - Pattern independently confirmed in County Business Patterns Data
- Important changes in composition of workers
 - Large decreases in employment and weeks worked of nonwhite workers around 3.6-3.9%, respectively



HISTORY OF THE 1966 FLSA

Most “Wide-Ranging” Amendment since FLSA Enactment

- The 1966 Amendments regarded as most wide-ranging changes to the FLSA since 1938 (Levin-Waldman 2001)
- Legislation related to Johnson’s aim to provide disadvantaged workers a “hand up, not a hand out”

Sparing in Congressional Hearings

Proponents (like the president of the AFL-CIO) noted in June 1965 that,

“The minimum wage law amendments now pending before Congress are ‘anti-poverty’ legislation, designed to improve the lot of the ‘working poor’” (Shelton 1971)

Opponents (like the National Association of Manufacturing) noted concern about whether the proposed

“minimum [wage] should be increased to a point where it would cause difficulty to those employing unskilled and inexperienced” (Levin 2001)

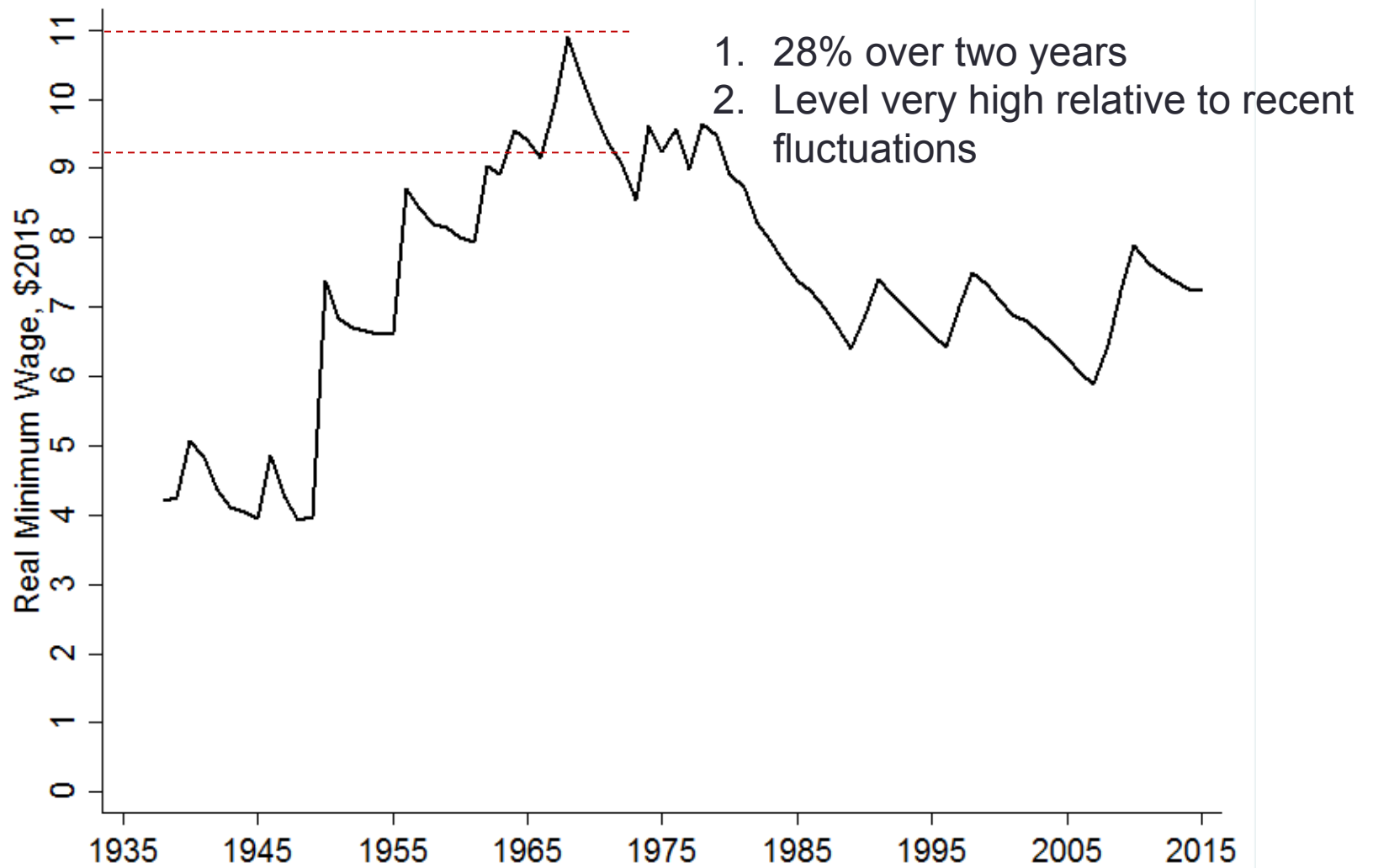
The Enactment

- Passed on September 23, 1966, with first provisions effective in February 1967
- President Johnson said before signing,
“The new minimum wage—\$64 per week—will not support a very big family but it will bring workers and their families a little bit above the poverty line...My ambition is that no man should have to work for a minimum wage, but that every man should have the skills he can sell for more.”
- Challenged as unconstitutional in *Maryland v. Wirtz*, but Supreme Court affirmed the Amendments in 1968

1966 FLSA's Provisions

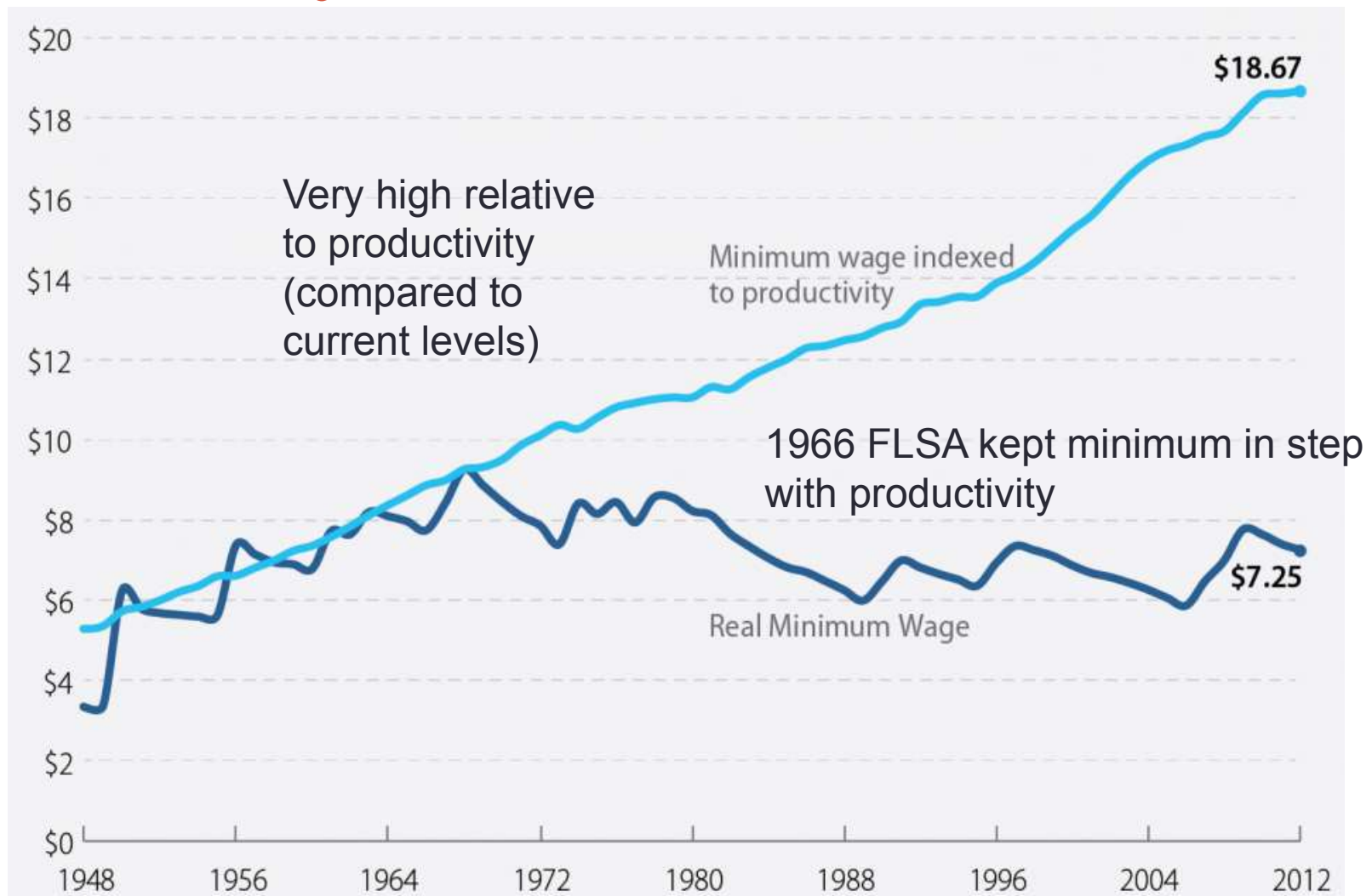
- Covered workers (est. ~3.72 m of 32.3 million affected)
 - Minimum wages increased in two steps:
 - Feb. 1, 1967: increase from \$1.25 to \$1.40
 - Feb. 1, 1968: increase from \$1.40 to \$1.60

1966 FLSA for *Covered* Workers

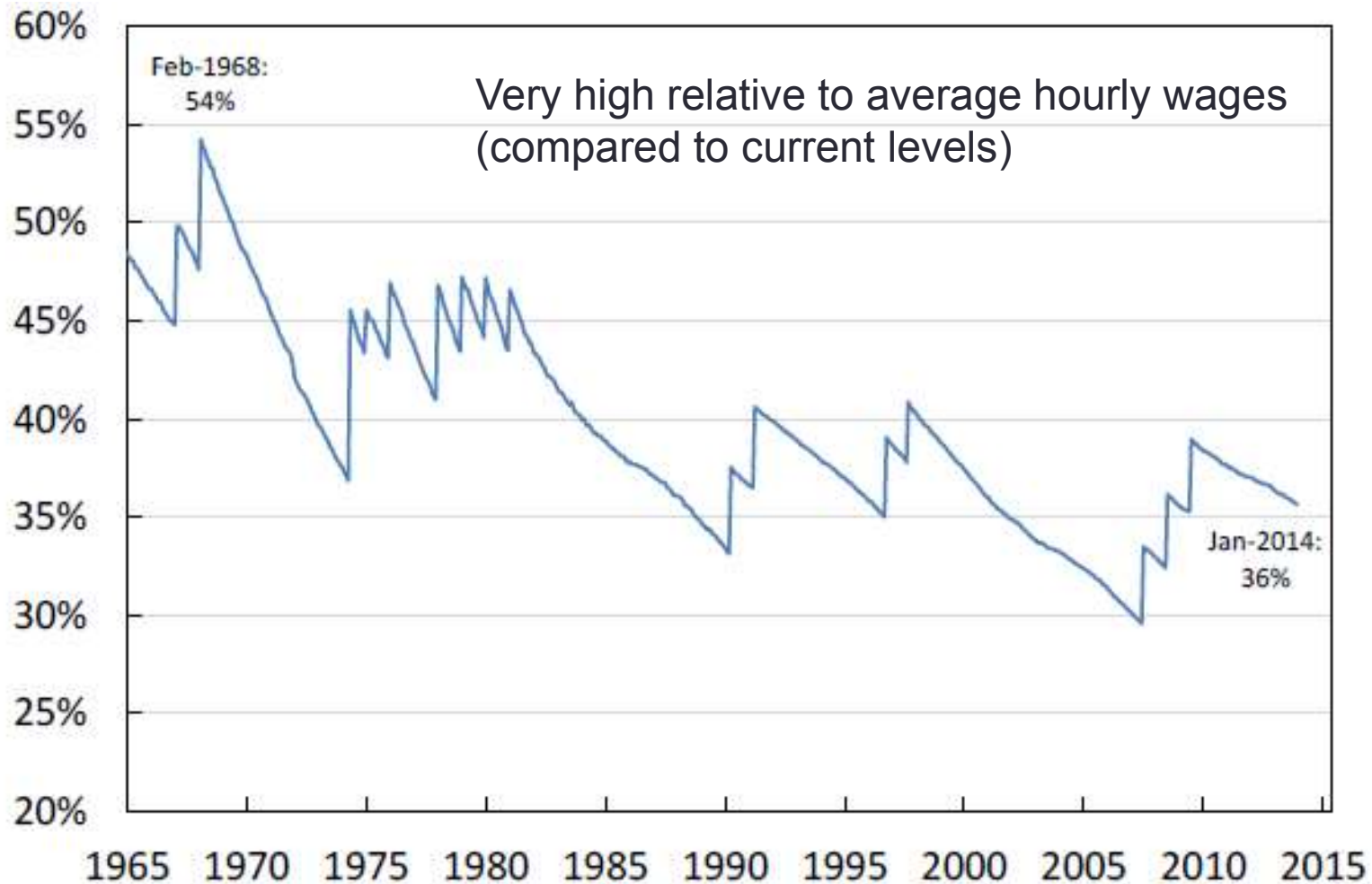


Notes: Nominal minimum wages (for workers initially covered by the 1938 FLSA) are inflated to 2015 dollars using the CPI-U (U.S. city average for all items, CUUR0000SA0). For each year, the figure displays the statutory federal minimum wage in effect for the majority of the year.

Federal Minimum Wages Relative to Productivity, 1948-2012

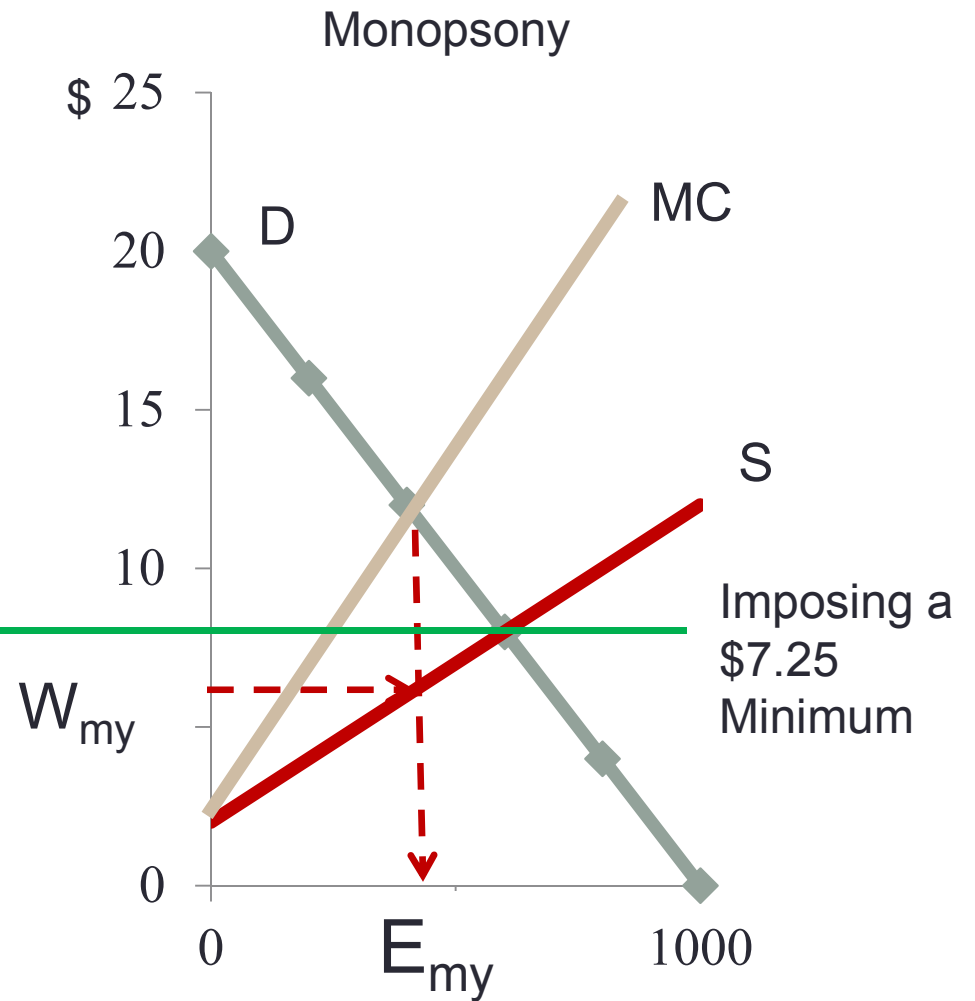
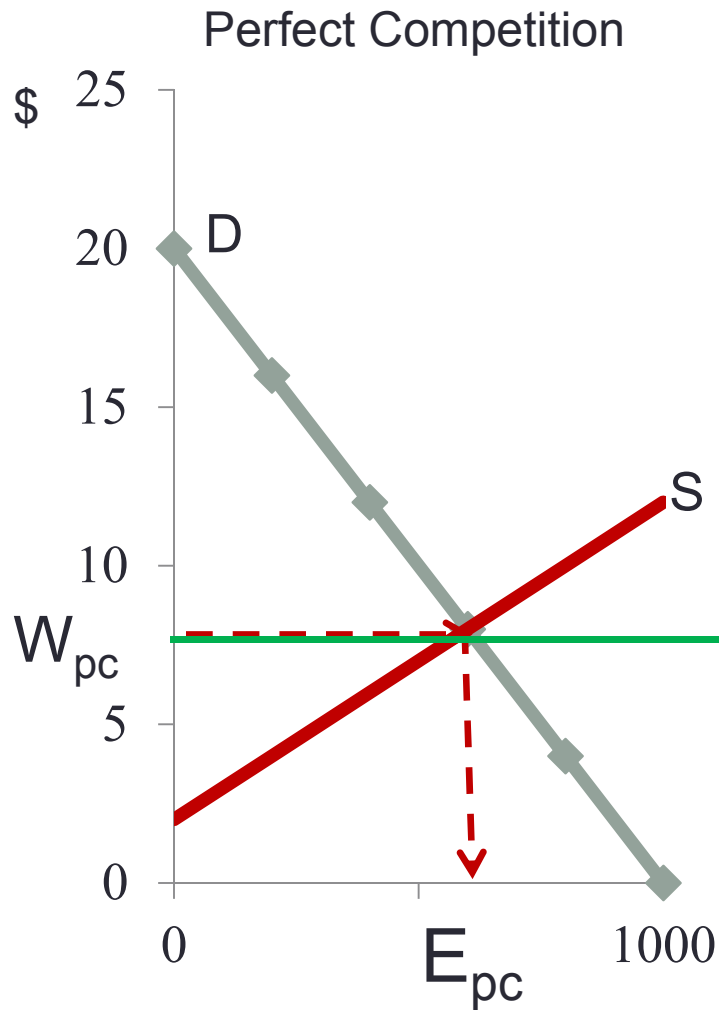


Federal Minimum Wage as a Share of Average Hourly Wage, 1968-2014

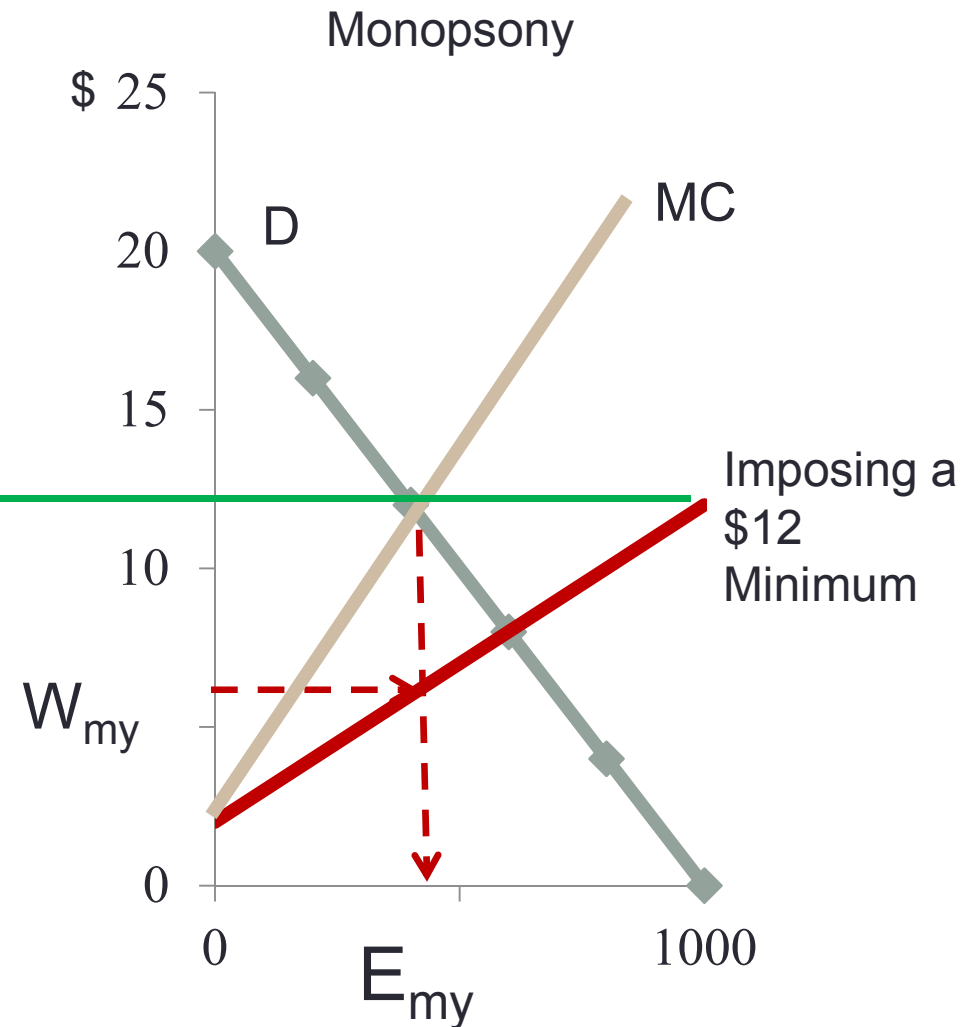
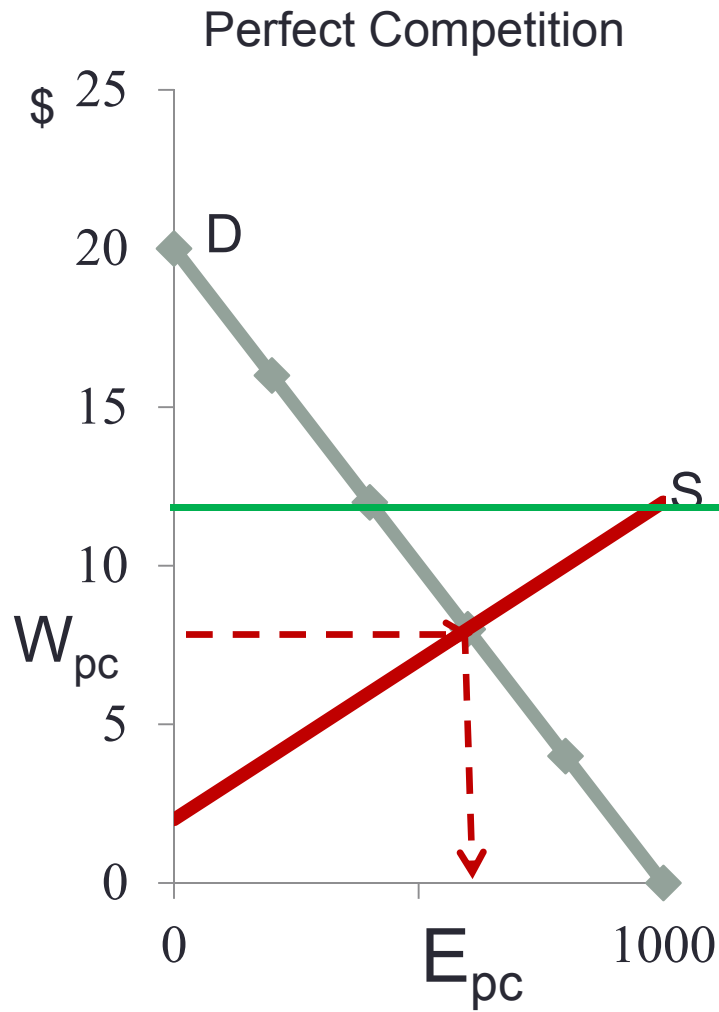


Note: Based on average hourly wage for production and nonsupervisory workers.
Source: Bureau of Labor Statistics; CEA calculations.

