Family Policies & the Dynamics of Gender Inequality

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Gender Inequality and Family Policies

- Evidence that children/parenthood explains most of the remaining gender inequality in modern societies
  - Large and persistent *child penalties* on women's careers
  - Debate about mechanisms
- Large expansions of family policies over the last 50 years
  - Maternity and parental leave policies
  - Child care provision and subsidization
- Impact of these policies on gender gaps is still debated
  - Widespread belief that family policies could be helpful
  - But also a concern that some policies may have backfired

Family Policies and Child Penalties

- Most of the literature estimates the contemporaneous impact of policy on female labor supply or earnings
- Given child penalties are now understood to explain most of the gender inequality, we study
  - Child penalities as our outcome
  - The dynamic impacts on career paths of women relative to men
- Enables us to map estimates back into cross-sectional gender inequality

The Parental Leave / Child Care Provision Bundle

- Most of the literature focuses on specific familiy policies in isolation
- But parental leave and child care provision are in practice a bundle of policies
  - There may be complementarities/cross effects btw the two
- We analyze these two policies together
  - Study both policies and their potential interaction within a single empirical setting

Uniquely Rich Quasi-Experimental Variation

- Rich quasi-experimental variation in Austria:
  - Multiple parental leave reforms at different baseline levels (RD)
  - Local child care expansions (DiD a la Duflo 2001)
- Combined with administrative data including very rich information on child care provision
- Effects on child penalties:
  - **Parental leave:** Negative short-run effect; no long-run effect (Marginal treatment effect is declining in baseline level)
  - **Child care:** Very small effect, if any
  - **Interaction:** None
  - **Bottom line:** Family policy has had little effect on gender inequality

Context and Data

The Austrian Context

- A gender conservative environment:
  - Total gender gap in earnings: ≈40% Gender Gaps
  - Relatively low female LFP
  - Prevalence of conservative gender norms Elicited Values

- Generous maternity leave policy:
  - Up to 30 months, with replacement rate ≈40% net median female earnings
  - Multiple reforms of parental leave over last 50 years
    - 1961, 1990, 1996, 2000, 2008

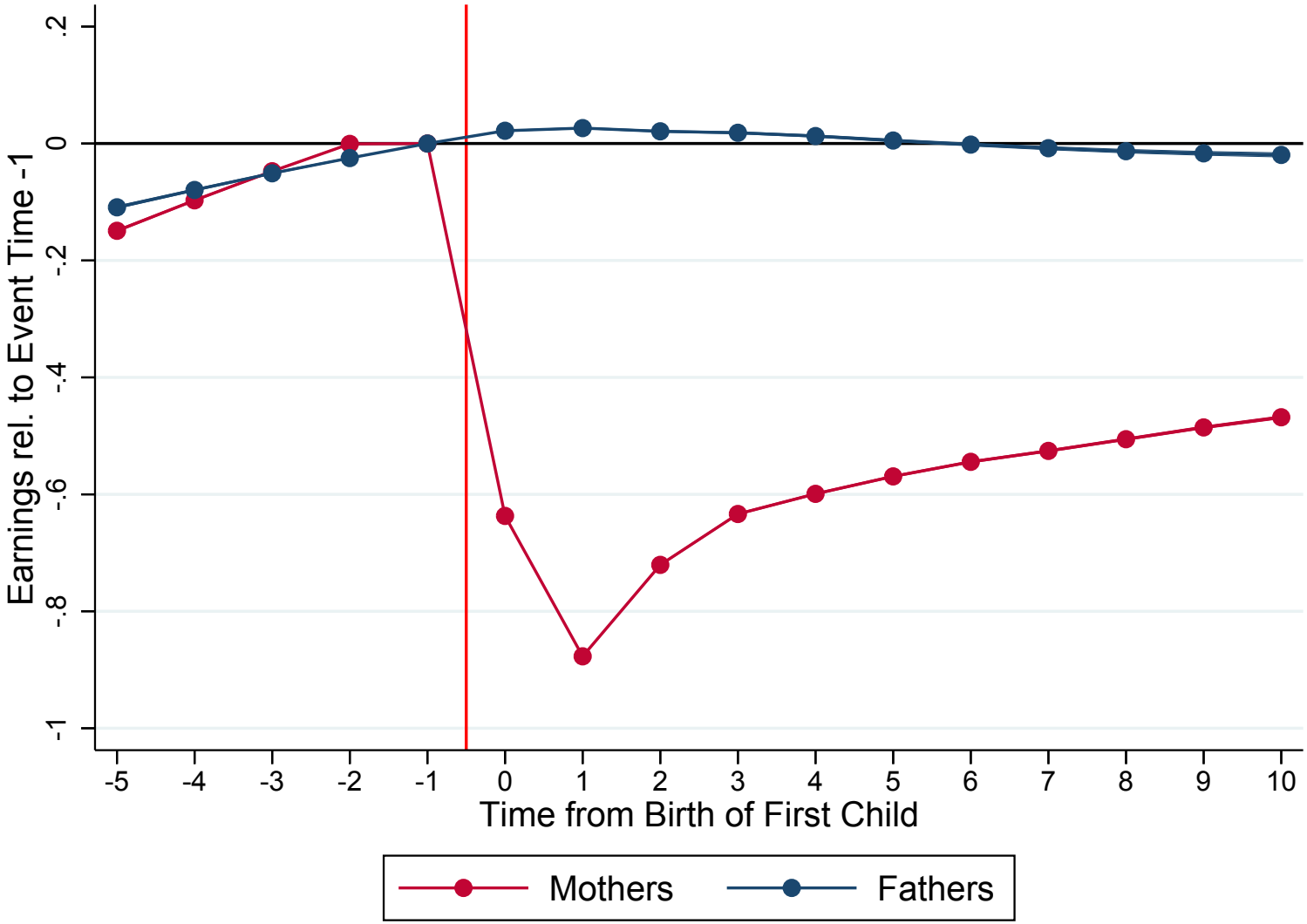
- Institutional child care provision before age 5:
  - **Nurseries (age 1-2)**: limited provision ≈15% of children
  - **Kindergarten (age 3-5)**: more widespread ≈75% of children