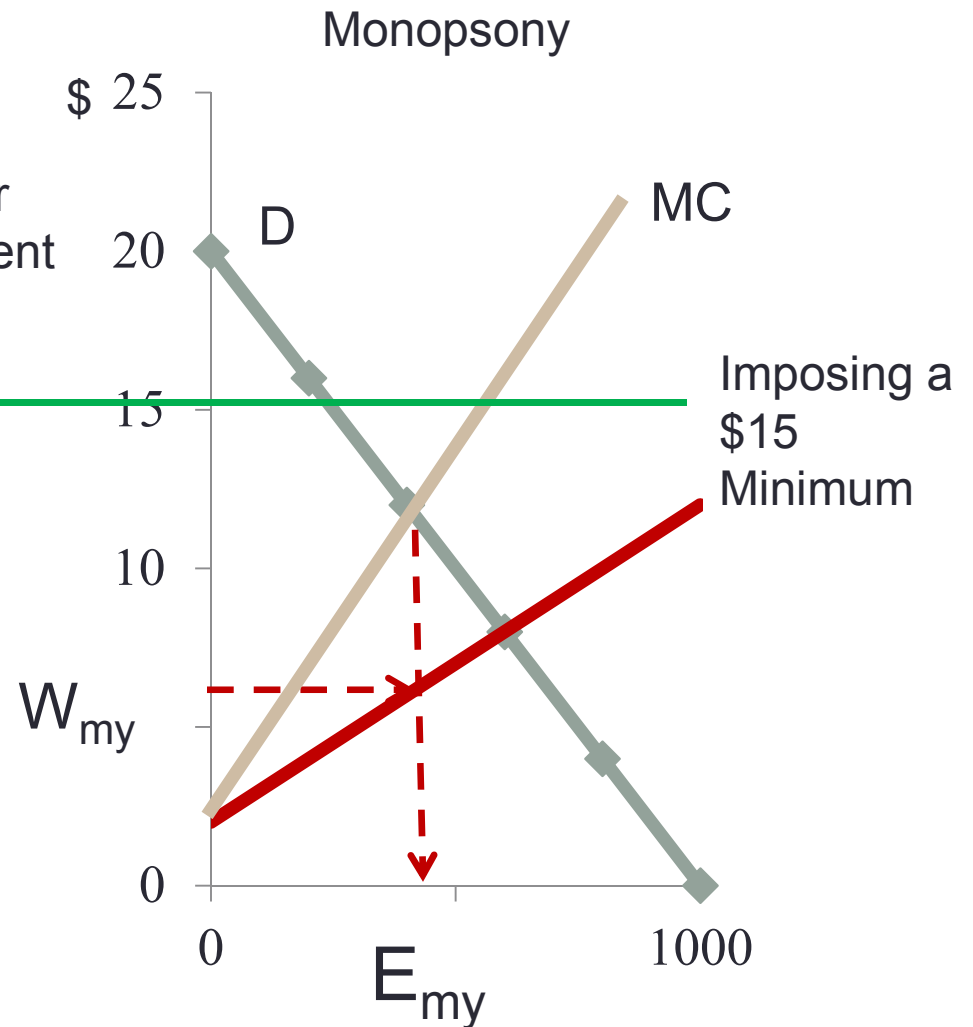
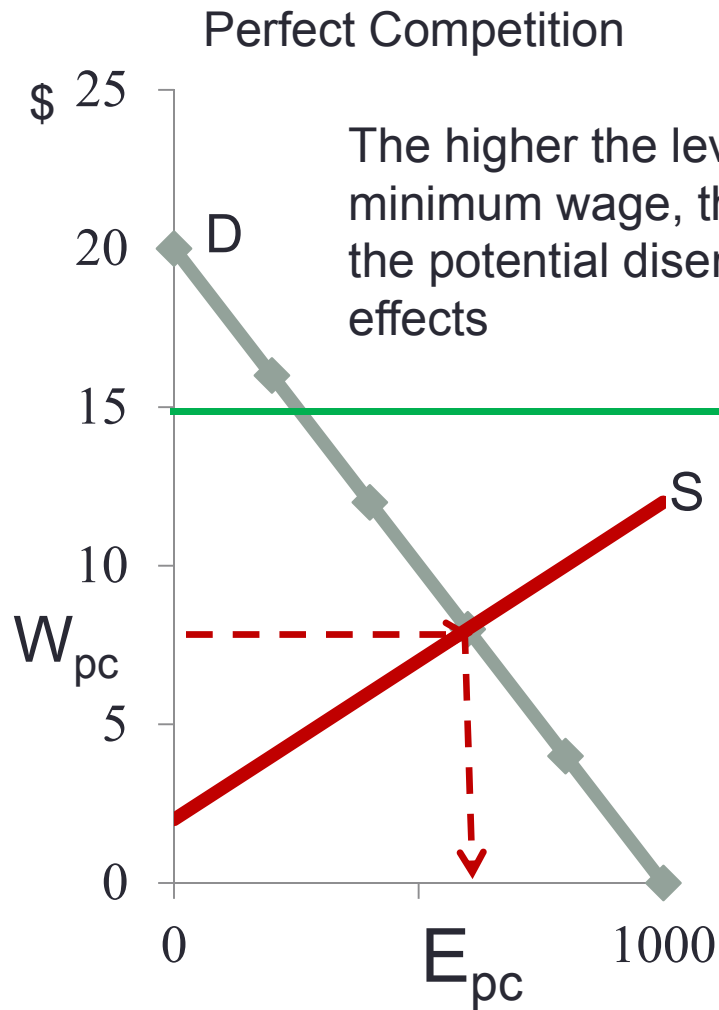
Minimum Wage in Two Models



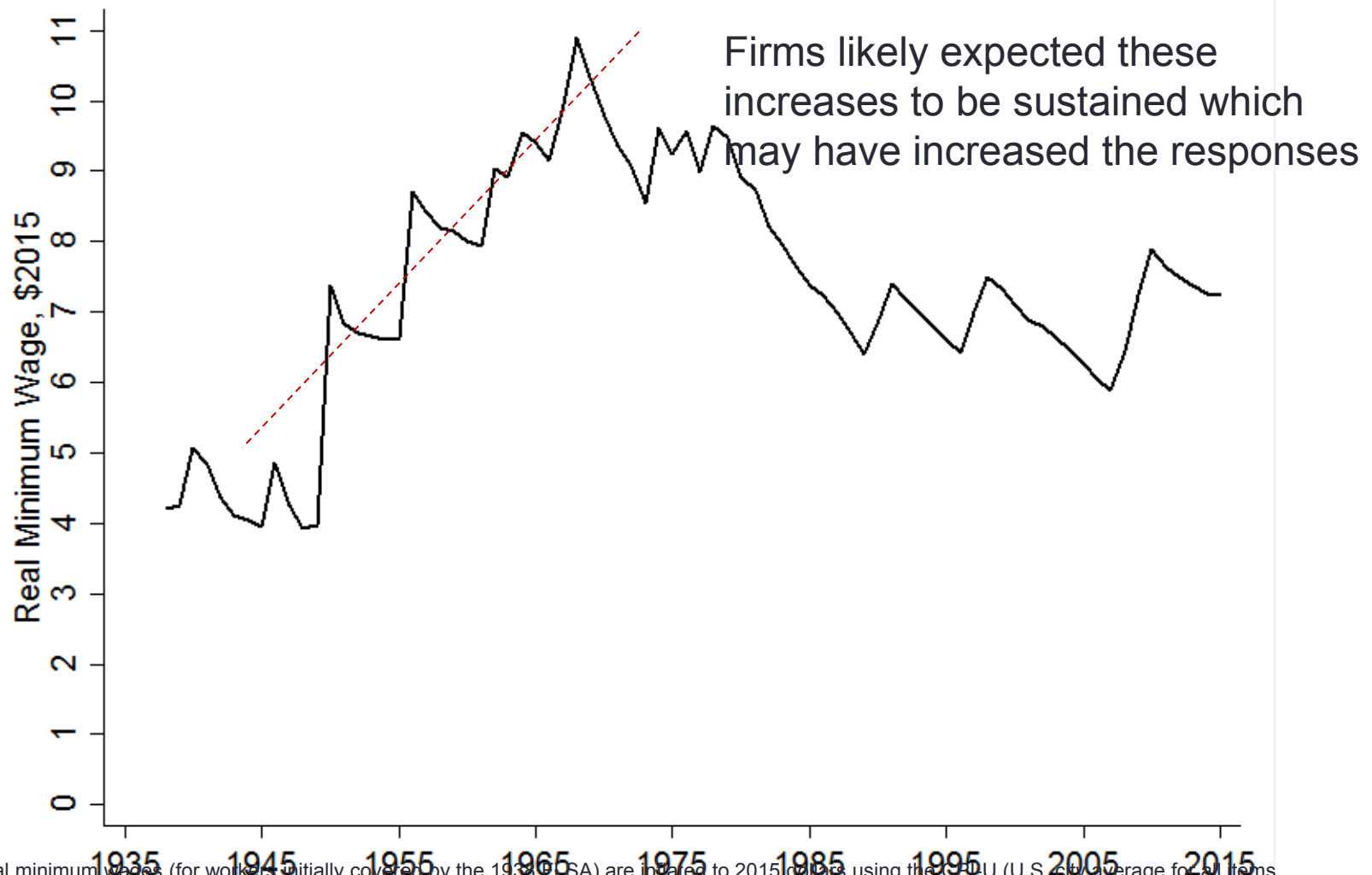
Minimum Wage in Two Models



Minimum Wage in Two Models



1966 FLSA for *Covered* Workers

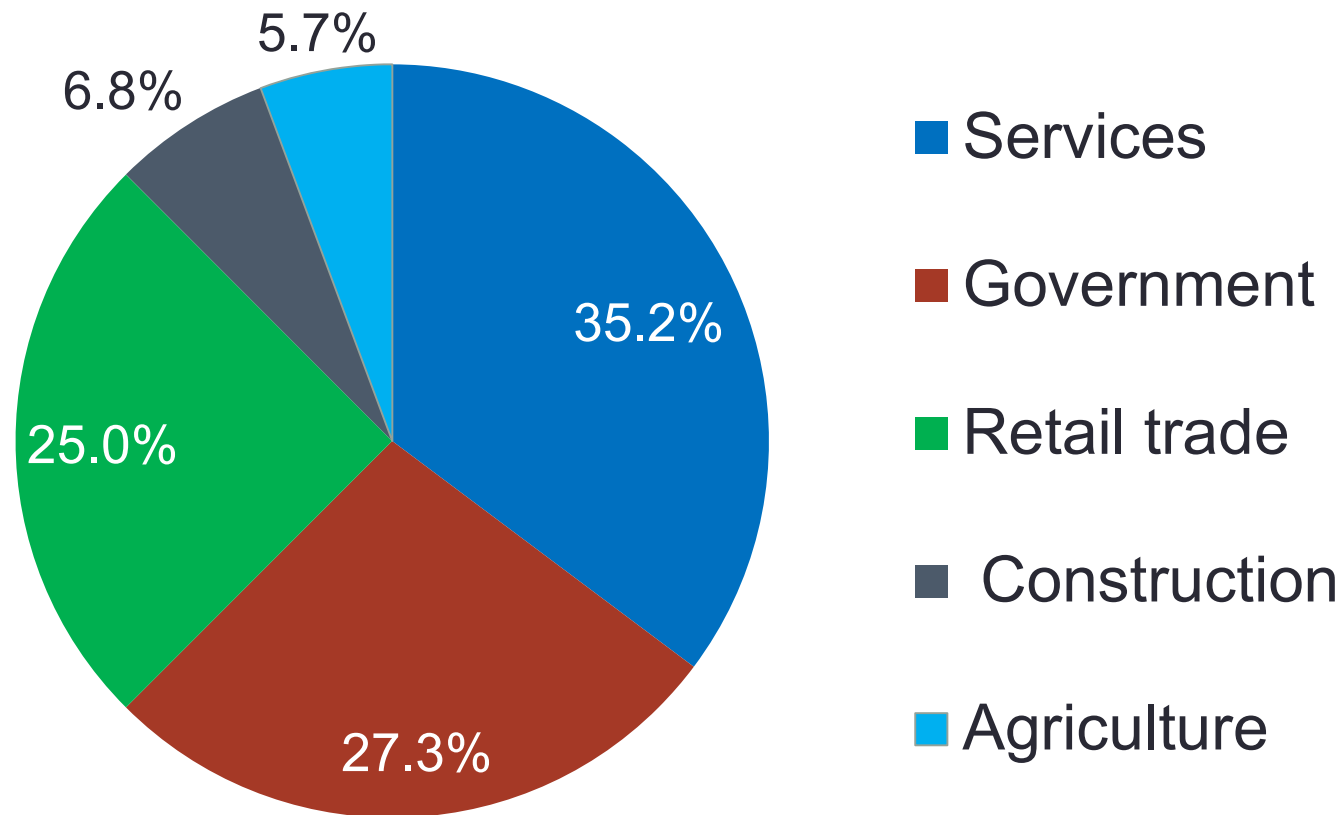


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1966 FLSA's Provisions for 9.1 Million Previously Uncovered Workers

- Unclear what share directly affected or what previously earning
- Extended coverage: employees on large farms, federal service contractors, federal wage board, and in certain Armed Forces (e.g., postal workers)
- Repealed exemptions: employees of hotels, restaurants, laundries and dry cleaners, hospitals, nursing homes, schools, auto and farm implement dealers, small loggers, local transit and taxi companies, agricultural processing and food services
- Reduced “enterprise volume test” from \$1m (in 1961 Amendments) to \$250k within 3 years

5 Industries Employed 95% of Newly Covered Workers



Employees of laundries, schools, hospitals, nursing homes, and large hotels represented more than half of all coverage in the services category (Martin 1967).

1966 FLSA's Provisions for 9.1 Million Previously Uncovered Workers

- Schedule of wage increases for newly covered:
 1. Newly covered non-farm workers began at a minimum wage of \$1/hour in 1967 which increased by 0.15 per year to reach \$1.60 after four years (in 1971)
 2. Newly covered farm workers began at a minimum wage of \$1.00 in 1967 and increased by 0.15 per year to reach \$1.30 in 1969. **Department of Labor estimated that the initial increase to \$1 would apply to around 953,000 farm workers.
 3. Overtime provisions: 44 hours in 1967; 42 hours in 1968; 40 hours in 1969



MEASURING THE EFFECTS OF THE 1966 FLSA IN THE MARCH CPS

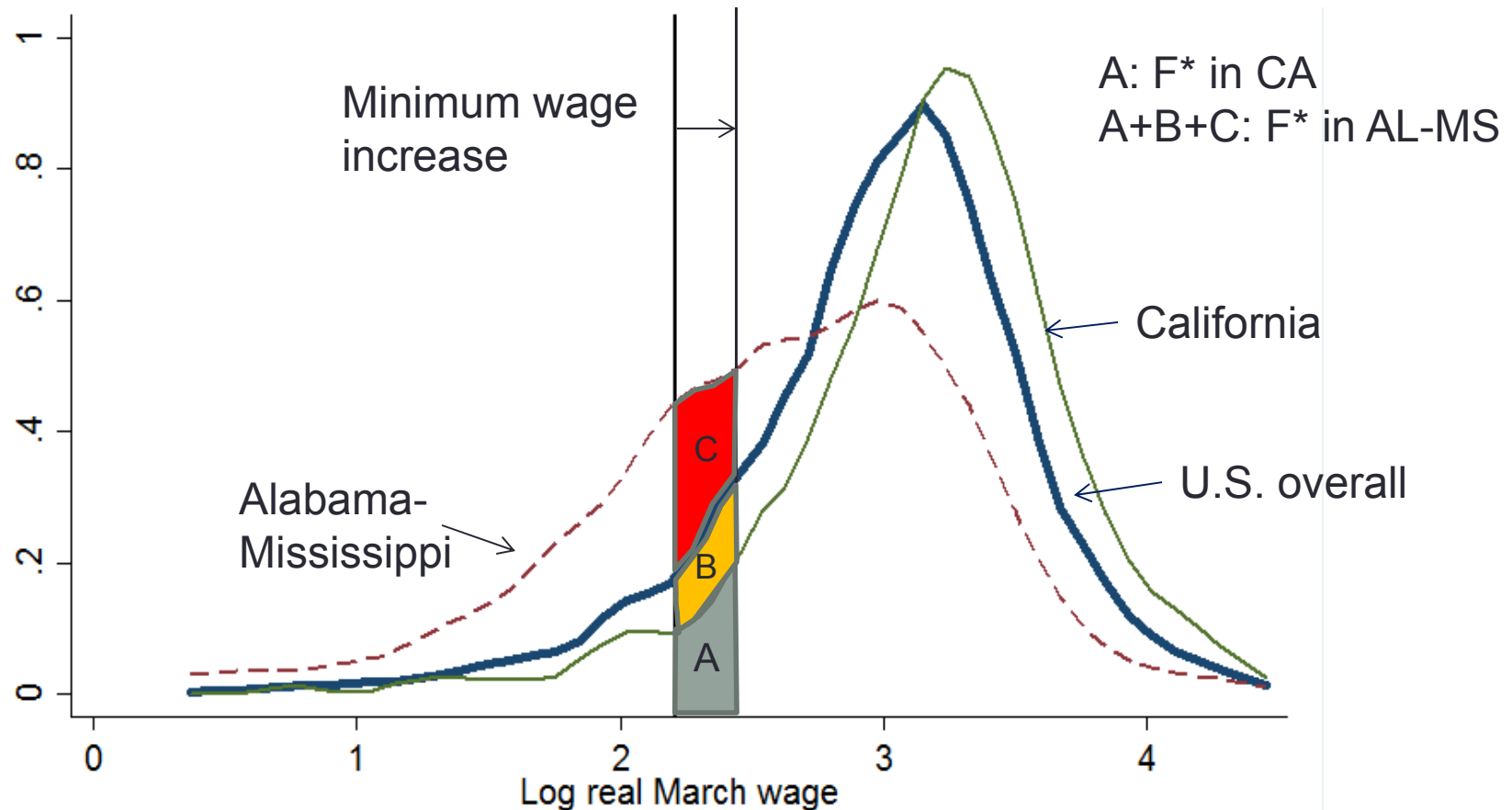
Constructing a Counterfactual for a Federal Minimum Wage Increase

- Difficult because every covered worker is “treated”
- Long-standing criticism of the national minimum wage is that regional variation in standards of living and wage levels generate substantial variation in its “bite” (Stigler 1946)
- Card (1992) uses this as a research design
- (1) $\Delta \log W_s = \gamma_1 + \gamma_2 F_s^* + \varepsilon_s$ and
- (2) $\Delta \log E_s = \beta_1 + \beta_2 \Delta \log W_s + \omega_s$.

The economic effects of a minimum wage increase should be larger in places where a greater fraction of workers are affected (F^*): $\gamma_2 > 0$ and $\beta_2 < 0$.

Regional Variation in 1966 Hourly Wages

- Hourly wage plots show substantial variation across areas in share of workers earning below the minimum wage



Event-Study Generalization of Card (1992)

- We generalize Card (1992) to include multiple years:

$$Y_{ist} = \sum_{y=1959}^{1976} \theta_y 1(t = y) F_s^* + \mathbf{X}_{st}' \beta + \gamma_s + \delta_t + \alpha_{s,c(i)} + \varepsilon_{ist}$$

F_s^* : # covered workers earning below the new minimum wage and above the old minimum wage + # newly covered below the new minimum wage as a share of all workers; should only matter after 1966

γ_s : time-invariant differences across states: climate and potentially differences in legislation, industrial composition, and cost of living (~quasi-fixed in the shorter-term).

δ_t : national changes across years that may also affect outcomes: large tax cuts (1964), the Civil Rights Act (1964) and Voting Rights Act (1965), Medicare (1966), as well as other War on Poverty legislation (Bailey and Duquette 2014, Bailey and Danziger 2013).

$\alpha_{s,c(i)}$, where $c = t - \text{age}$ of an individual, account for time-varying characteristics of a state's population: differential, non-linear evolution of school quality (Card and Krueger 1992) and racial discrimination (Donohue and Heckman 1991, Wright 2013) across states.

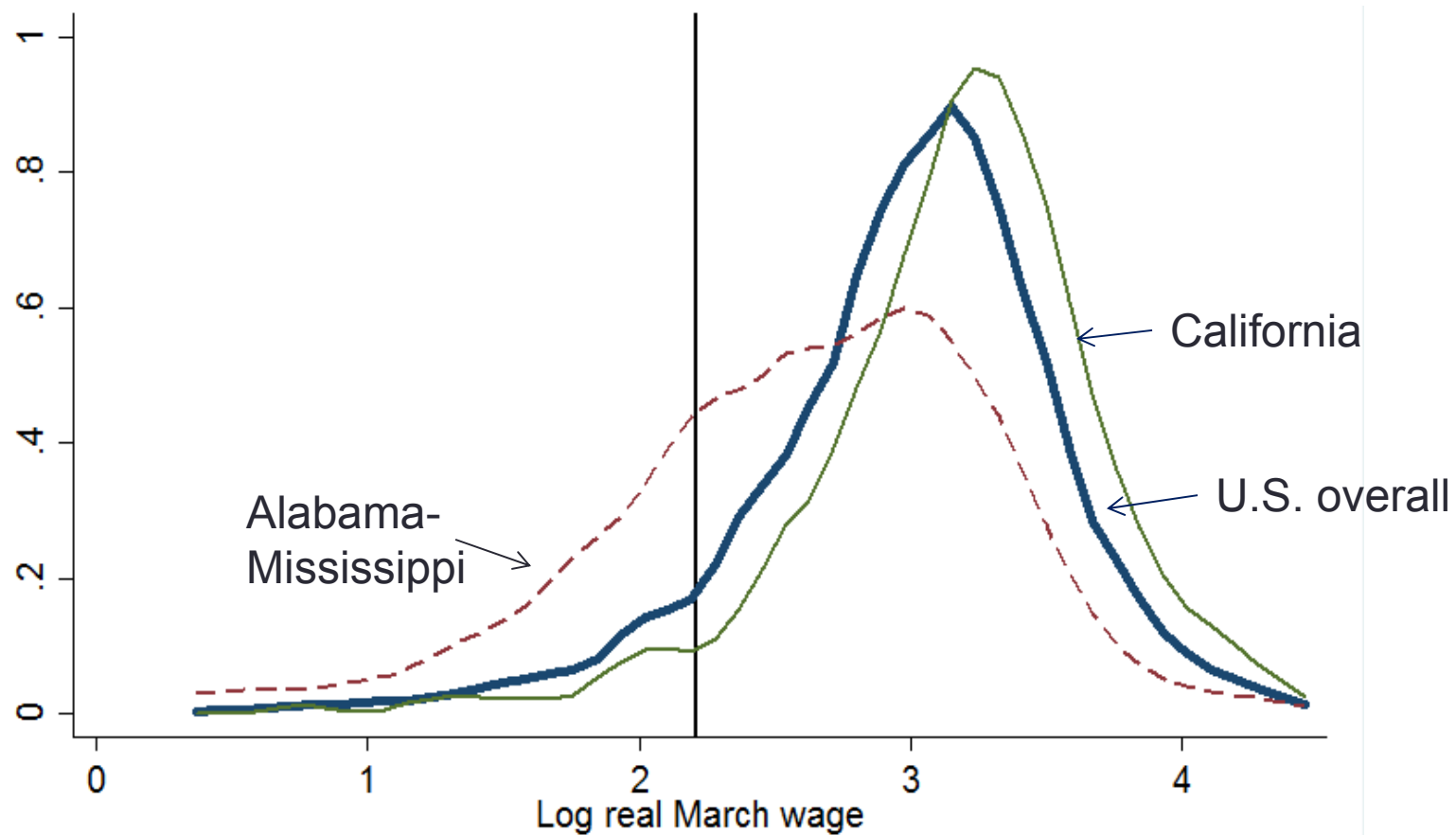
\mathbf{X}_{st} , includes dummy variables for each age, race, marital status, & metro residence

F* Measured with Error in 1960s

- 1960 census and March CPS are the only nationally representative, annual sources on U.S. worker wages and labor-force effort for our period of interest
- Hourly wages constructed by dividing information on annual wage earnings in the last year by categorical reports of weeks worked last year and hours worked *in the week before the survey*
- Measurement error in the implied hourly wage distribution may be due to:
 1. misreports by respondents about wages, weeks or hours;
 2. aggregation of weeks and hours into categories;
 3. failure of hours worked in the week before the survey to represent the hours worked in the average week during the previous year

Where is the Minimum Wage Spike?

- No evidence of this spike in 1966
 - No enforcement/compliance? Measurement error?



Measurement Error! No Minimum Wage Spike in 1990 ORG

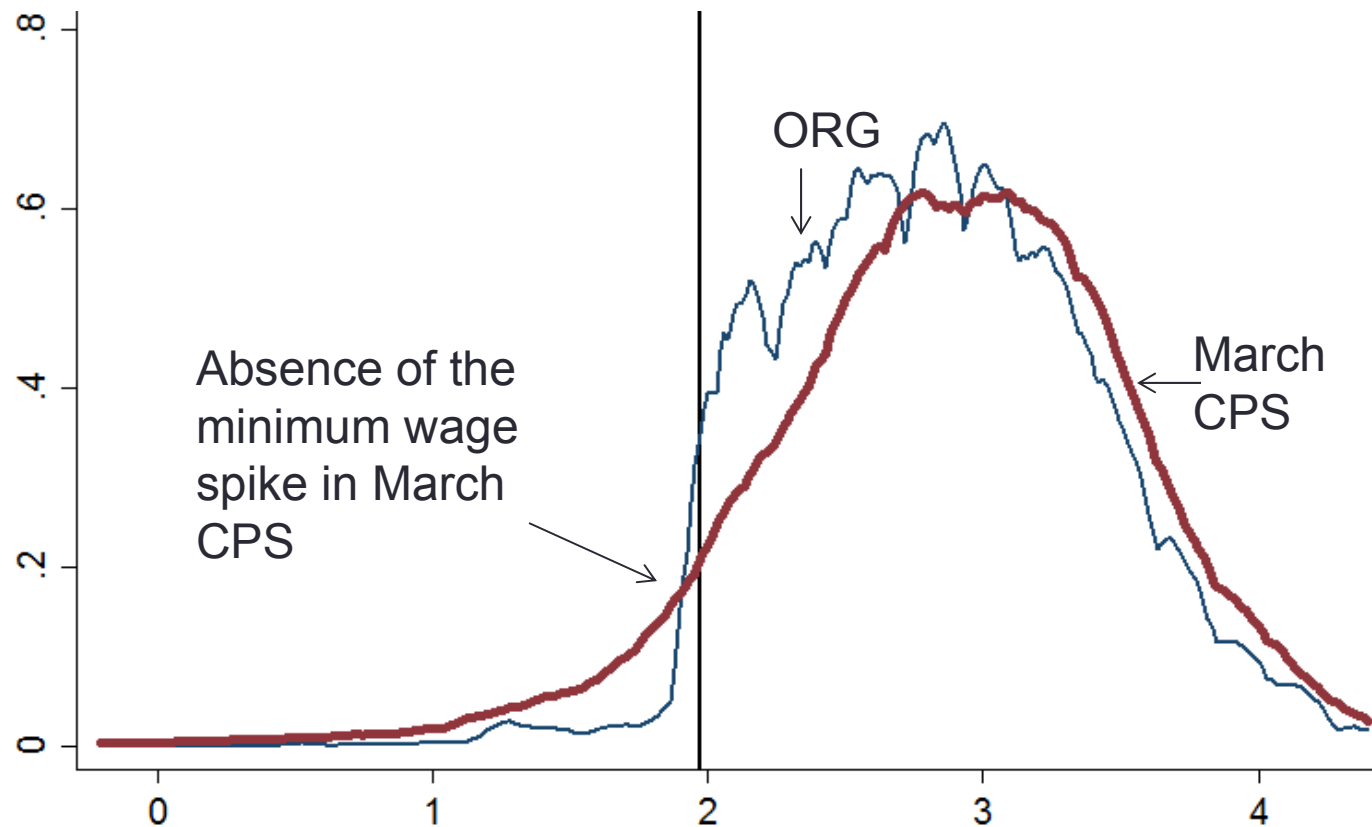
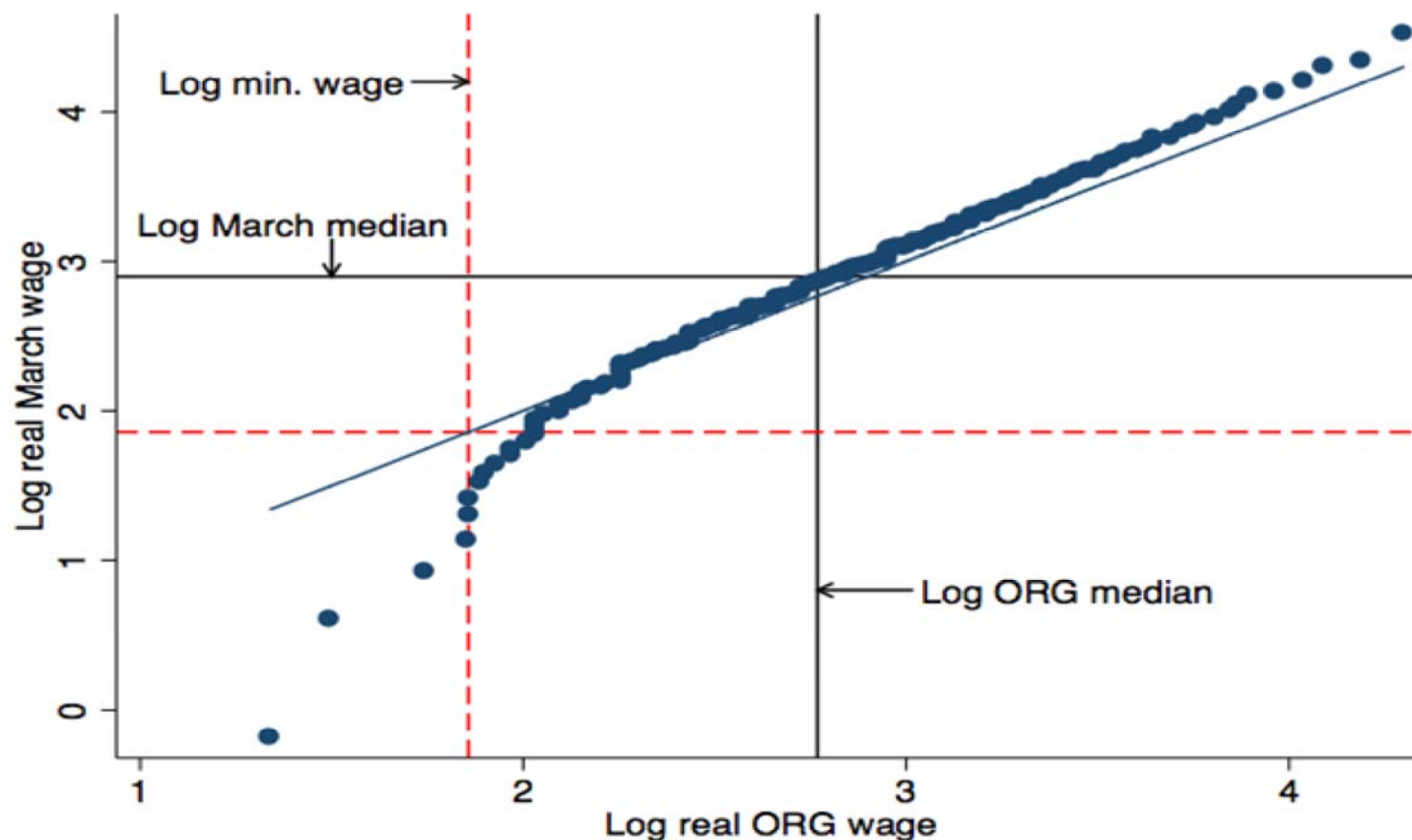


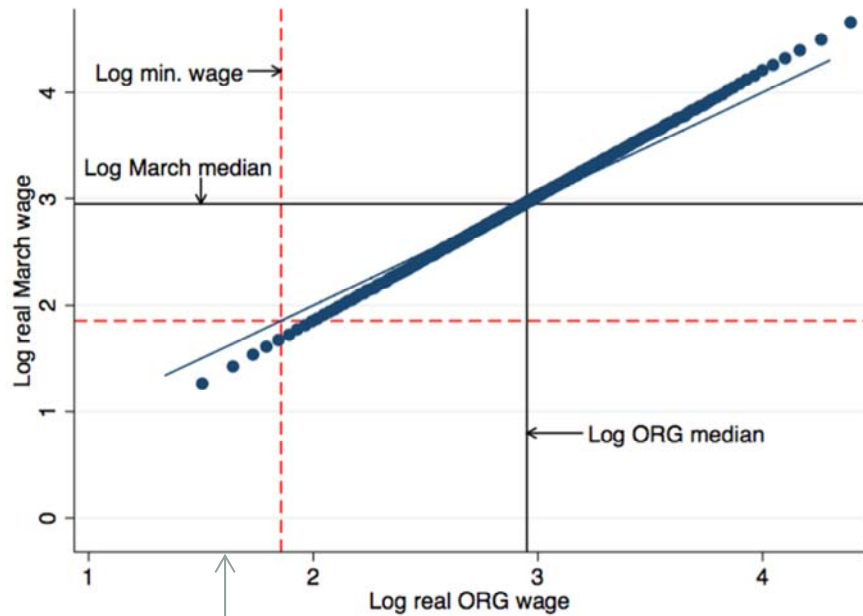
Figure displays log real wage (in 2015\$) densities for men and women age 16-64. For expositional purposes, the densities are estimated only among wages between the 0.5th and 99.5th percentiles of the aggregate wage distribution. Densities are weighted by the product of the CPS weight and the annual number of hours (March) or the usual hours worked per week (ORG). Source: 1990 March CPS, 1989 ORG CPS

A Comparison of Wage Quantiles in March and ORG data, 1989

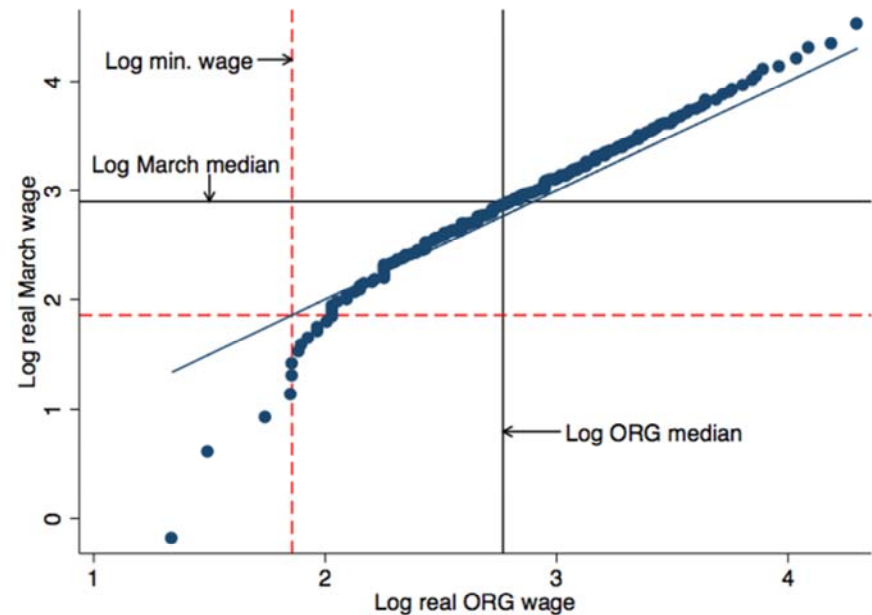


Panel A plots 200 quantiles under the assumption that March and ORG data are generated by the classical errors-in-variables model. We calculate the parameters of the errors-in-variables model from the subset of matched March-ORG data. The estimated variance of the truth is 0.26, while the estimated variances of the error terms for the March and ORG data are 0.21 and 0.06. The medians of the March and ORG data are very similar (2.89 and 2.90). Under this parametrization, even the 0.5th percentile of the simulated ORG wage distribution is above the minimum wage. Panel B plots 200 quantiles from the March and ORG data for log real wages of male and female workers age 16-64 in 1992. In Panel B, the 20th percentile of the March (ORG) wage distribution is 2.33 (2.32). Source: 1990 March and 1989 ORG CPS.

A Comparison of Wage Quantiles in March and ORG data, 1989



This measurement error is not captured well by errors in variables model



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Can We Replicate Card (1992) in March CPS?

| | Dependent Variable: 1989-1990 Change in Mean Log Wage | | | | | | |
|--|---|------------------|-----|---------|---------|---------|---------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | OLS | OLS | OLS | TS-2SLS | TS-2SLS | TS-2SLS | TS-2SLS |
| Fraction affected by minimum wage (ORG) | 0.15 (0.03) | 0.148 (0.036) | | | | | |
| Fraction affected by minimum wage (March) | | | | | | | |
| R-squared | 0.30 | 0.25 | | | | | |
| Period for first stage | | | | | | | |
| 40 th Percentile (March) | | | | | | | |
| R-squared | | | | | | | |

Notes: Each regression uses 51 observations for the 50 states and the District of Columbia. Columns 1-3 and reduced form models are weighted by the mean number of individual observations from 1989-1990 (for the data set used to construct the dependent variable). First stage models are weighted by the number of individual observations in each year. In column 3, the dependent variable is measured using the March CPS.

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| Fraction affected by minimum wage (March) | | | 1.054 (0.668) | | | | |
| R-squared | 0.30 | 0.25 | 0.05 | | | | |
| Period for first stage | | | | | | | |
| 40 th Percentile (March) | | | | | | | |
| R-squared | | | | | | | |

No! Coefficient 7 times too large and s.e. 18 times as large

Notes: Each regression uses 51 observations for the 50 states and the District of Columbia. Columns 1-3 and reduced form models are weighted by the mean number of individual observations from 1989-1990 (for the data set used to construct the dependent variable). First stage models are weighted by the number of individual observations in each year. In column 3, the dependent variable is measured using the March CPS.

Systematic Measurement Error in March CPS

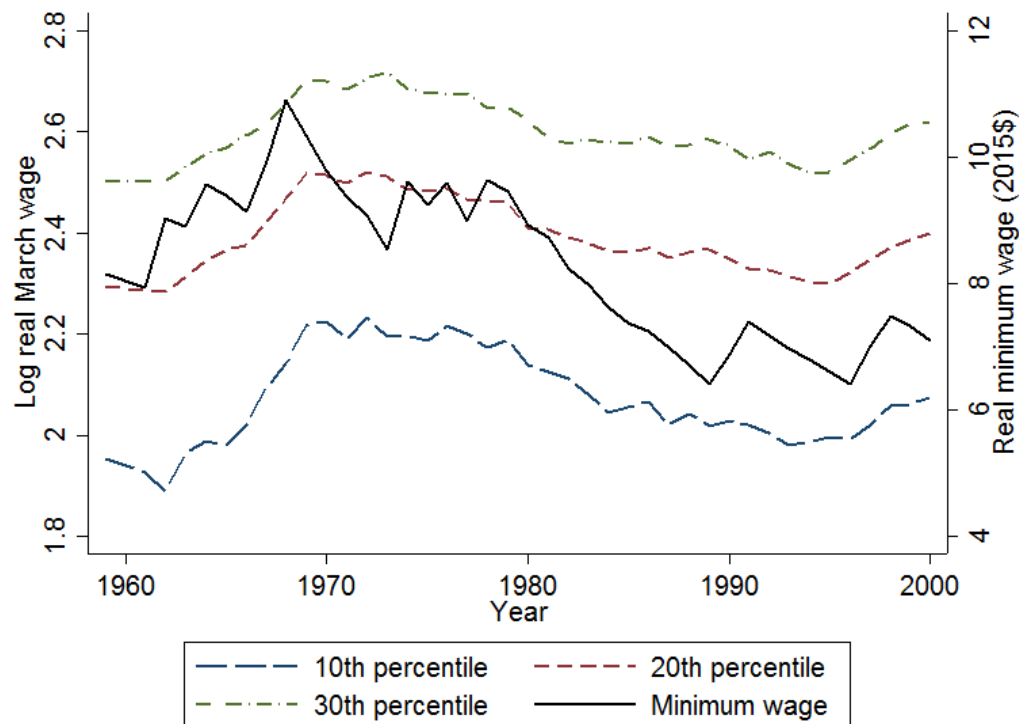
- Apparent in the 1990s when we compare to ORG
- Systematic and near minimum wage
- Quantitatively important enough to obscure effects of 1990 minimum wage increase documented in Card (1992)



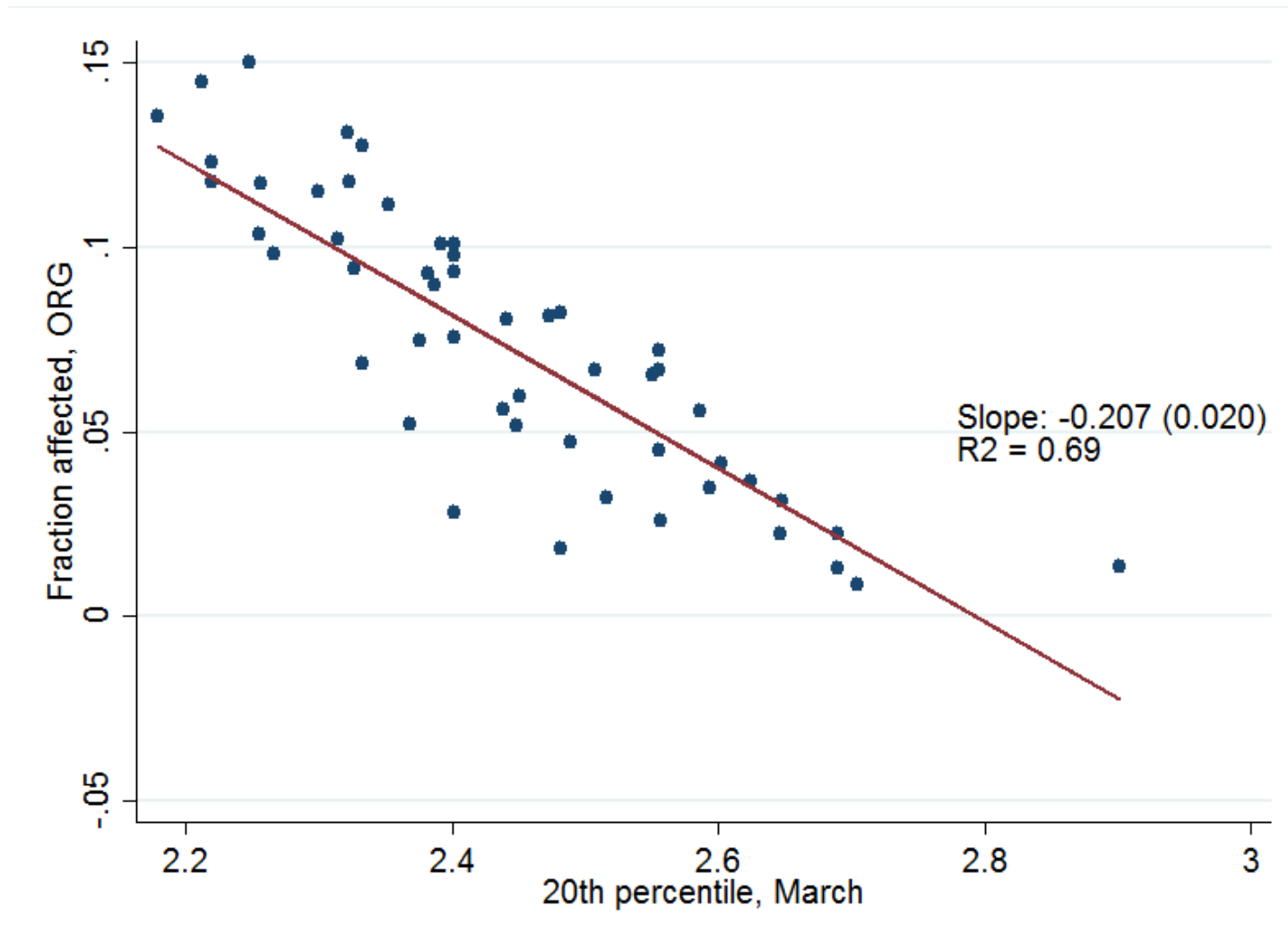
A METHOD FOR RECOVERING THE
RELATIONSHIP BETWEEN FRACTION
AFFECTED IN THE MARCH CPS

Two-Sample, 2SLS

- Use a valid instrument that is correlated with the true fraction affected
- Lee (1999) notes that percentiles of the March CPS correlated with level of minimum wage



Relationship between Fraction Affected in the ORG and 20th Percentile in the March CPS, 1989



An Instrument for Fraction Affected

First stage estimated in periods that contain both March and ORG CPS:

$$F_{st}^* = \alpha + \delta P_{st} + \omega_{st}$$

P_{st} is March percentile in state s and year t

F_{st} is ORG fraction affected

Key idea: Percentile of March CPS is highly correlated with fraction affected *even when* March hourly wage near the minimum wage is measured with a lot of error

Next, Generate TS-2SLS Estimate

Estimate the reduced-form model:

$$Y_{ist} = \sum_{y=1959}^{1975} \pi_y 1(t = y) P_s + \mathbf{X}_{st} \tilde{\beta} + \gamma_s + \theta_t + \alpha_{s,c(i)} + \varepsilon_{ist}$$

Scale the reduced-form estimate by first stage coefficient (Inoue and Solon 2010):

$$\hat{\theta}_y^{2SLS} = \frac{\hat{\pi}_y}{\hat{\delta}}$$

Standard errors estimated using a parametric bootstrap (Efron and Tibshirani 1993) using 10,000 draws of the reduced-form and first stage parameters from normal distributions with a mean given by the point estimates and standard deviation given by the standard errors.



ESTIMATING THE FIRST STAGE

Implementation Choices

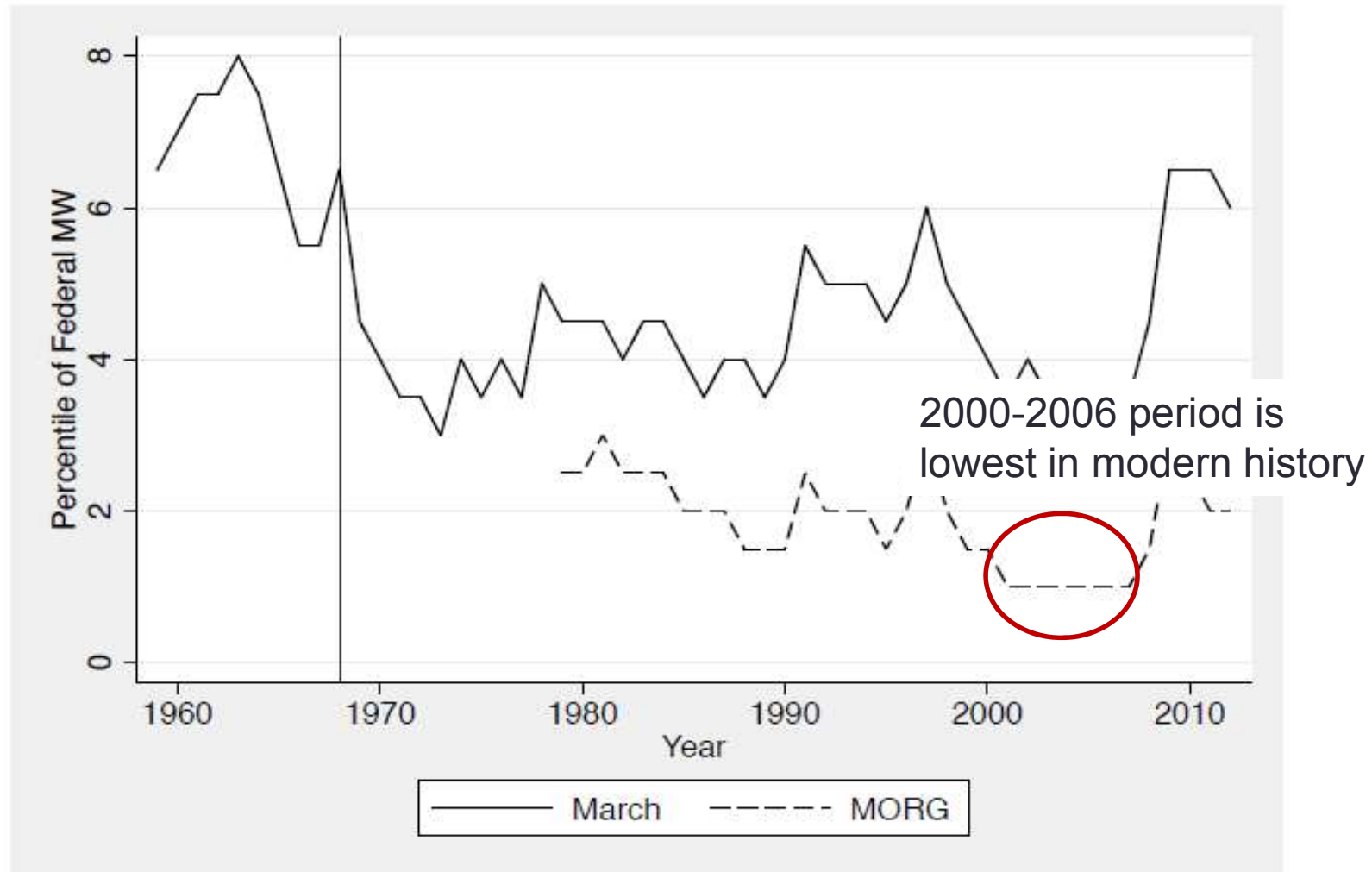
Estimate F^* using indirect method:

- Construct hypothetical minimum wage increase in every period similar in magnitude to percentile point increase in 1990 (7th to the 34th percentile for teens)
- Makes most sense in era where minimum wage is low, percentile stable

Future: estimate F^* using a direct method

Calibrate and validate our method by recovering Card's (1992) estimates using the March CPS

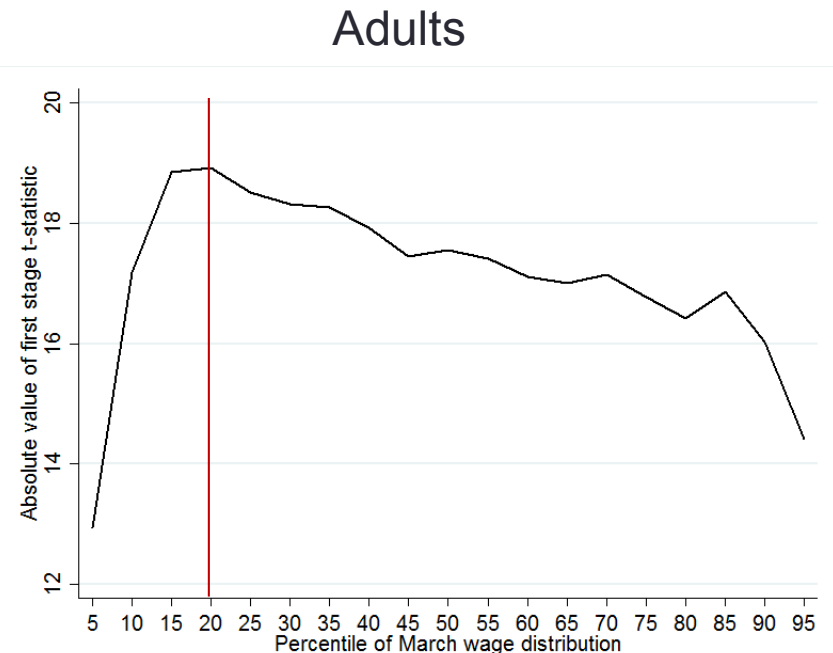
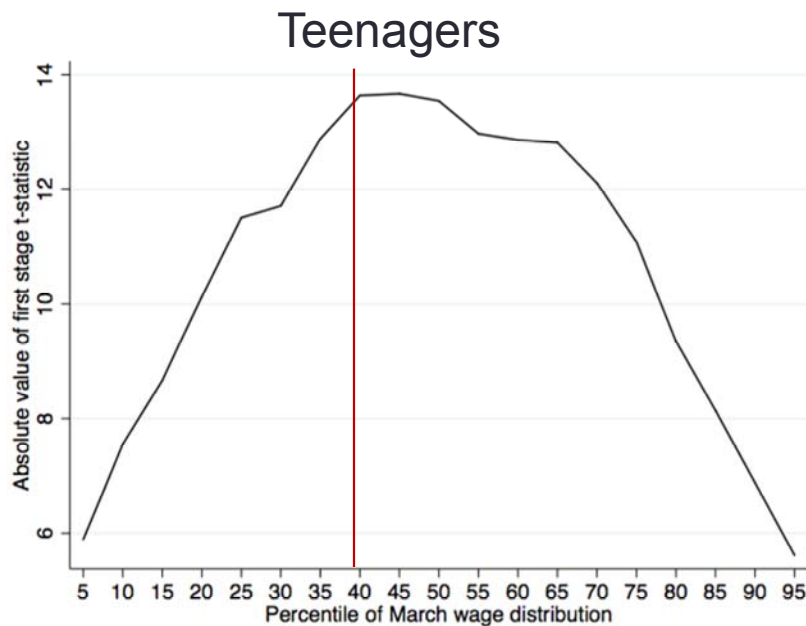
Period for Estimating Hypothetical Increase in Minimum Wage



Notes: Nominal minimum wages (for workers initially covered by the 1938 FLSA) are inflated to 2015 dollars using the CPI-U (U.S. city average for all items, CUUR0000SA0). For each year, the figure displays the statutory federal minimum wage in effect for the majority of the year.