Data

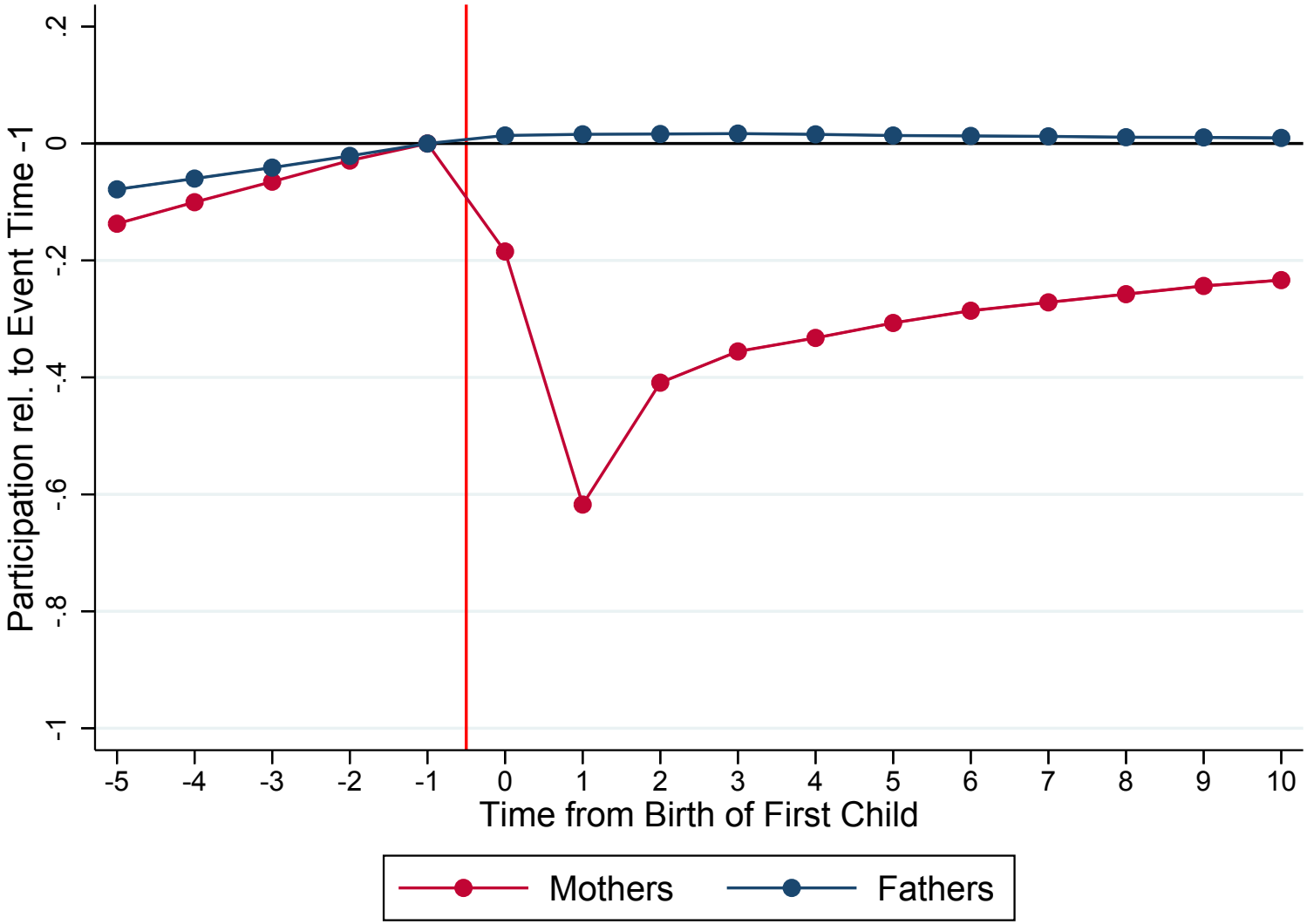
- **ASSD**: Universe of matched employer employee data 1980-2017
  - Info on annual earnings + labor contract start/end dates
  - Detailed geographical info on place residence
  - + **REV**: earnings history from pension data since 1949
- Linking children to parents:
  - ASSD+REV: information on child births for women
  - Tax data: link fathers to mothers and child
- **Detailed municipality level data on child care provision**
  - For all child care institutions (nurseries and kindergarten), info on number of teachers and legal max # of children per teacher