Implementation Choices: Percentile?

- For teens (as in Card), we choose the 40th percentile because it maximizes the first stage power in 2000-2006
- For adults, we use choose the 20th percentile in March data



An Instrument for Fraction Affected

First stage estimated in periods that contain both March and ORG CPS:

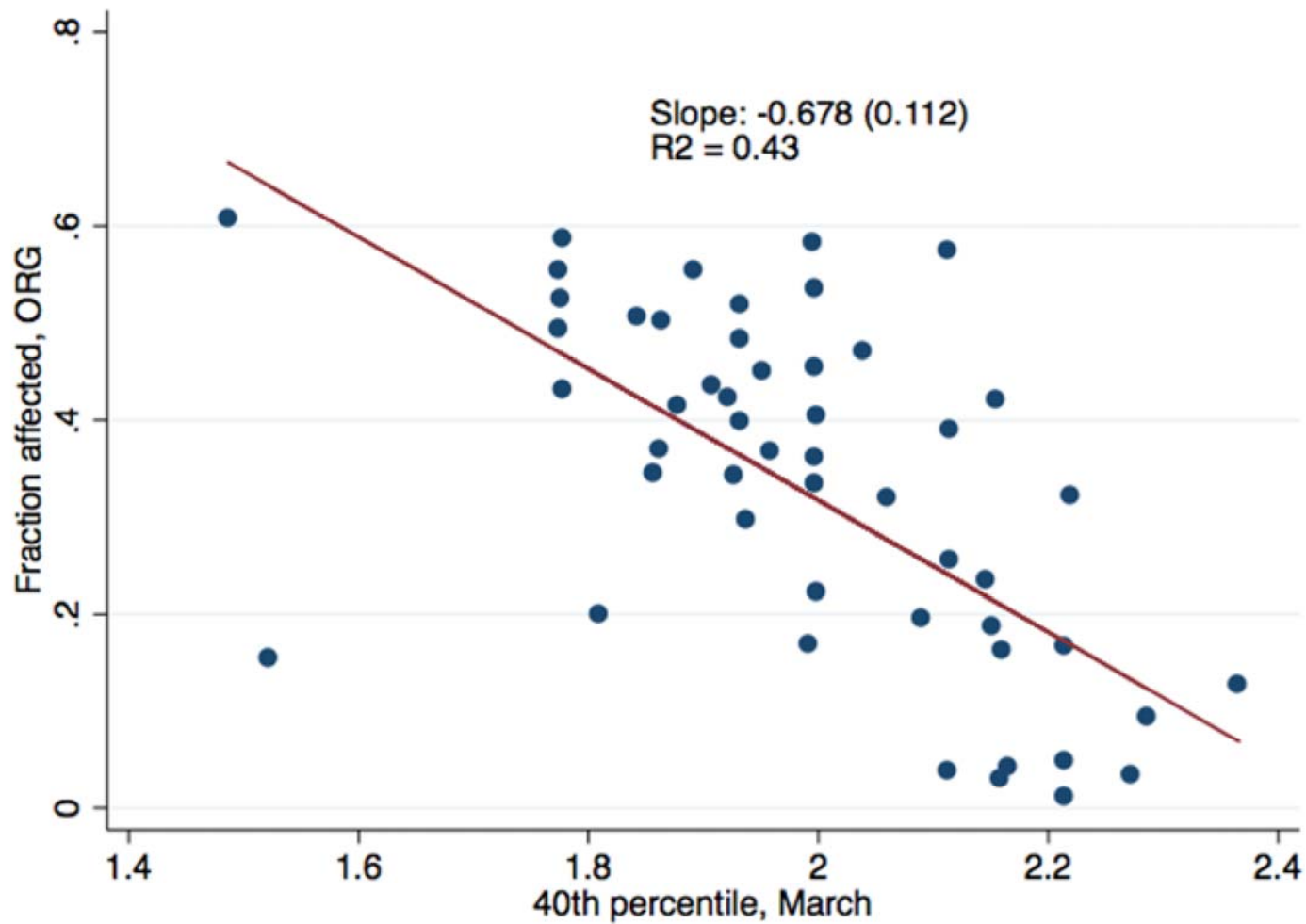
$$F_{st}^* = \alpha + \delta P40_{st} + \omega_{st}$$

P_{st} is March percentile in state s and year t

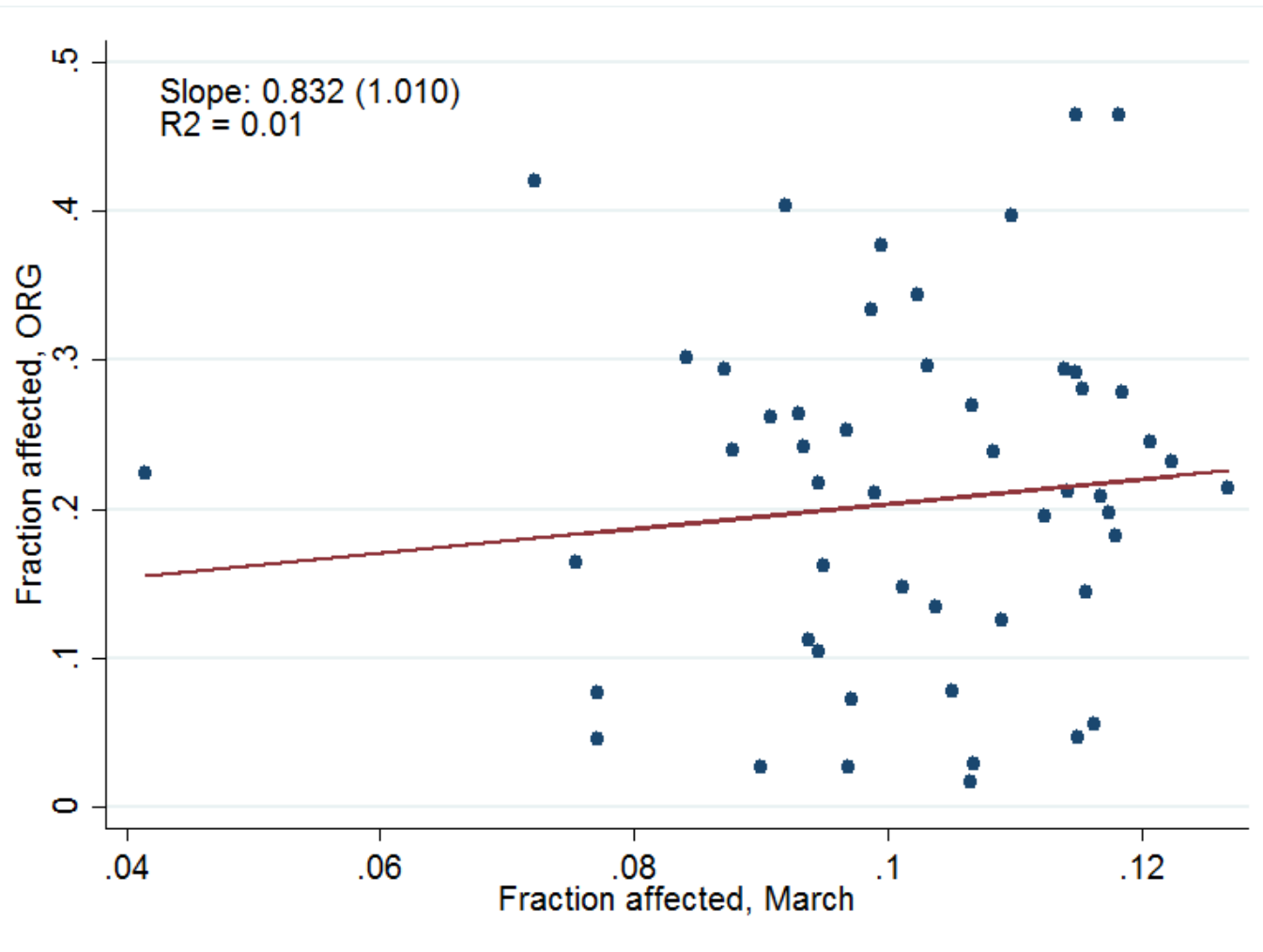
F_{st} is ORG fraction affected

Key idea: Percentile of March CPS is highly correlated with fraction affected even when March hourly wage near the minimum wage is measured with a lot of error

P40 in March is correlated with F*



Note: F in March is not correlated with F*



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| Fraction affected by minimum wage (March) | | | 1.054 (0.668) | | | | |
| R-squared | 0.30 | 0.25 | 0.05 | | | | |
| Period for first stage | | | | | | | |
| 40 th Percentile (March) | | | | | | | |
| R-squared | | | | | | | |

Notes: Each regression uses 51 observations for the 50 states and the District of Columbia. Columns 1-3 and reduced form models are weighted by the mean number of individual observations from 1989-1990 (for the data set used to construct the dependent variable). First stage models are weighted by the number of individual observations in each year. In column 3, the dependent variable is measured using the March CPS.

Can We Replicate Card (1992) in March CPS?

| | Dependent Variable: 1989-1990 Change in Mean Log Wage | | | | | | |
|--|---|------------------|------------------|-------------------|---------|---------|---------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | OLS | OLS | OLS | TS-2SLS | TS-2SLS | TS-2SLS | TS-2SLS |
| Fraction affected by minimum wage (ORG) | 0.15 (0.03) | 0.148 (0.036) | | 0.157 (0.074) | | | |
| Fraction affected by minimum wage (March) | | | 1.054 (0.668) | | | | |
| R-squared | 0.30 | 0.25 | 0.05 | | | | |
| Period for first stage | | | | 1989 | | | |
| 40 th Percentile (March) | | | | -0.678 (0.131) | | | |
| R-squared | | | | 0.43 | | | |

Notes: Each regression uses 51 observations for the 50 states and the District of Columbia. Columns 1-3 and reduced form models are weighted by the mean number of individual observations from 1989-1990 (for the data set used to construct the dependent variable). First stage models are weighted by the number of individual observations in each year. In column 3, the dependent variable is measured using the March CPS.

Can We Replicate Card (1992) in March CPS?

| | Dependent Variable: 1989-1990 Change in Mean Log Wage | | | | | | |
|--|---|------------------|------------------|-------------------|-------------------|---------|---------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | OLS | OLS | OLS | TS-2SLS | TS-2SLS | TS-2SLS | TS-2SLS |
| Fraction affected by minimum wage (ORG) | 0.15 (0.03) | 0.148 (0.036) | | 0.157 (0.074) | 0.180 (0.077) | | |
| Fraction affected by minimum wage (March) | | | 1.054 (0.668) | | | | |
| R-squared | 0.30 | 0.25 | 0.05 | | | | |
| Period for first stage | | | | 1989 | 2000-6 | | |
| 40 th Percentile (March) | | | | -0.678 (0.131) | -0.579 (0.071) | | |
| R-squared | | | | 0.43 | 0.27 | | |

Notes: Each regression uses 51 observations for the 50 states and the District of Columbia. Columns 1-3 and reduced form models are weighted by the mean number of individual observations from 1989-1990 (for the data set used to construct the dependent variable). First stage models are weighted by the number of individual observations in each year. In column 3, the dependent variable is measured using the March CPS.

Can We Replicate Card (1992) in March CPS?

| | Dependent Variable: 1989-1990 Change in Mean Log Wage | | | | | | |
|---|---|------------------|------------------|-------------------|-------------------|-------------------|---------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | OLS | OLS | OLS | TS-2SLS | TS-2SLS | TS-2SLS | TS-2SLS |
| Fraction affected by minimum wage (ORG) | 0.15 (0.03) | 0.148 (0.036) | | 0.157 (0.074) | 0.180 (0.077) | 0.189 (0.087) | |
| Fraction affected by minimum wage (March) | | | 1.054 (0.668) | | | | |
| R-squared | 0.30 | 0.25 | 0.05 | | | | |
| Period for first stage | | | | 1989 | 2000-6 | 1985-9 | |
| 40 th Percentile (March) | | | | -0.678 (0.131) | -0.579 (0.071) | -0.561 (0.103) | |
| R-squared | | | | 0.43 | 0.27 | 0.29 | |

Notes: Each regression uses 51 observations for the 50 states and the District of Columbia. Columns 1-3 and reduced form models are weighted by the mean number of individual observations from 1989-1990 (for the data set used to construct the dependent variable). First stage models are weighted by the number of individual observations in each year. In column 3, the dependent variable is measured using the March CPS.

Can We Replicate Card (1992) in March CPS?

| | Dependent Variable: 1989-1990 Change in Mean Log Wage | | | | | | |
|--|---|------------------|------------------|-------------------|-------------------|-------------------|-------------------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) |
| | OLS | OLS | OLS | TS-2SLS | TS-2SLS | TS-2SLS | TS-2SLS |
| Fraction affected by minimum wage (ORG) | 0.15 (0.03) | 0.148 (0.036) | | 0.157 (0.074) | 0.180 (0.077) | 0.189 (0.087) | 0.235 (0.101) |
| Fraction affected by minimum wage (March) | | | 1.054 (0.668) | | | | |
| R-squared | 0.30 | 0.25 | 0.05 | | | | |
| Period for first stage | | | | 1989 | 2000-6 | 1985-9 | 1985- 2006 |
| 40 th Percentile (March) | | | | -0.678 (0.131) | -0.579 (0.071) | -0.561 (0.103) | -0.443 (0.054) |
| R-squared | | | | 0.43 | 0.27 | 0.29 | 0.17 |

Notes: Each regression uses 51 observations for the 50 states and the District of Columbia. Columns 1-3 and reduced form models are weighted by the mean number of individual observations from 1989-1990 (for the data set used to construct the dependent variable). First stage models are weighted by the number of individual observations in each year. In column 3, the dependent variable is measured using the March CPS.

Summary of Method

1. Our method does very well in the early 1990s!
 2. It replicates Card more accurately and precisely than using March fraction affected
 3. Magnitudes are sensitive to first stage; knowing which is the correct scaling factor for late 1960s is impossible, so we will show results with 2000-2006 (but you can use others to make your favorite correction)
- Note: we can estimate the reduced-form effects without the method to scale the results: this will give us the signs but not magnitudes to compare with current literature



THE EFFECTS OF THE 1966 FLSA ON WAGES AND EMPLOYMENT

Data and Sample

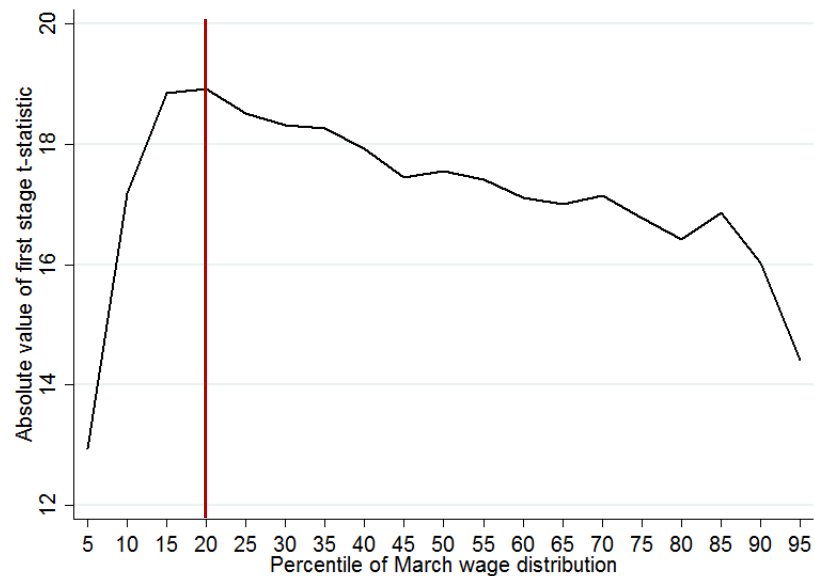
- 1960 census; 1962-1976 March CPS
- Annual wages and weeks measured in year before the survey; hours measured in reference week
- Dollars (for wages and minimum) inflated using the CPI-U
- Sample: Men ages 16-64, not in group quarters or Armed Forces for whom self-employment accounts for less than 10% of total income (Lemieux 2006).

Generate TS-2SLS Estimate

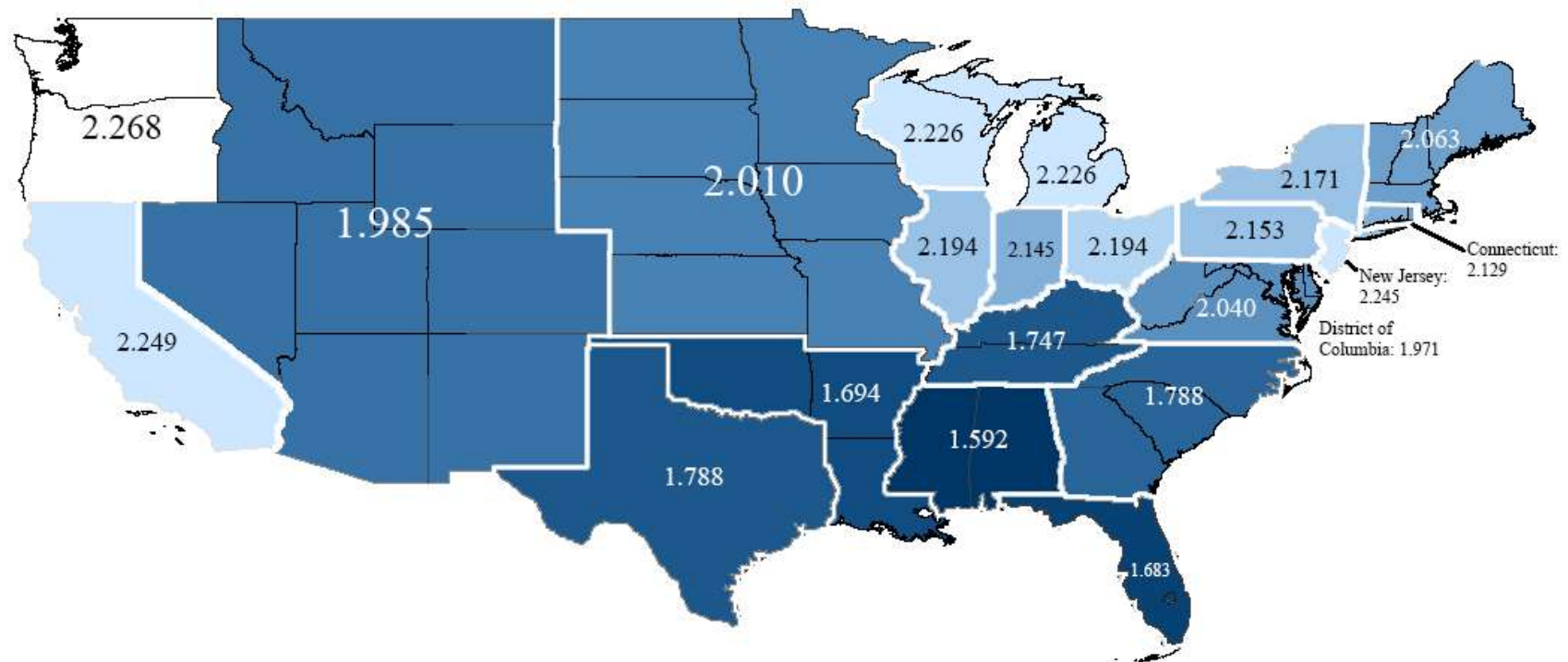
Estimate the reduced-form model:

$$Y_{ist} = \sum_{y=1959}^{1975} \pi_y 1(t = y) P20_s + X_{st} \tilde{\beta} + \gamma_s + \delta_t + \alpha_{s,c(i)} + \varepsilon_{ist}$$

Adults, 2000-2006



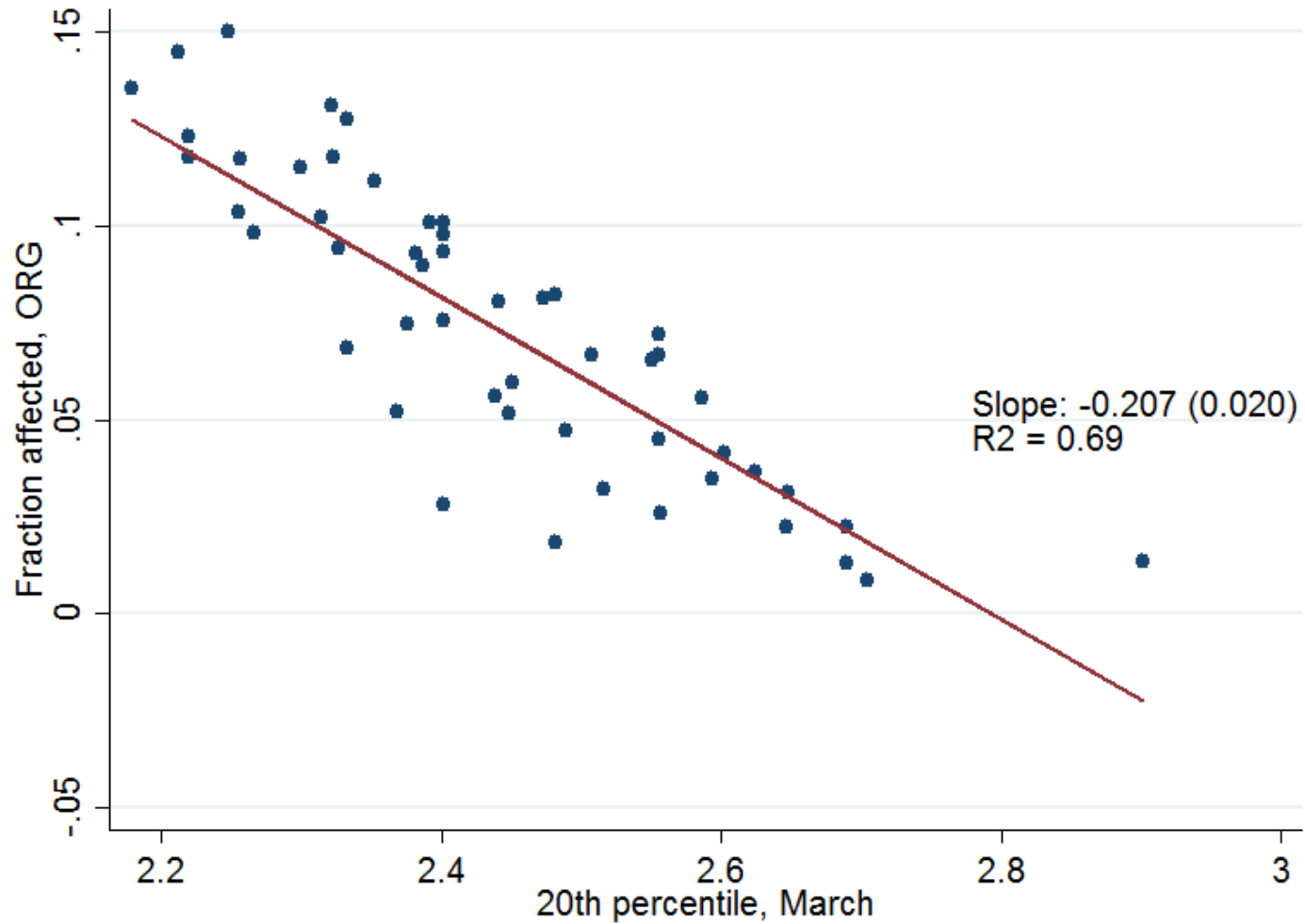
Distribution of the 20th Percentile in March CPS



The figure shows 21 state groups available in the public 1967 March CPS. Darker shades indicate a lower 20th percentile in hourly wages.

Regional variation motivates state-group f.e., state-group by cohort f.e.

Strength of the first stage for adults



HZ2

First Stage Estimates for Men, 16-64

| | Dependent variable: Fraction Affected, ORG | | | | | | | |
|------------------------|--|-----------------------|-----------------------|------------------------|-------|-------|-------|-------|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
| Sample period | 1989 | 2000-6 | 1985-9 | 1986-2006 | | | | |
| 20th Percentile, March | -0.207*** (0.0169) | -0.136*** (0.0122) | -0.161*** (0.0135) | -0.111*** (0.00981) | | | | |
| Rewighted | | | | | | | | |
| R-squared | 0.691 | 0.420 | 0.565 | 0.261 | 0.402 | 0.144 | 0.337 | 0.242 |

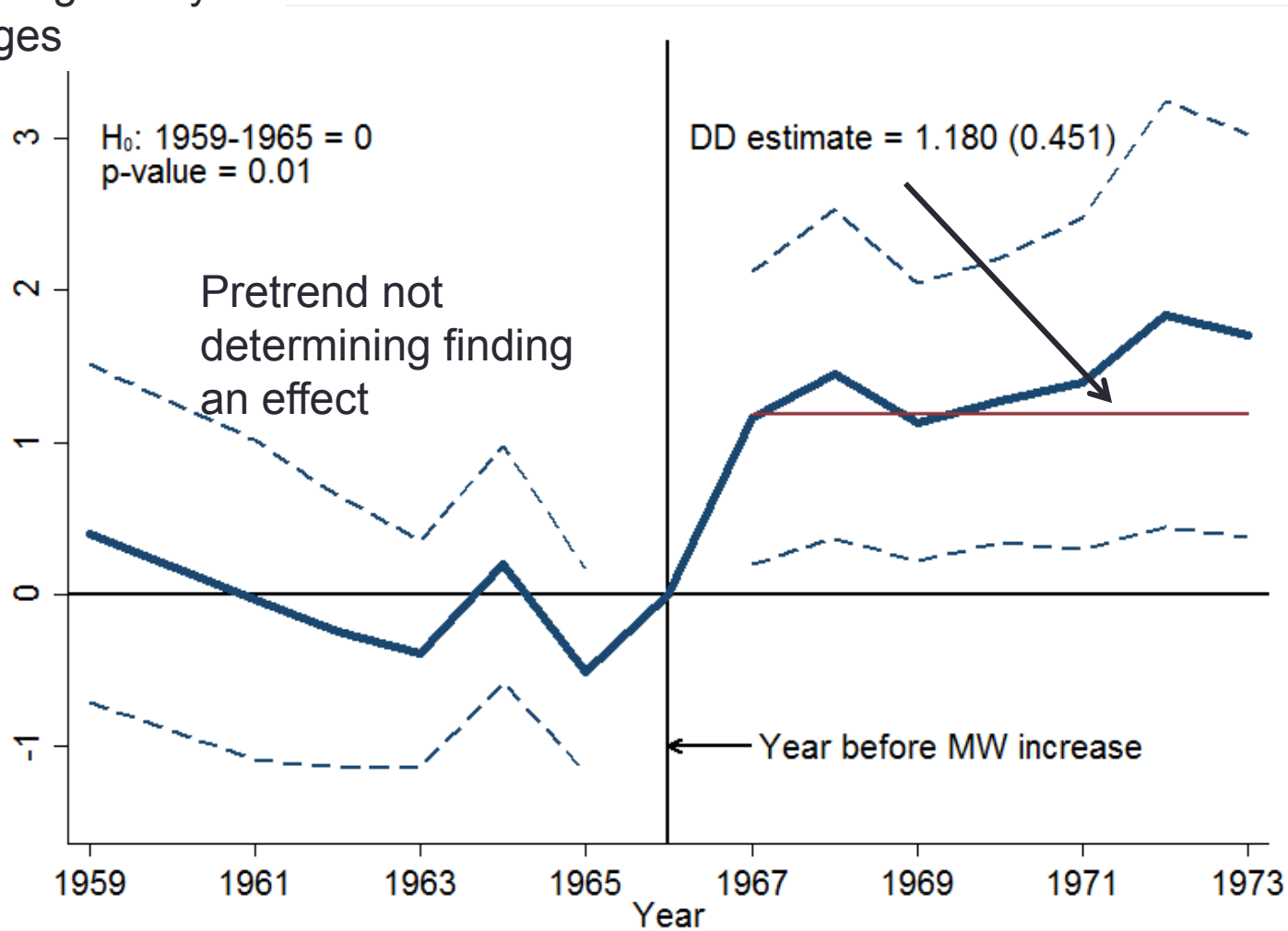
“Rewighted” indicates that we reweight the observed characteristics to resemble the 1966 characteristics (age, education, nonwhite, industry, marital status, metropolitan status, region, and part-time employment) and normalize the March wage distribution in each year to have the same median and standard deviation as 1966.



WAGE EFFECTS ON MEN, AGES 16-64

TS-2SLS Effects of 1966 FLSA on Wages

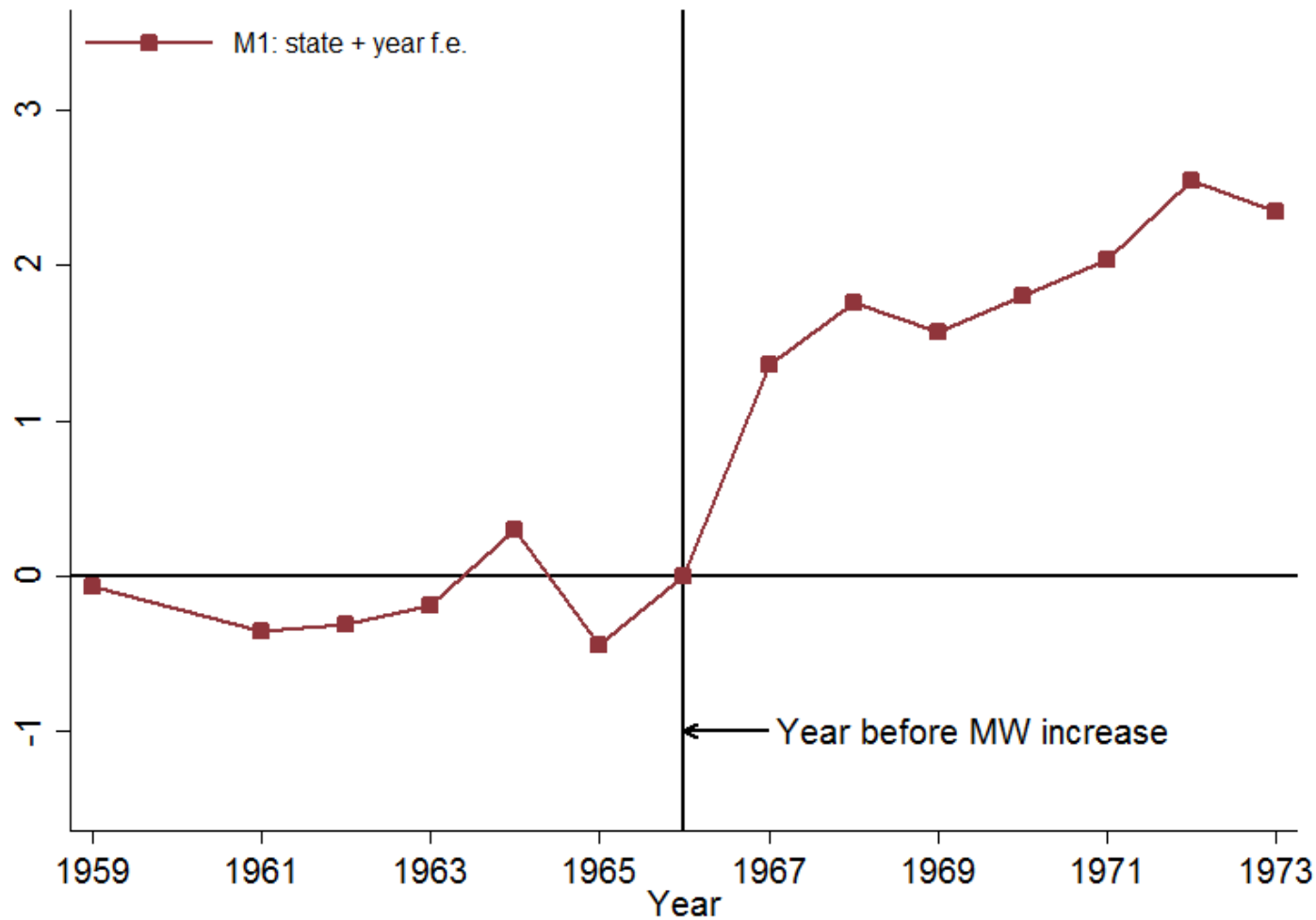
DV: log hourly wages



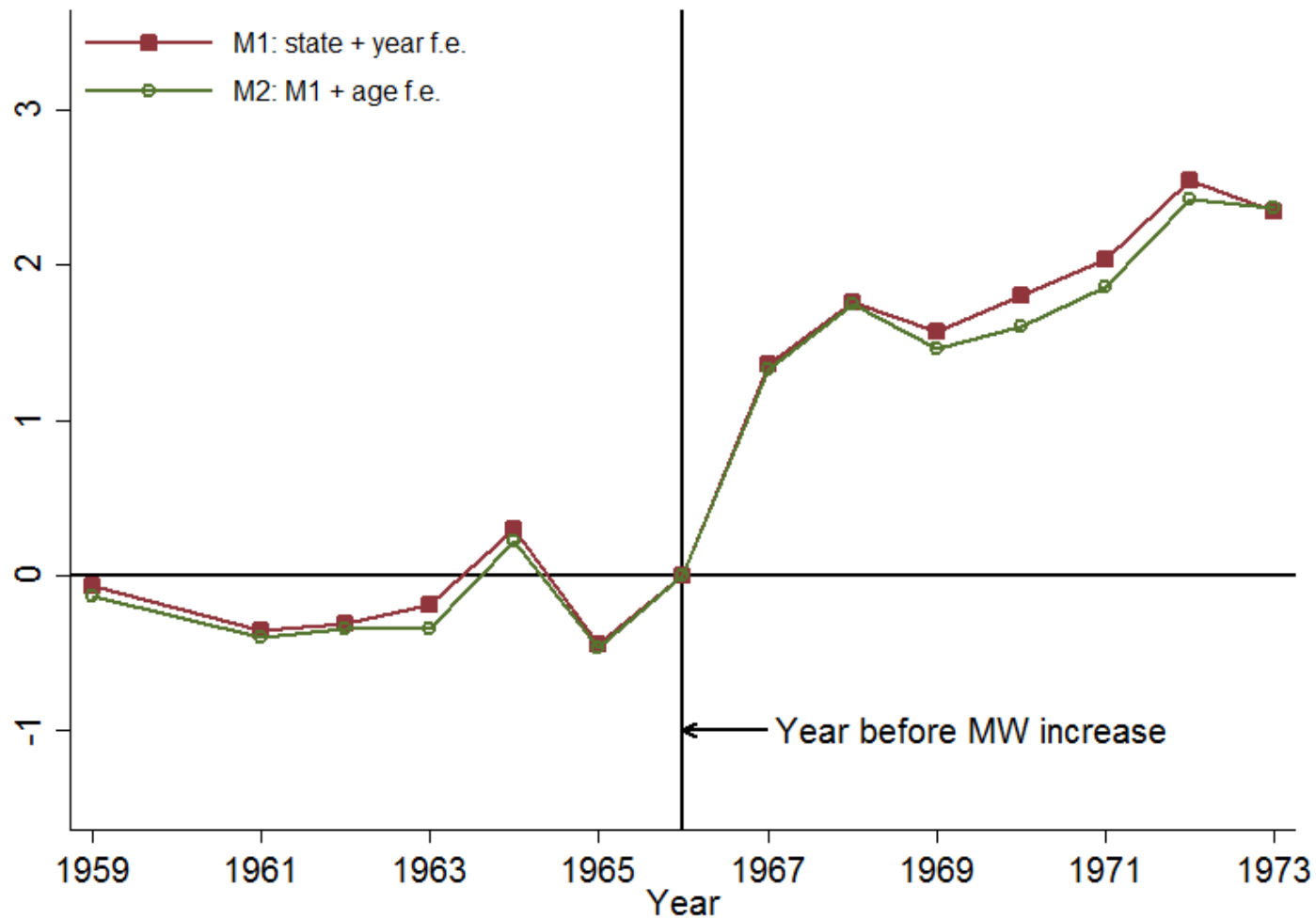
How Big Are These Effects?

- Diff-in-Diff TS2SLS: 1.2 (0.45)
- Increasing the fraction affected by 50% (0.024 pp, moving from AL-MS to TX) means a 0.011 log point ($=1.2 \times 0.024$) increase in wages
- Alternatively, increasing fraction affected by 1 std (0.028, moving from AL-MS to the middle of the distribution) means a 0.033 log point increase
- Simple benchmark: 0.25 log points assumes
 - All workers in range "affected", \$1.25 in 1966 and \$1.60 after
 - No spillovers on other workers' wages
 - No disemployment effects
 - Coverage and enforcement were constant
 - Implied TS2SLS coefficient = $0.25 = \ln(1.60) - \ln(1.25)$

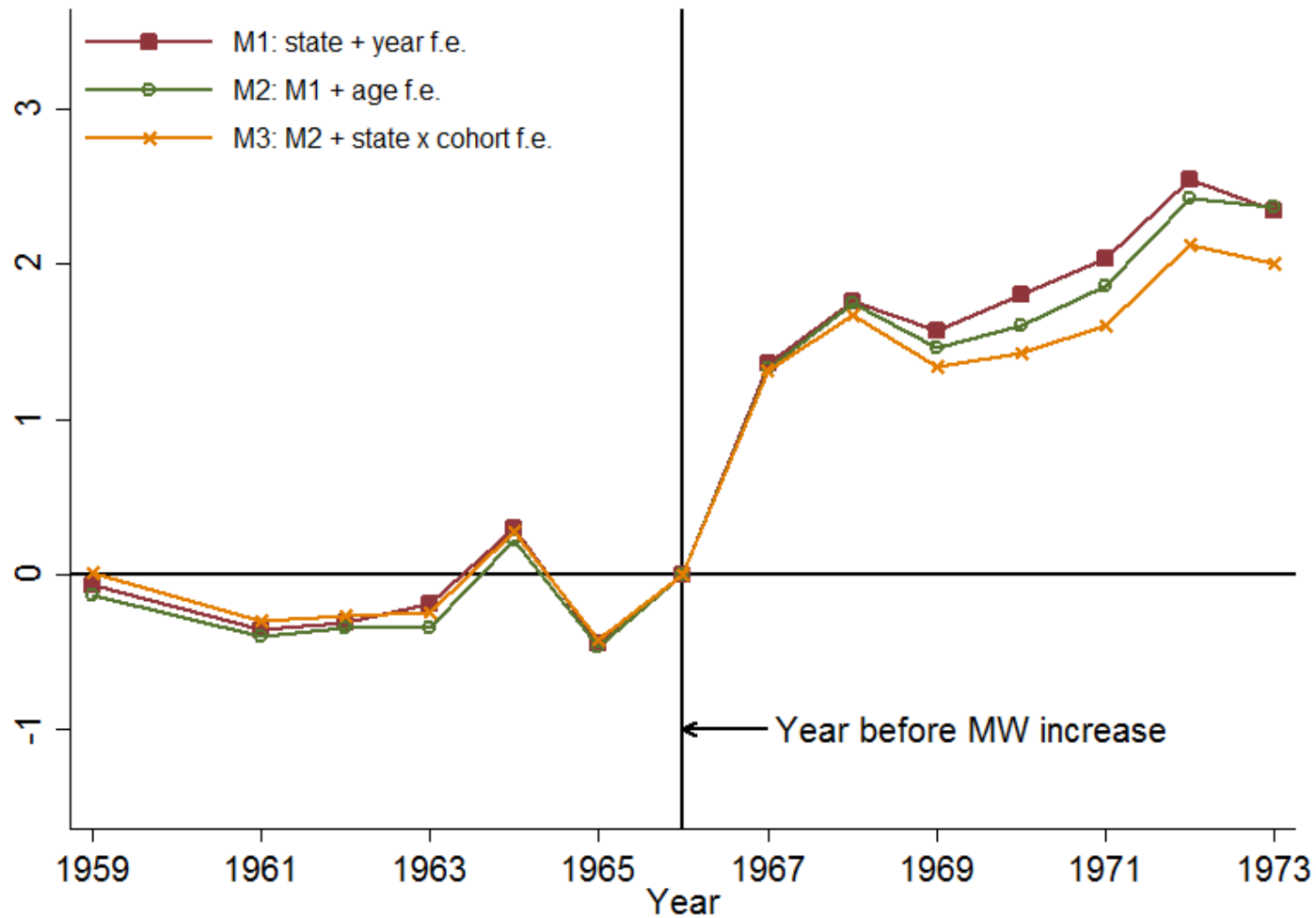
Robustness: Effects of 1966 FLSA on Wages



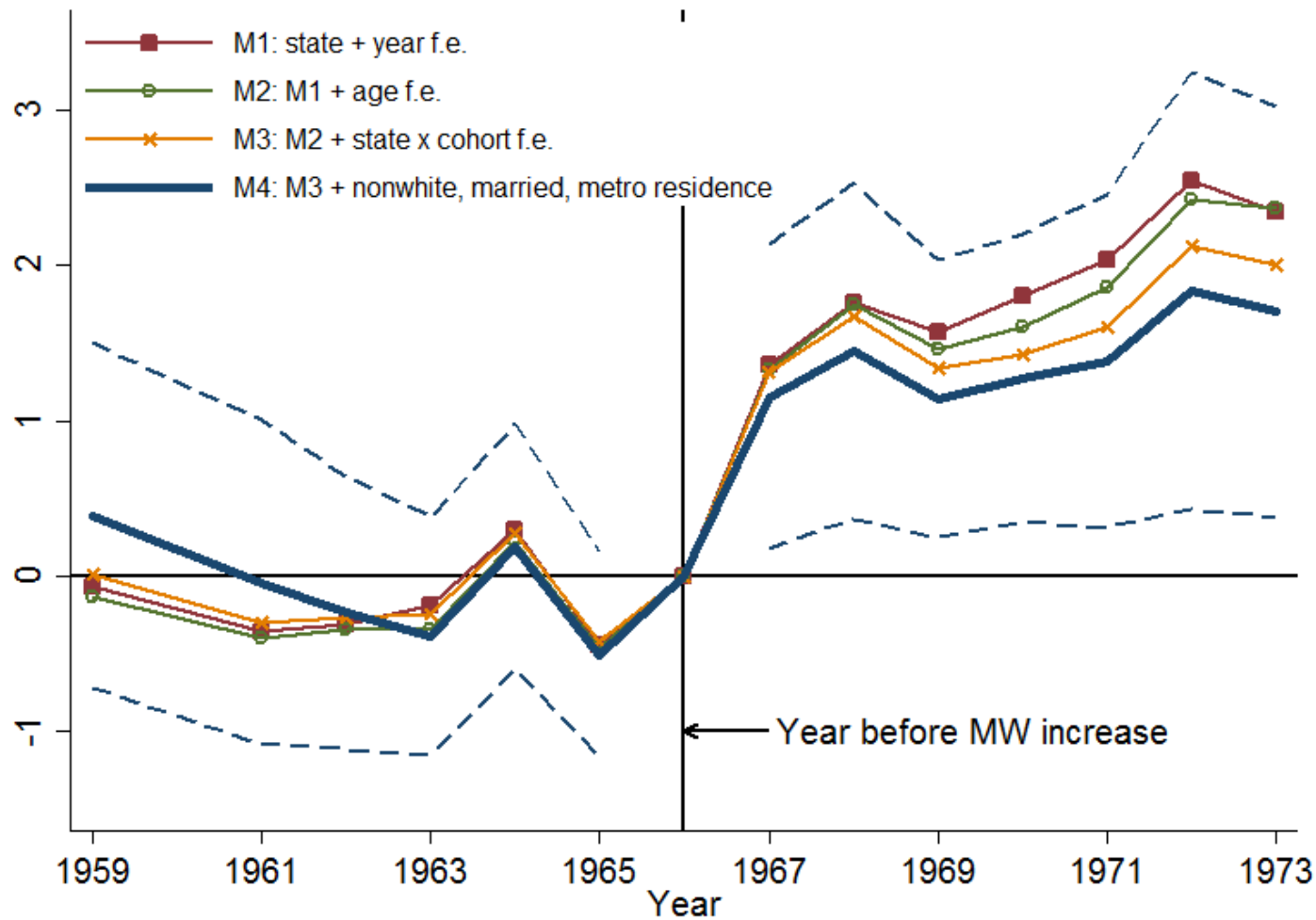
Robustness: Effects of 1966 FLSA on Wages



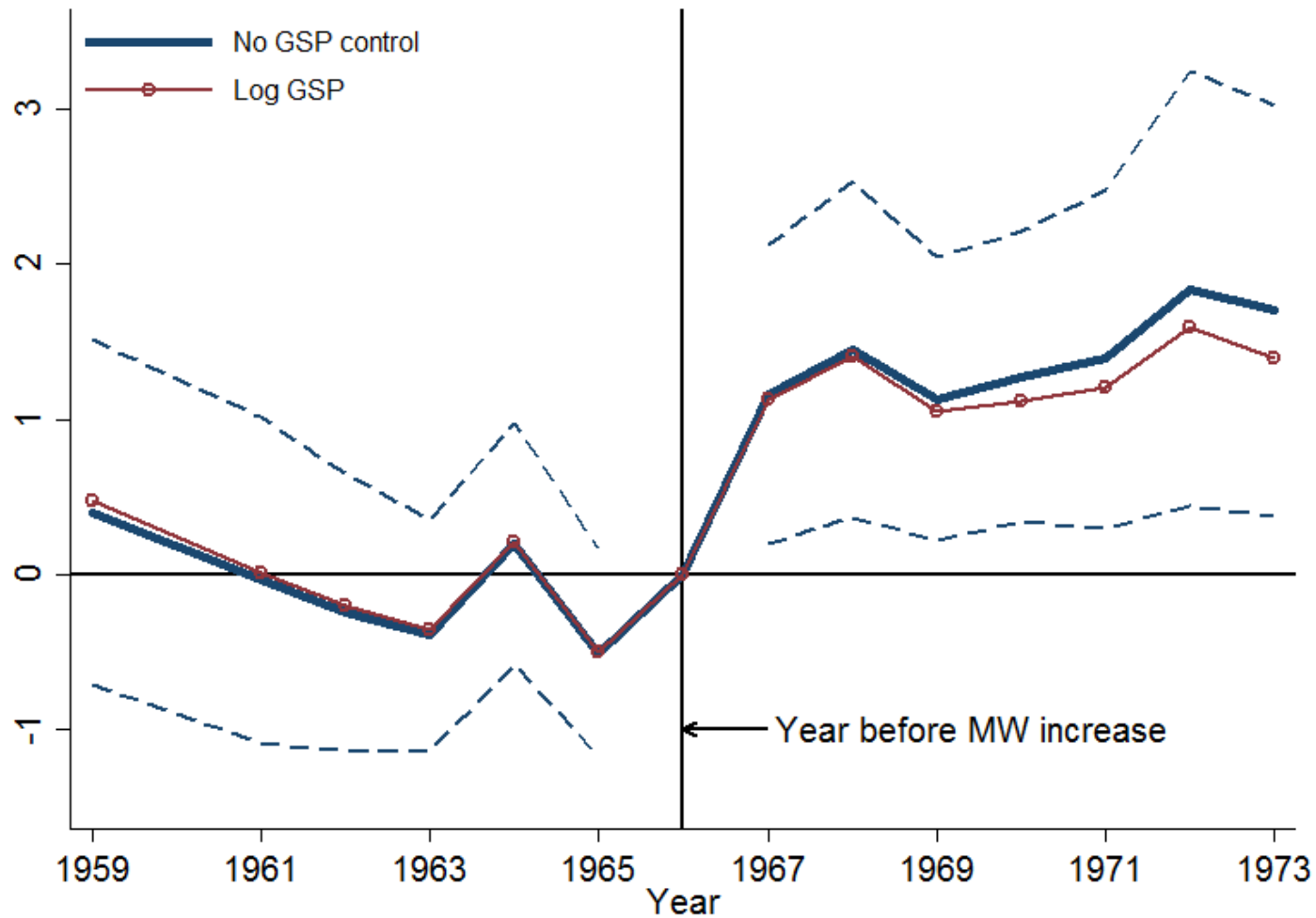
Robustness: Effects of 1966 FLSA on Wages