Child Penalties

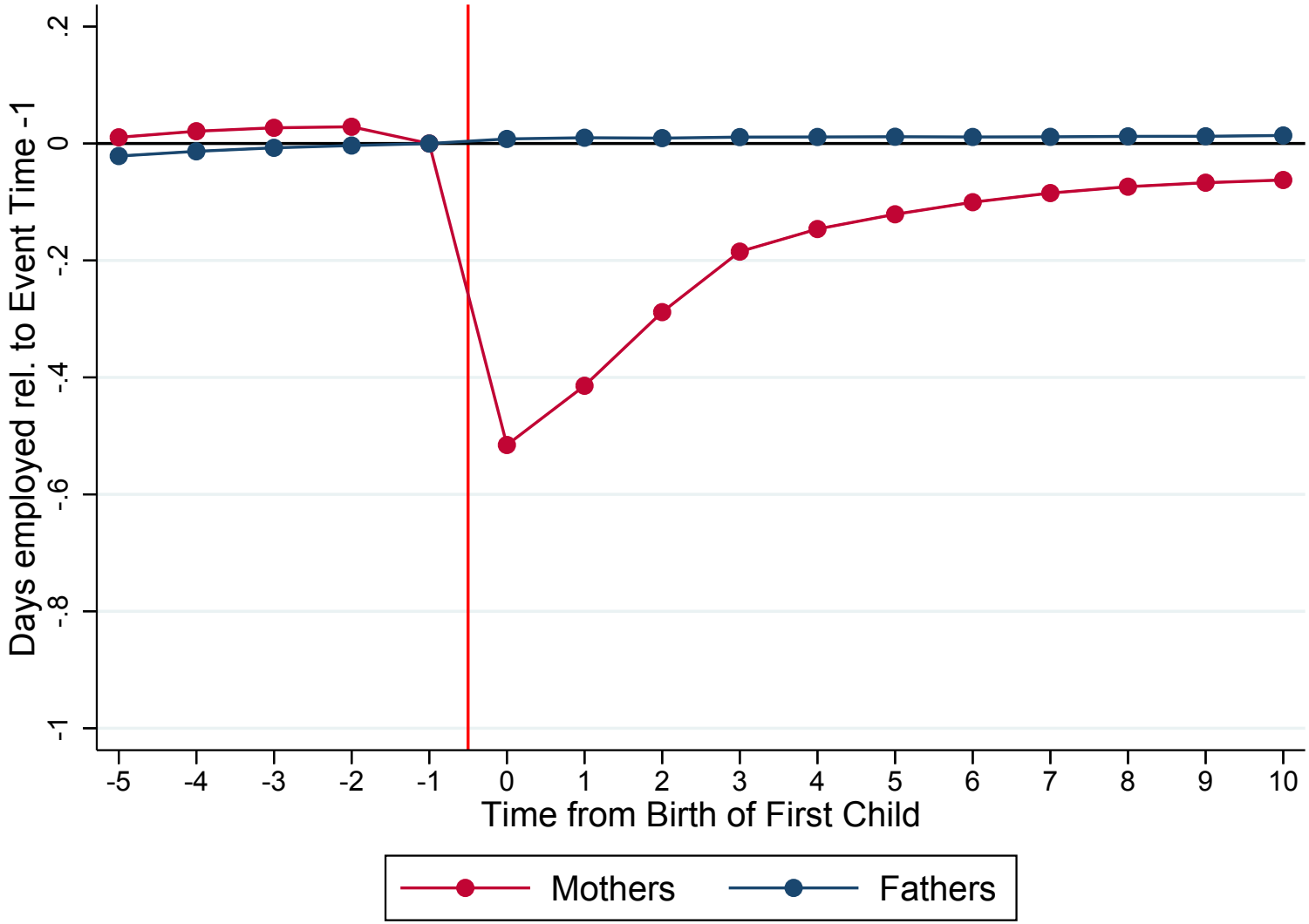
Child Penalty in Earnings