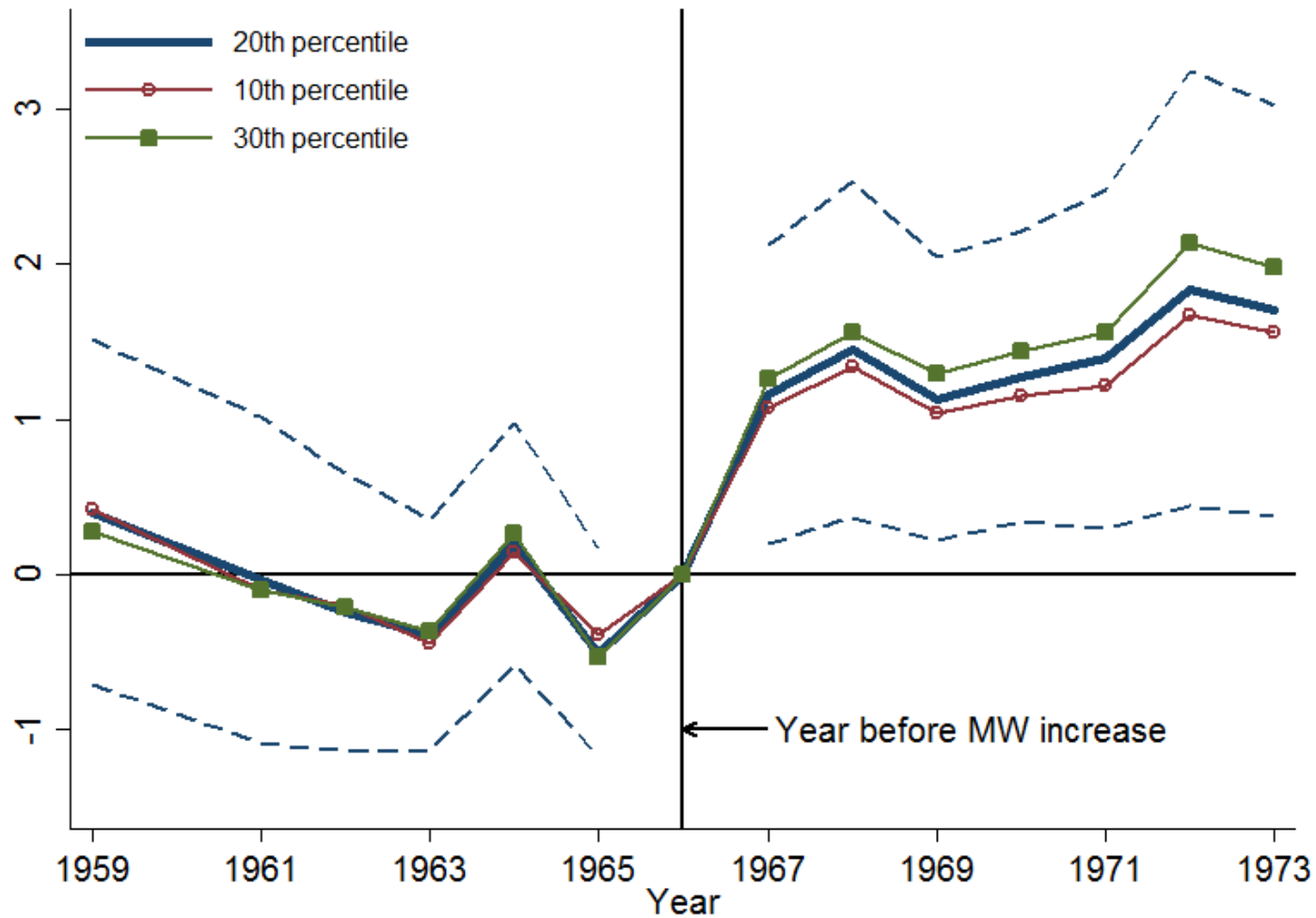
Robustness: Effects of 1966 FLSA on Wages



Robustness: Effects of 1966 FLSA on Wages



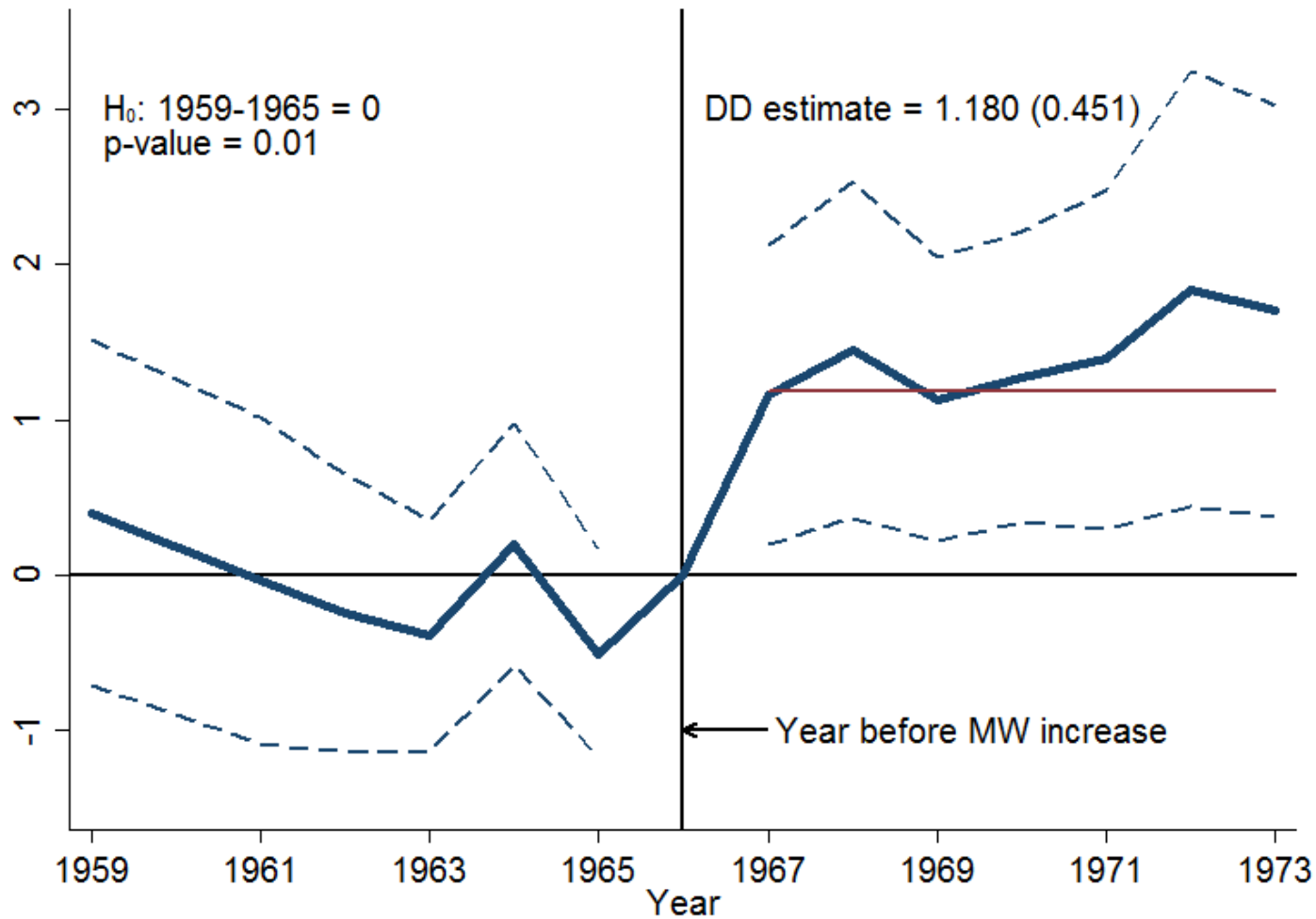
Robustness: Effects of 1966 FLSA on Wages



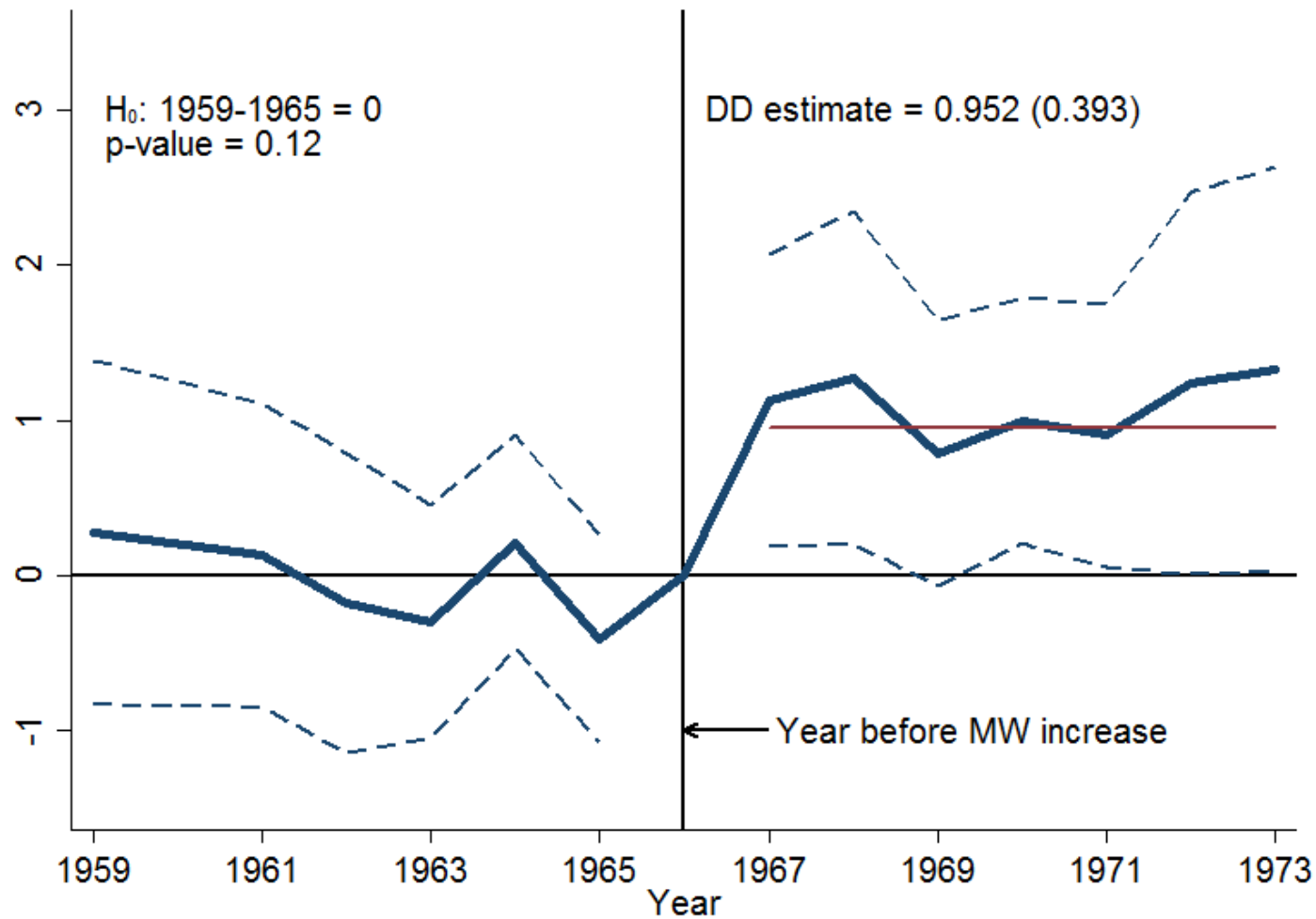


WAGE EFFECTS BY RACE

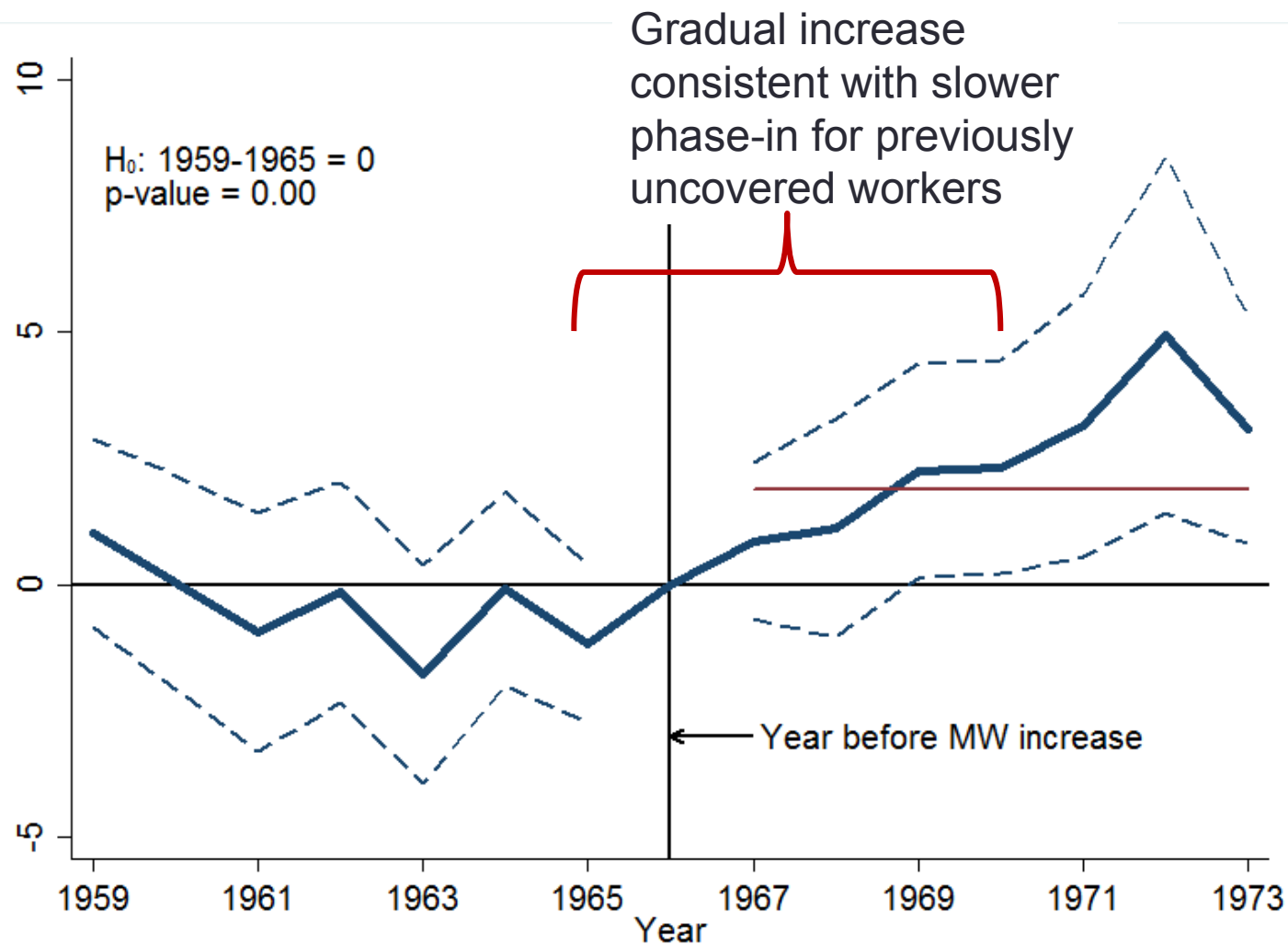
TS-2SLS Effects of 1966 FLSA on Wages



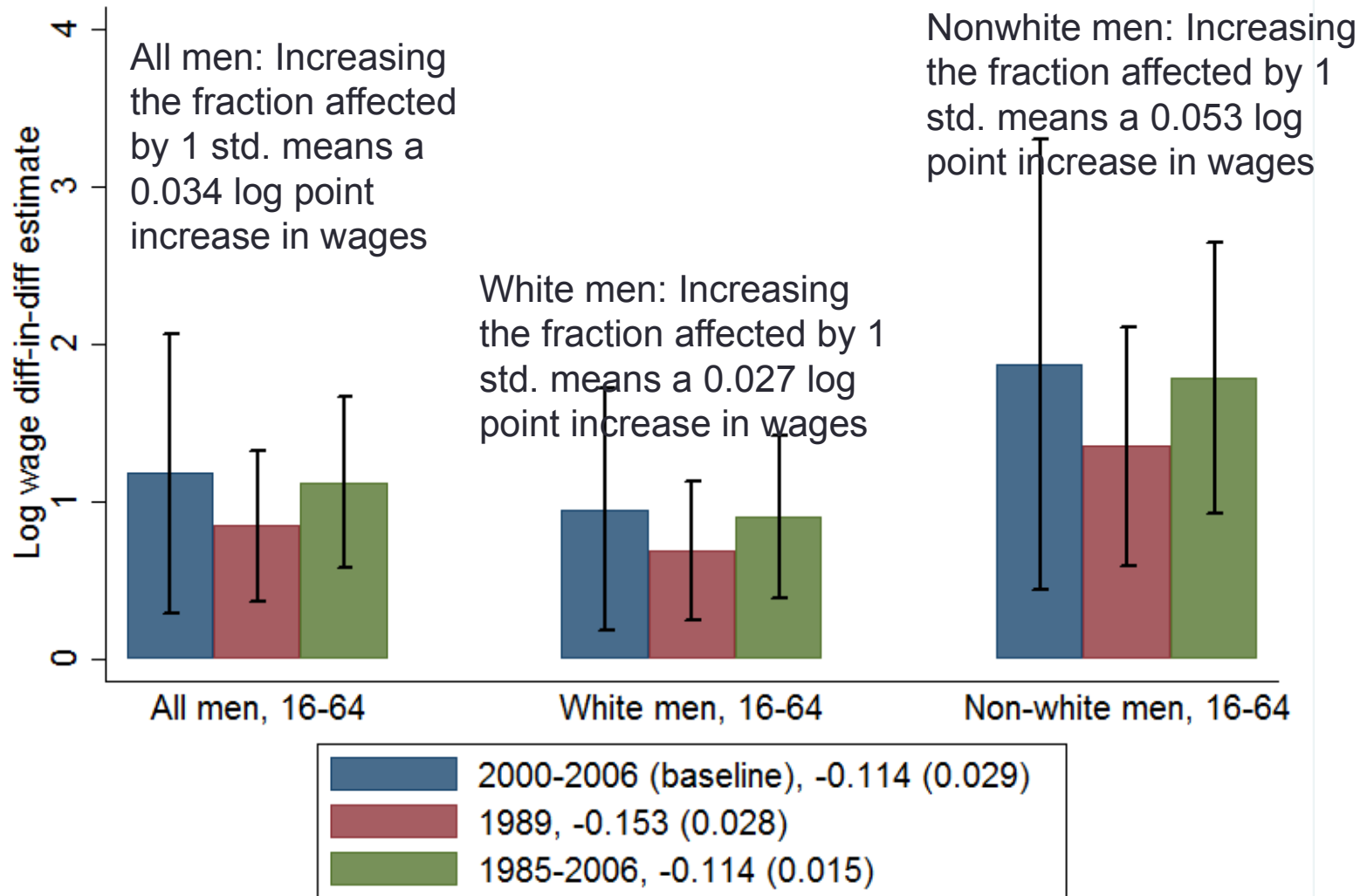
TS-2SLS Effects on Wages for Whites



TS-2SLS Effects on Wages for Nonwhites



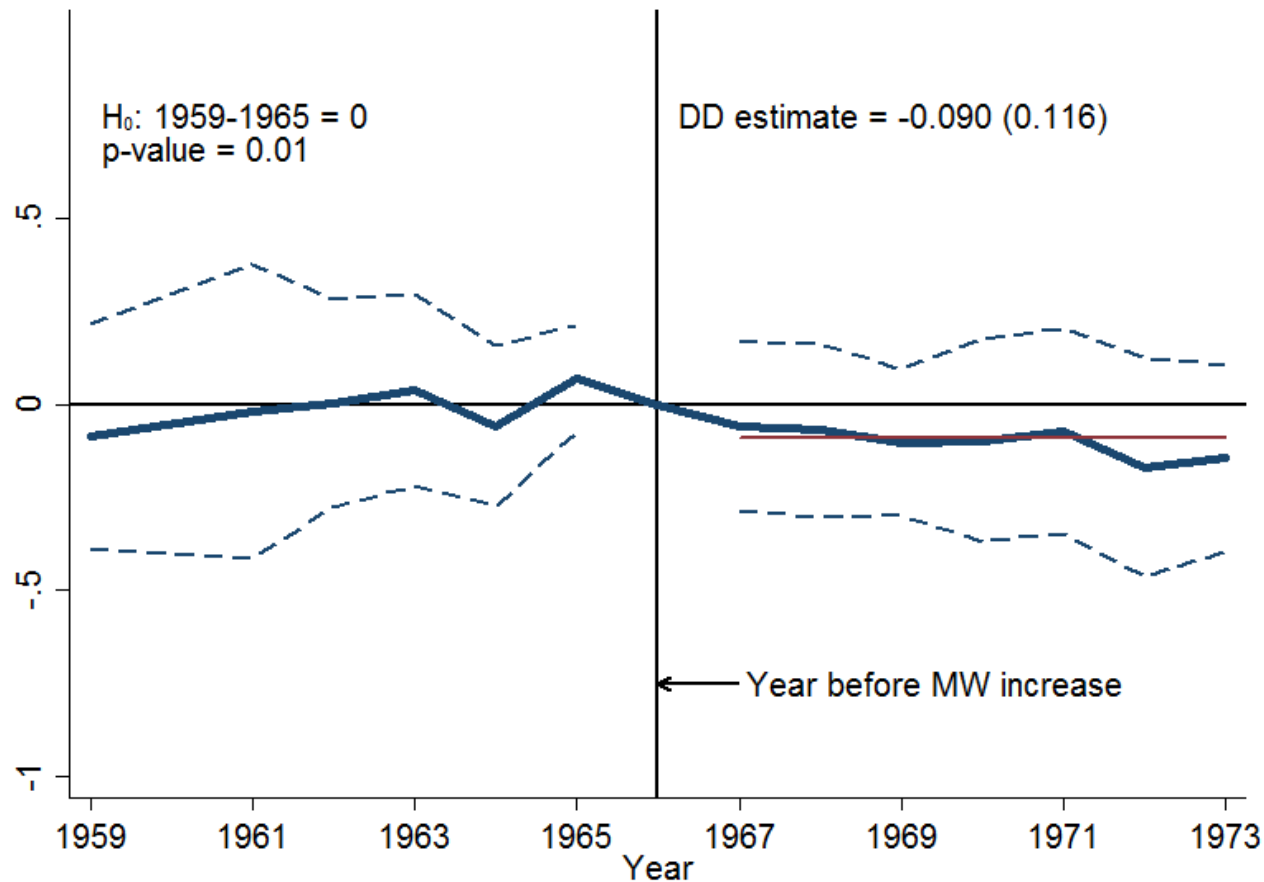
Summary of Effects on Wages





EMPLOYMENT EFFECTS ON MEN AGES 16 TO 64

TS-2SLS Effects of 1966 FLSA on Employment



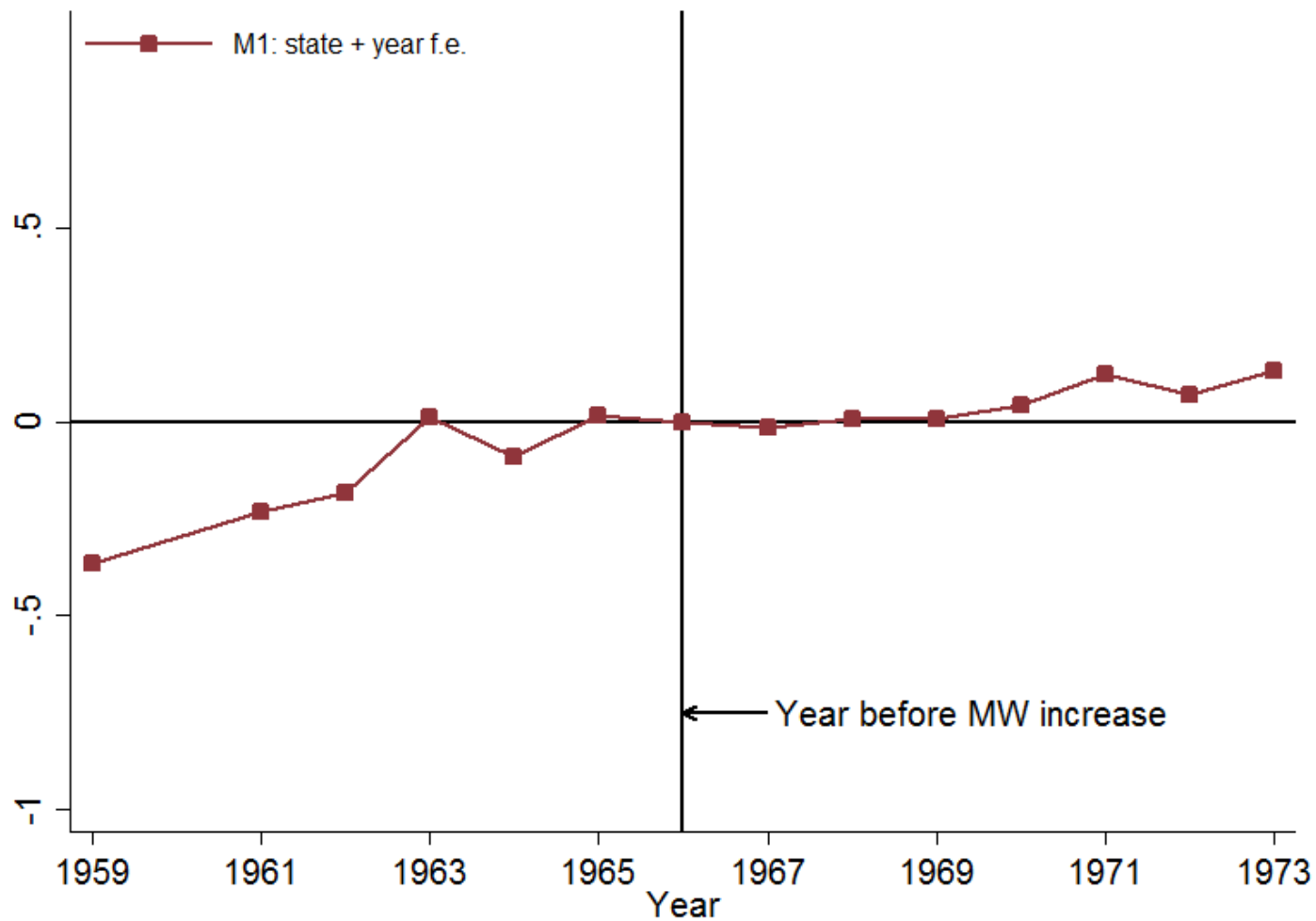
How Big Are Employment Effects?

- Diff-in-Diff TS2SLS: -0.09 (0.12)
- At the mean, increasing the fraction affected by 50% (moving from AL-MS to TX) means a 0.31% decrease in employment (-0.0028 divided by mean of 92%)
- At the mean, increasing fraction affected by 1 std (moving from AL-MS to the middle of the distribution) means a 0.28% decrease in employment (-0.0026 divided by mean of 92%)
- Lower range of 95% confidence interval implies 1% decline

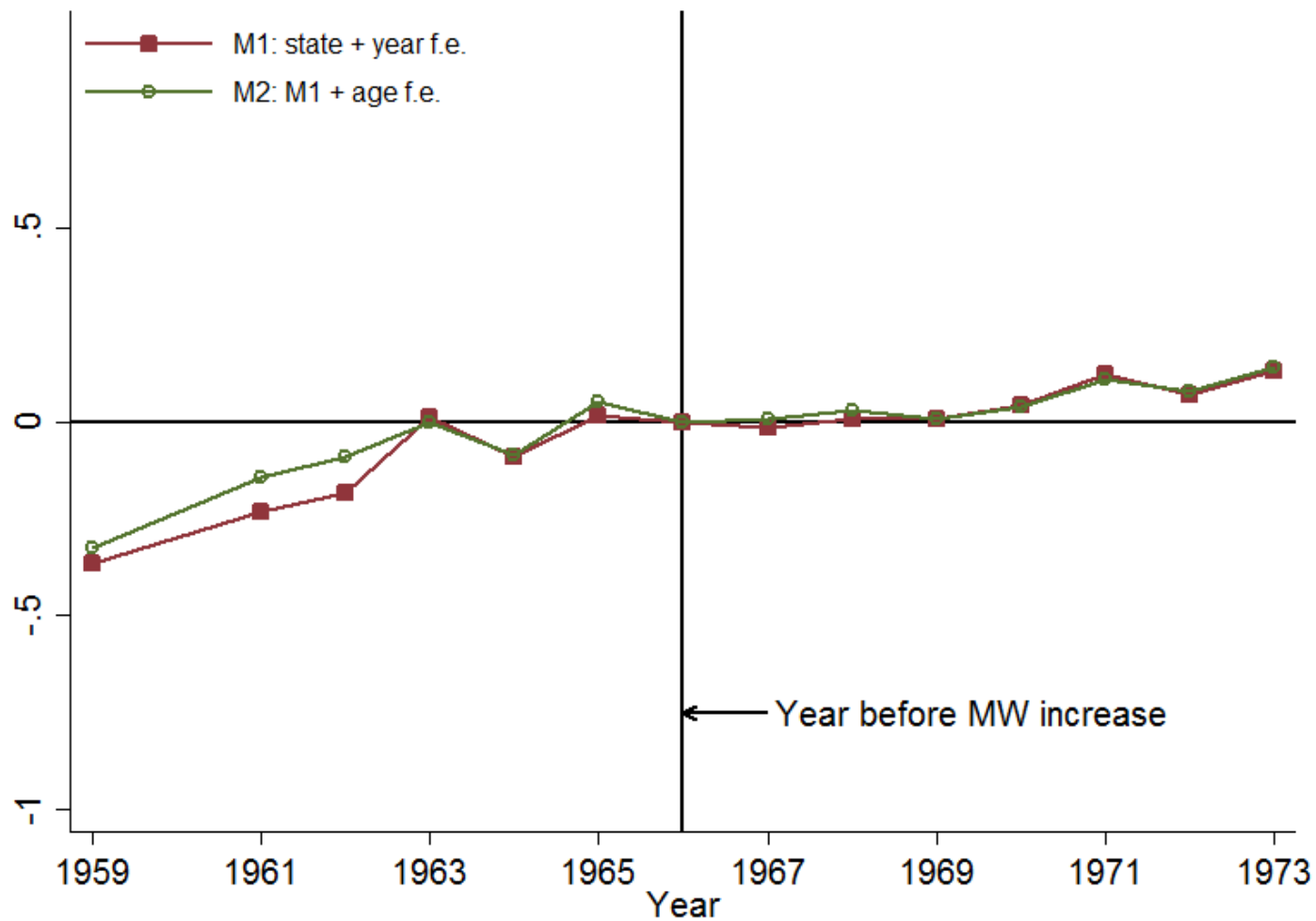
Compare this to:

- Card (1992) for teenagers:
 - No controls: 0.02 (0.03)
 - Control for Emp-Pop: -0.01 (0.03)

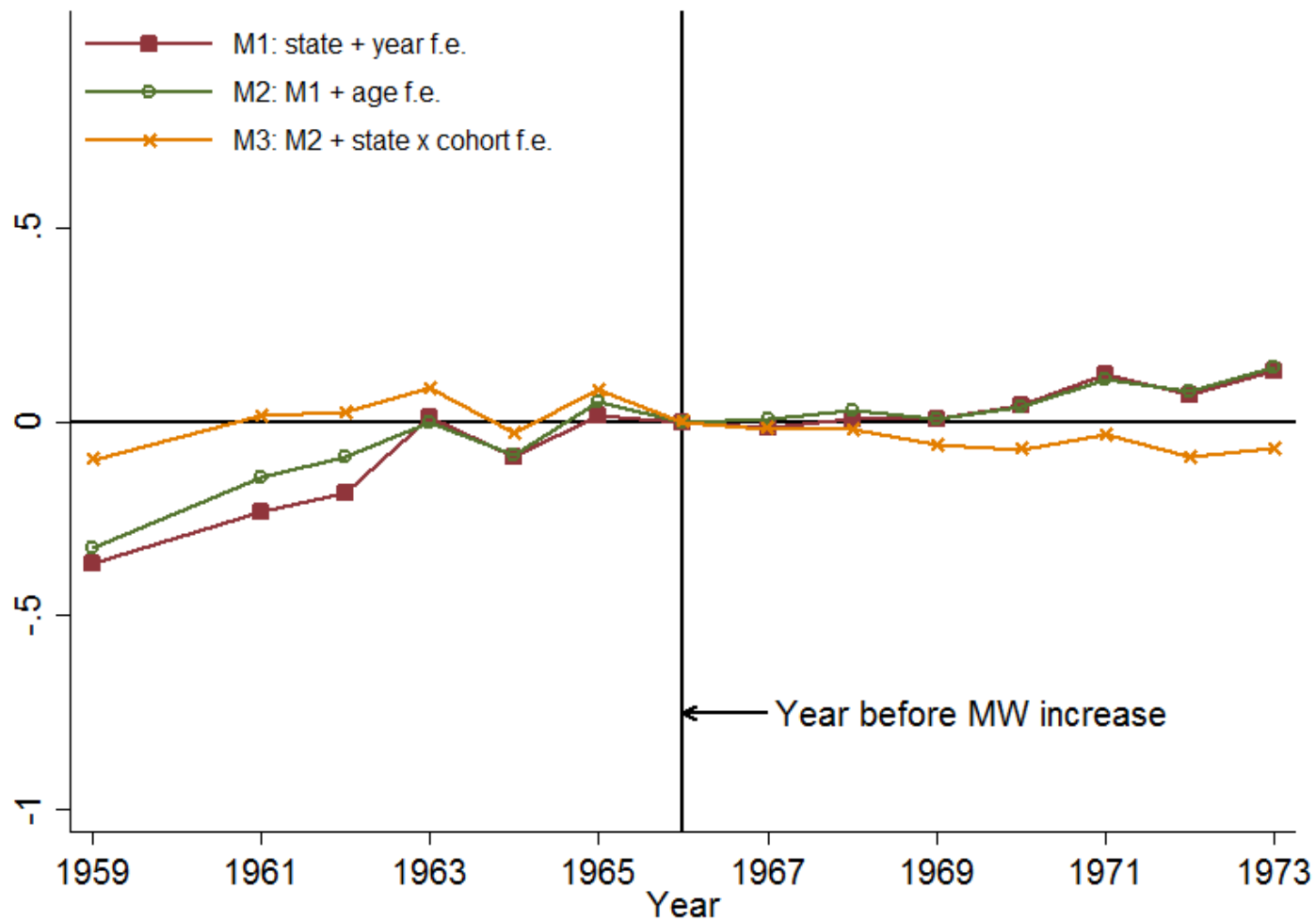
Robustness: Effects of 1966 FLSA on Employment



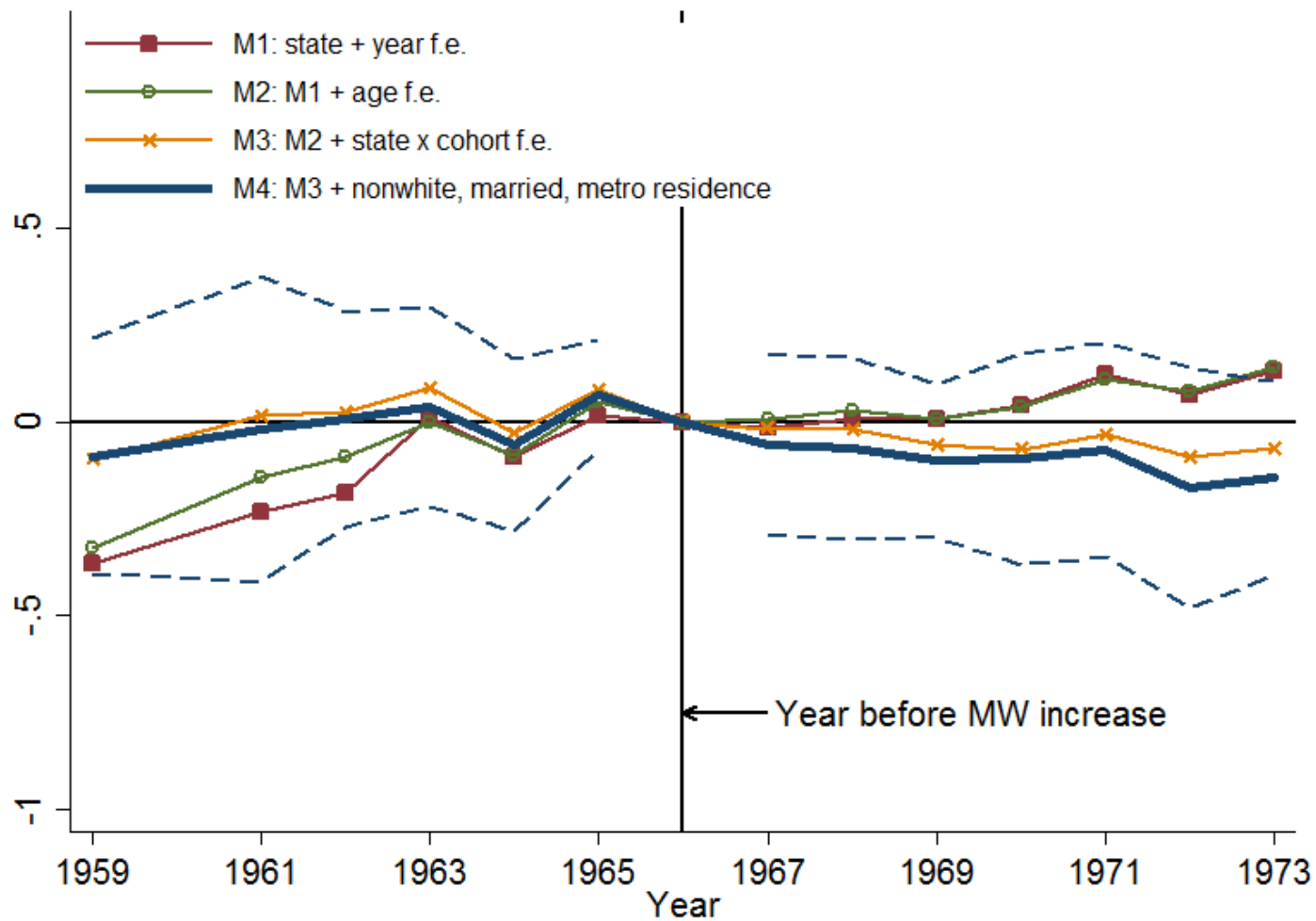
Robustness: Effects of 1966 FLSA on Employment



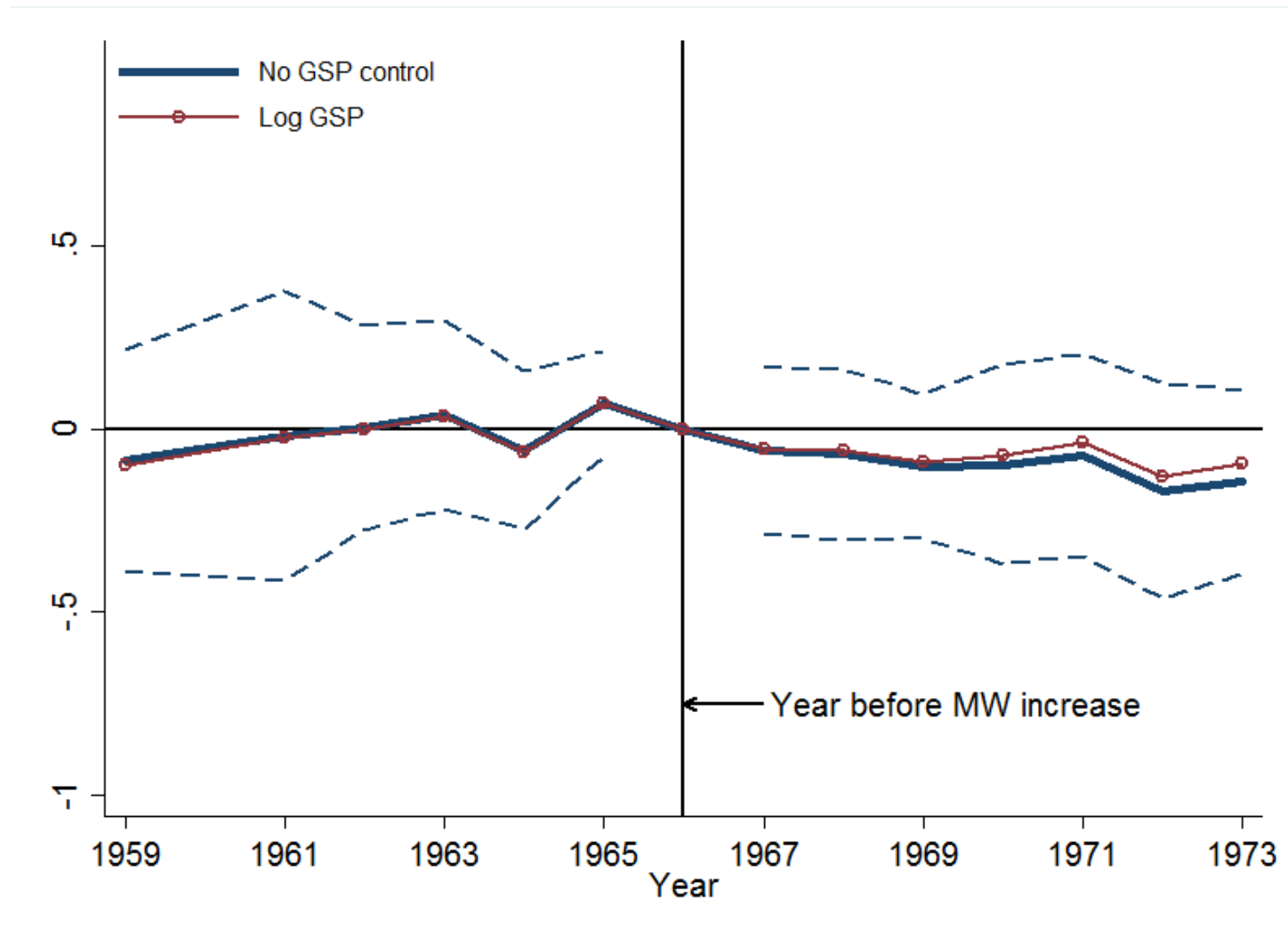
Robustness: Effects of 1966 FLSA on Employment



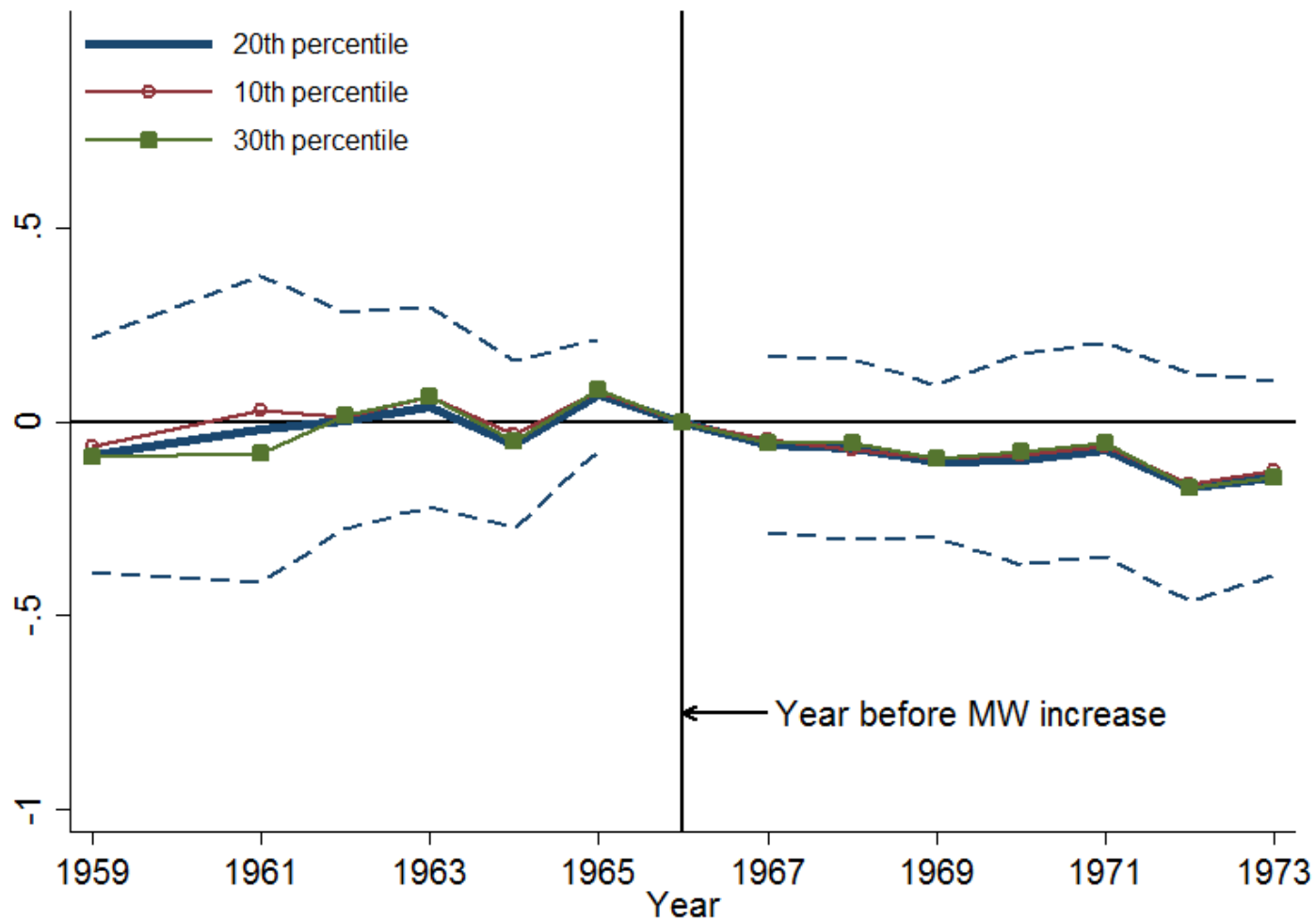
Robustness: Effects of 1966 FLSA on Employment



Robustness: Effects of 1966 FLSA on Employment



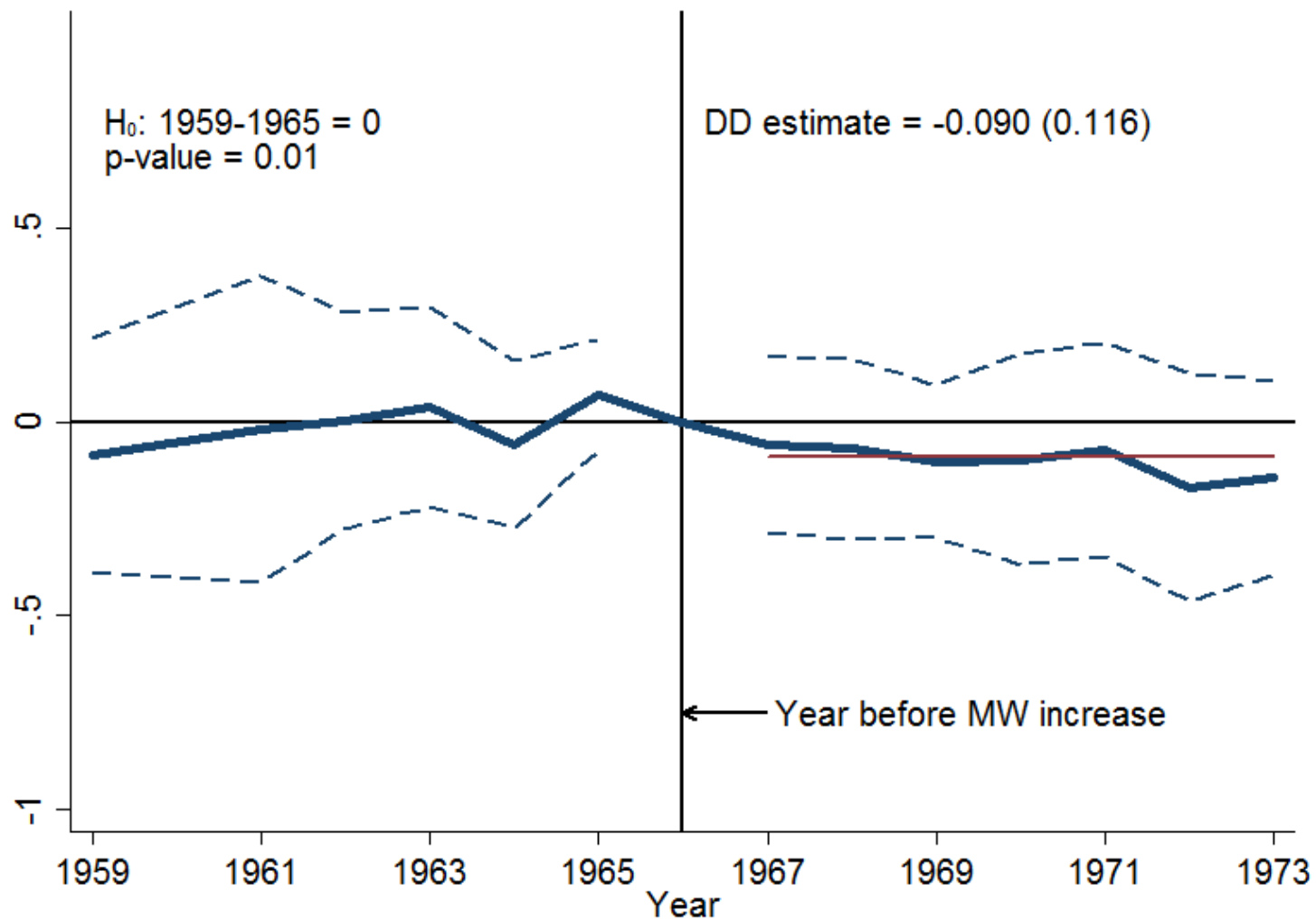
Robustness: Effects of 1966 FLSA on Employment