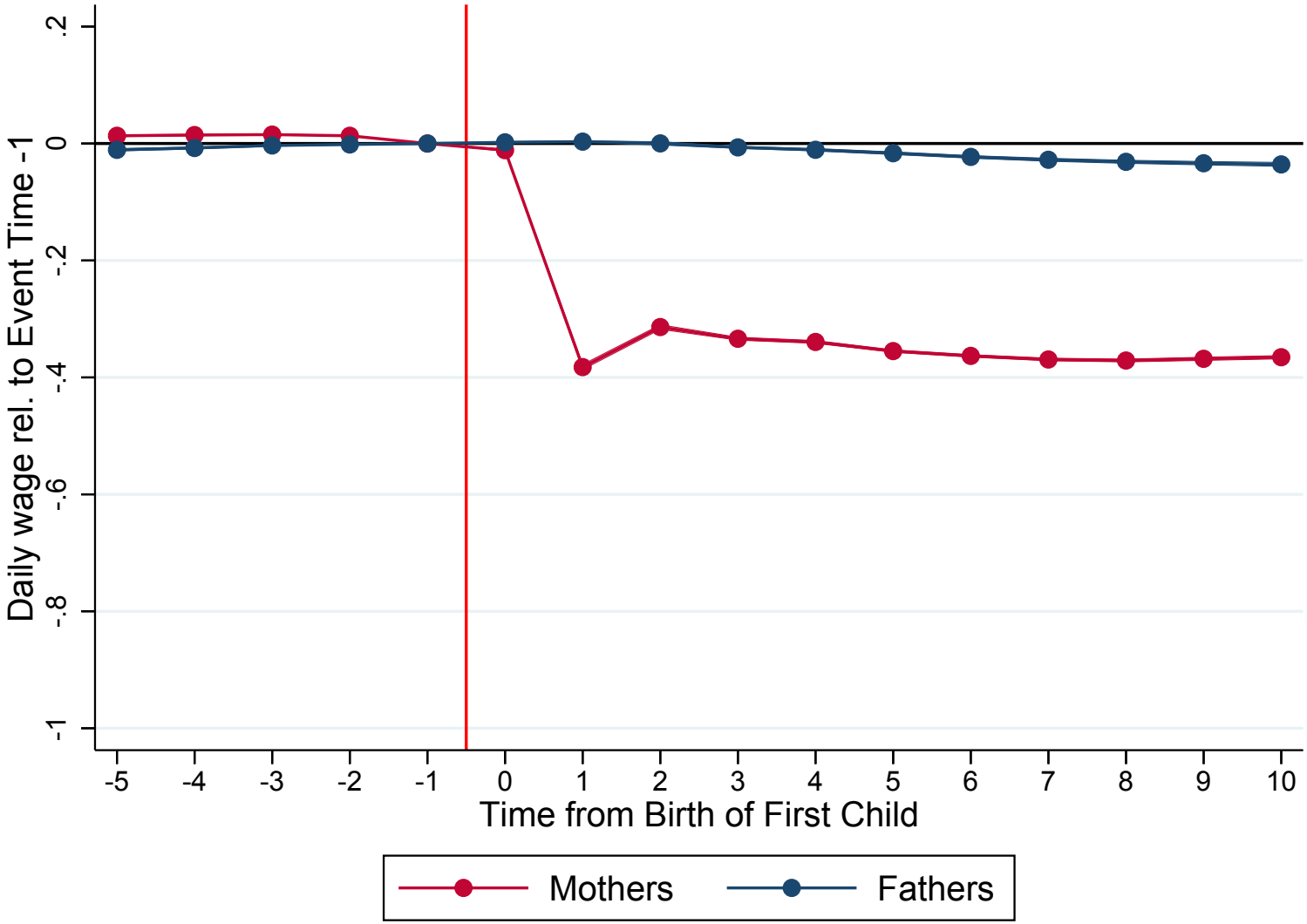
Child Penalty in Extensive Margin Labor Supply