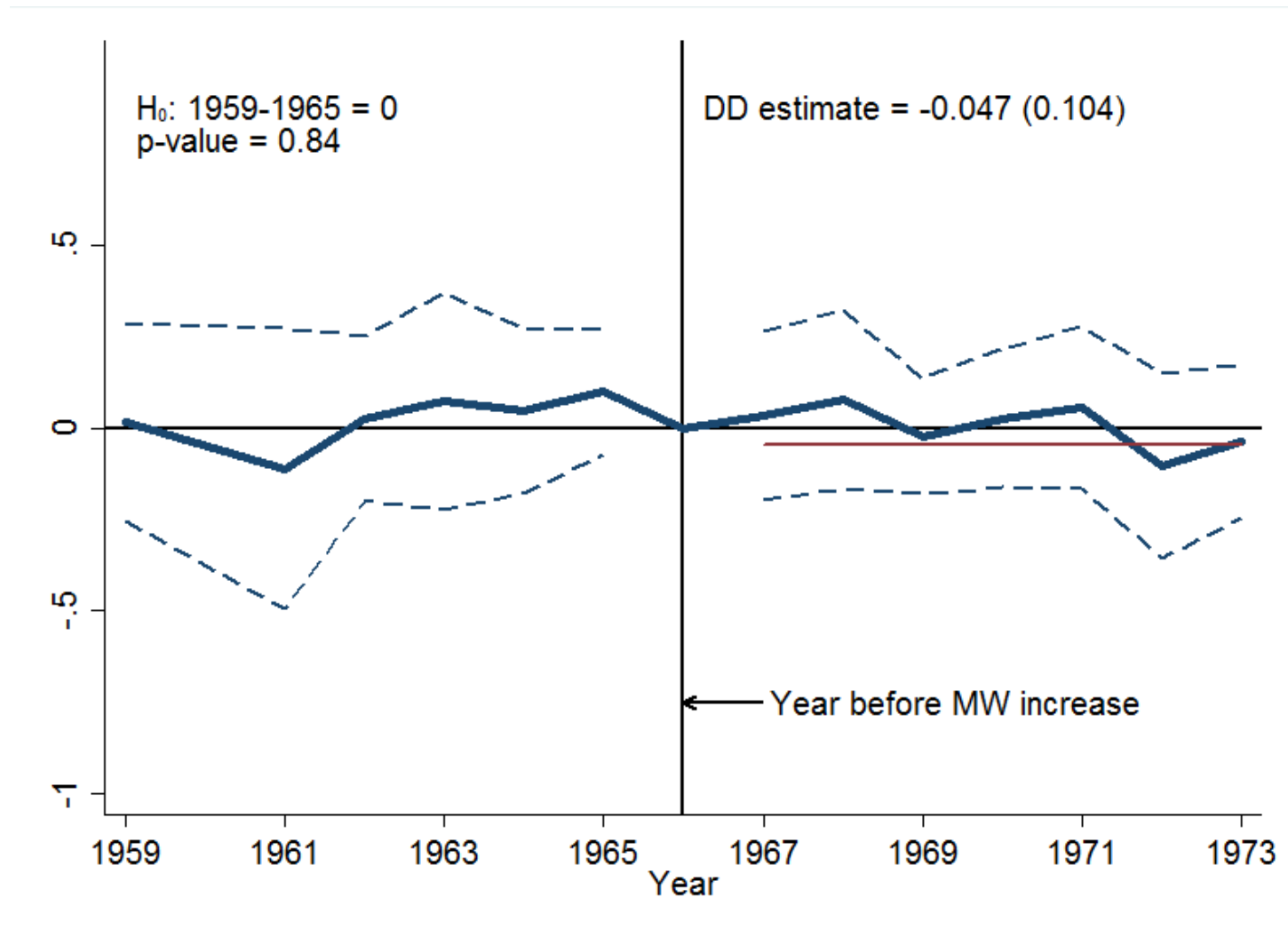


EMPLOYMENT EFFECTS BY RACE

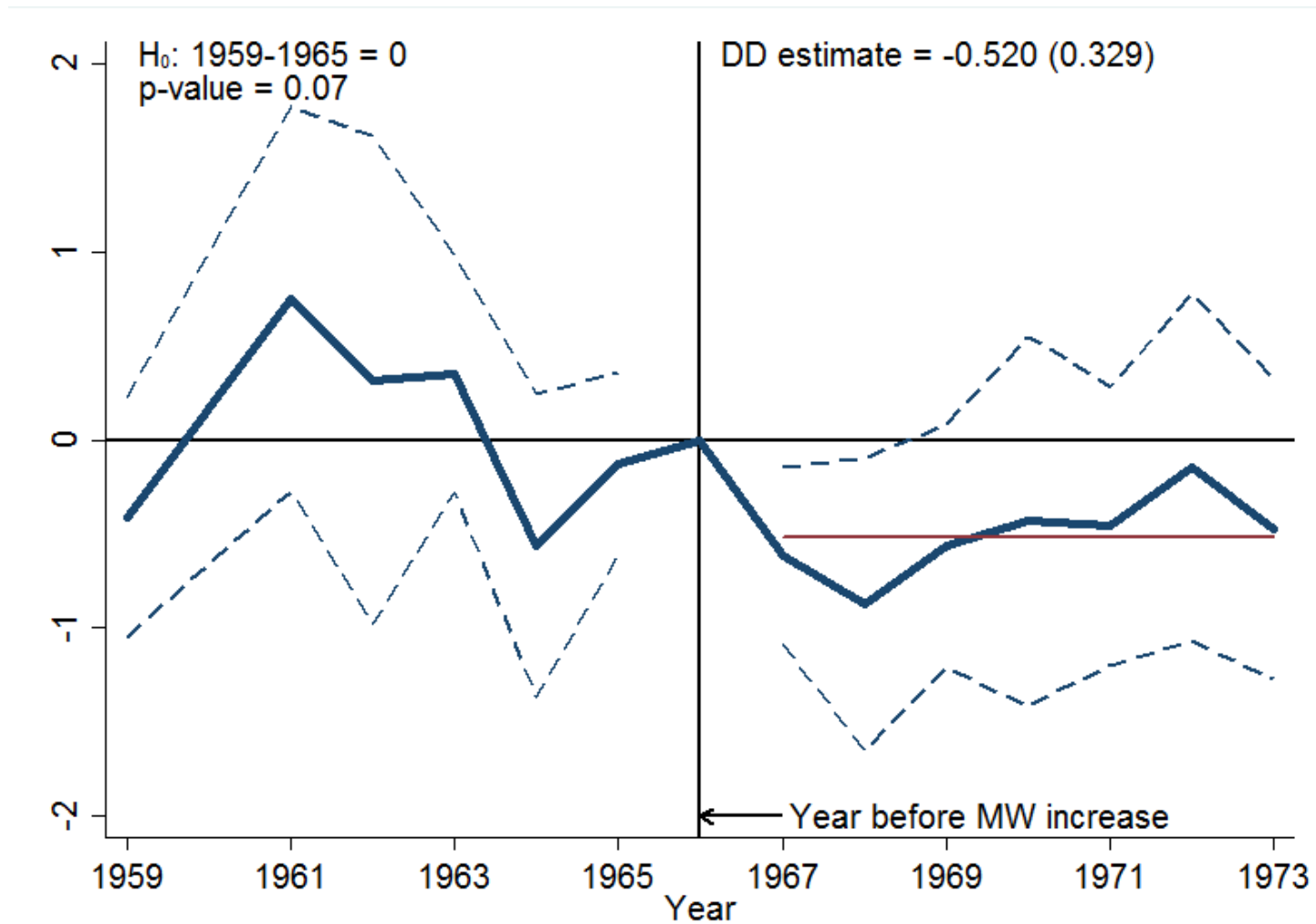
TS-2SLS Effects of 1966 FLSA on Employment



TS-2SLS Effects on Emp. for Whites



TS-2SLS Effects on Emp. for Nonwhites



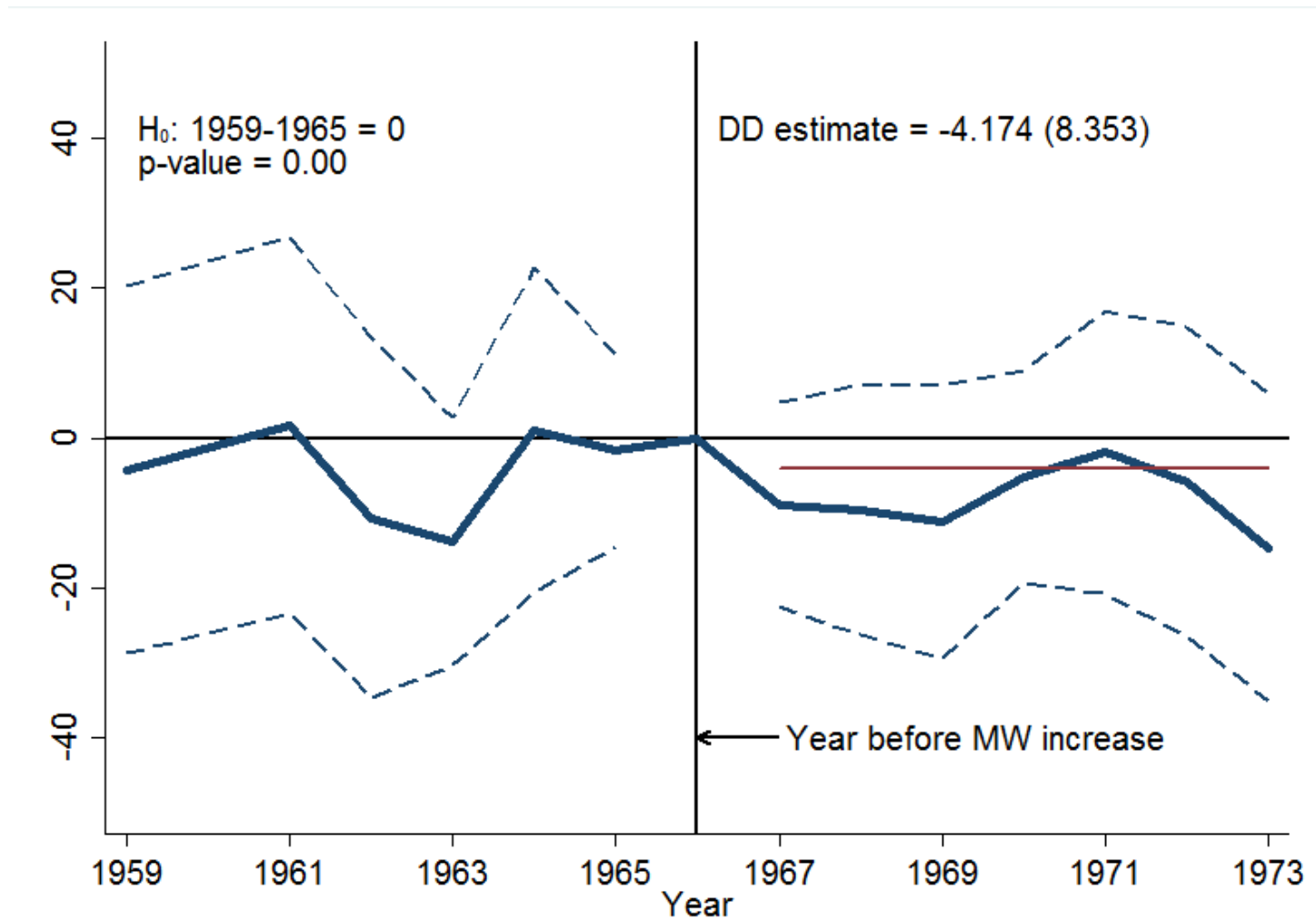
Summary of Effects on Employment





EFFECTS ON WEEKS WORKED BY RACE

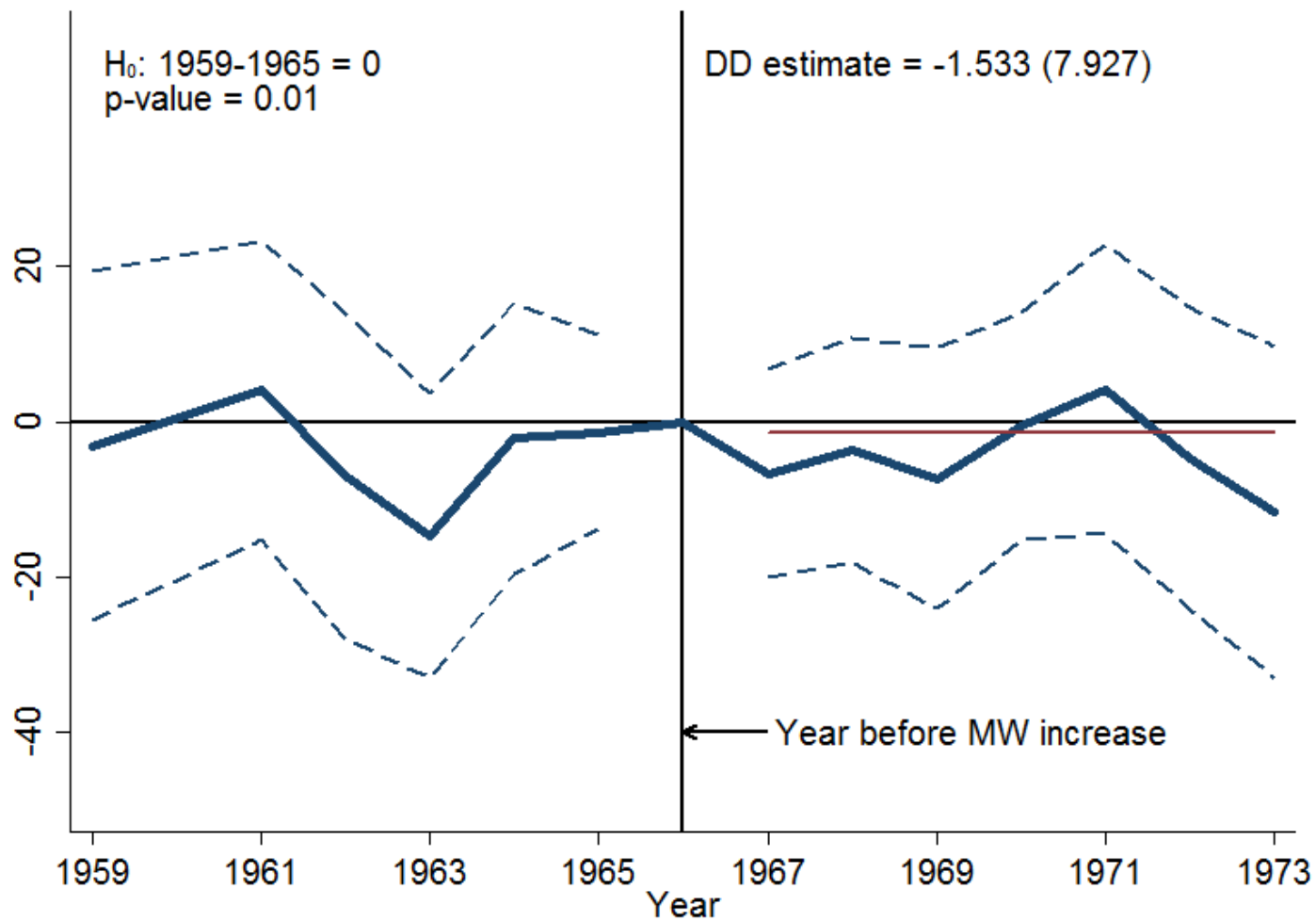
TS-2SLS Effects on Weeks Worked



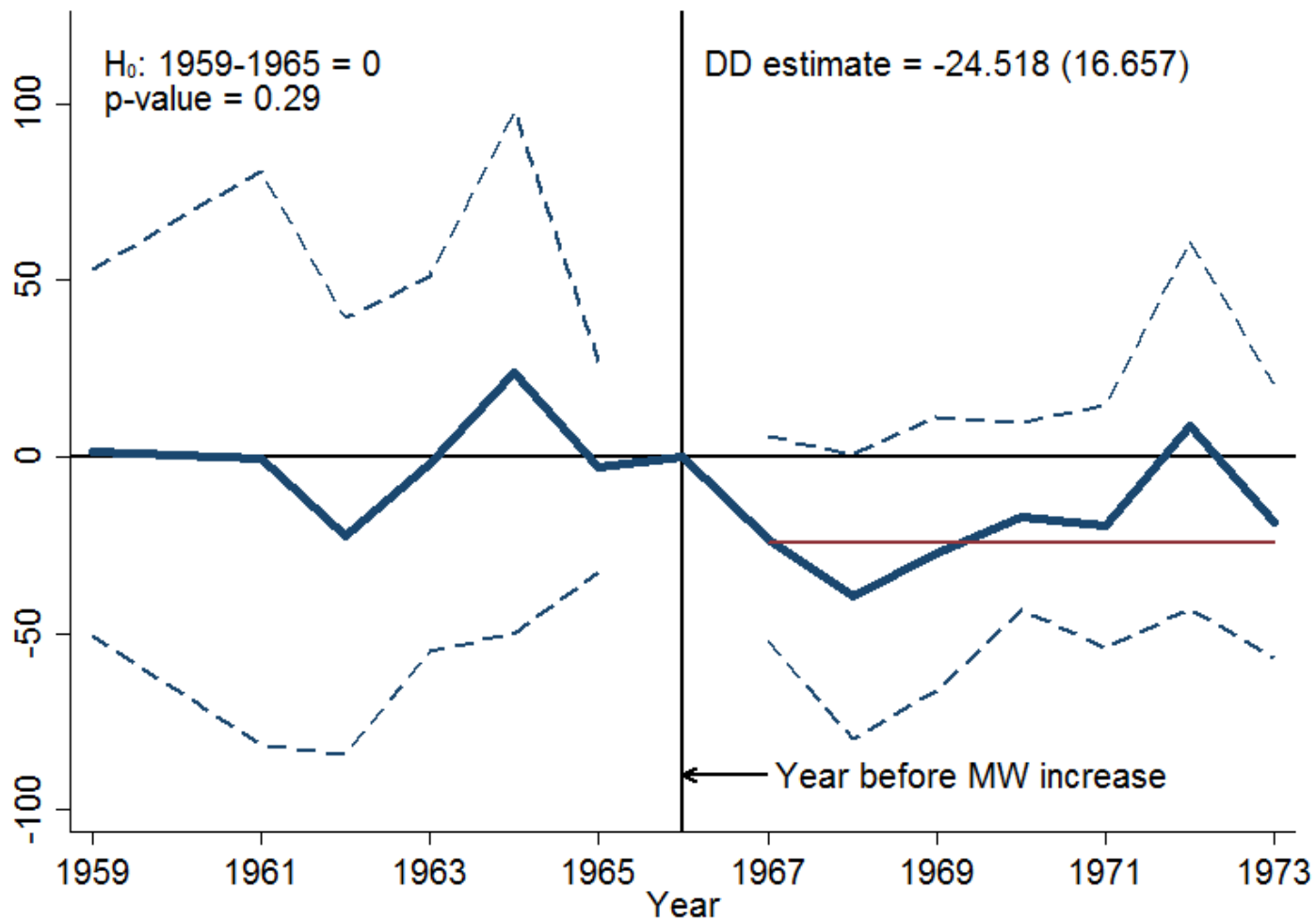
How Big Are Effects on Weeks Worked?

- D-D TS2SLS: -4.17 (8.35)
- At the mean, increasing the fraction affected by 50% (moving from AL-MS to TX) means a 0.24% decrease in weeks worked (-0.10 divided by mean of 42)
- At the mean, increasing fraction affected by 1 std (moving from AL-MS to the middle of the distribution) means a 0.3% decrease in weeks worked (-0.11 divided by mean of 42)
- Lower range of 95% confidence interval implies a -1.4% decline in weeks worked

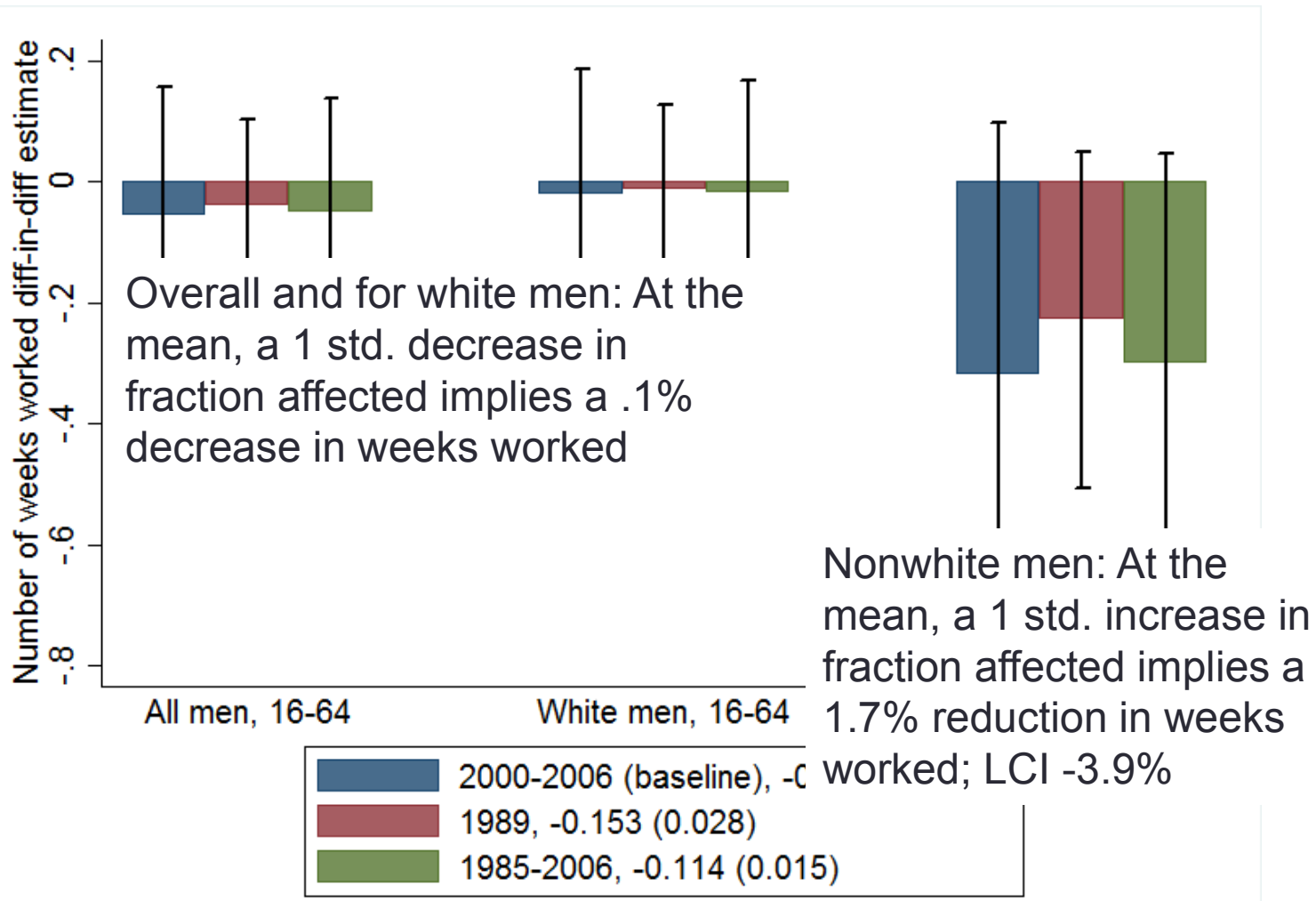
TS-2SLS Effects on Weeks for Whites



TS-2SLS Effects on Weeks for Nonwhites



Summary of Effects on Weeks Worked



Conclusion

- We analyze the economic effects of the 20th century's highest minimum wage
- Develop a method to address substantial measurement error in March CPS near the minimum wage
- Results: 1966 FLSA appears to have
 - Dramatically increased wages after 1966
 - Had no detectable aggregate effects on employment
 - Suggestive results of disemployment effects among least skilled workers: reduction in employment (5%) and weeks worked (8%) for nonwhites
 - Largest elasticities implied by results (LCI) are -0.08 overall and -0.68 for nonwhite men

Next steps

- Next we will examine changes in RDC: this allows us to use state-level variation in outcomes (not state group)
- We will also examine in more detail changes in the composition of workers after 1966
 - Teens, heterogeneity by gender, education, race, age of the work force
- Directly quantify how much coverage expansion (vs. MW change for covered workers) led to increase in wages and calibrate elasticities more carefully
- Examine impacts on inequality, poverty, and industry-level employment