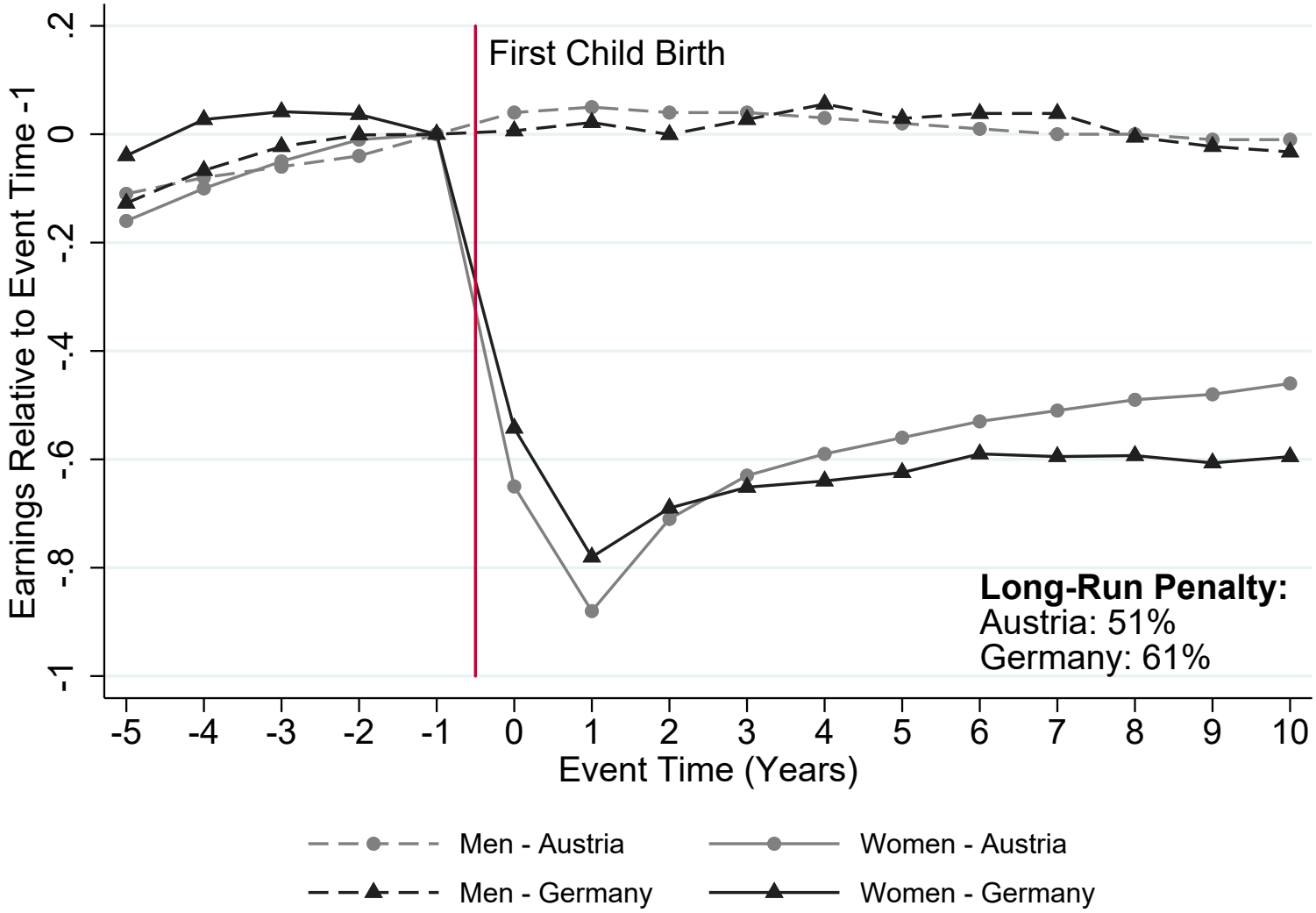
Child Penalty in Intensive Margin Labor Supply



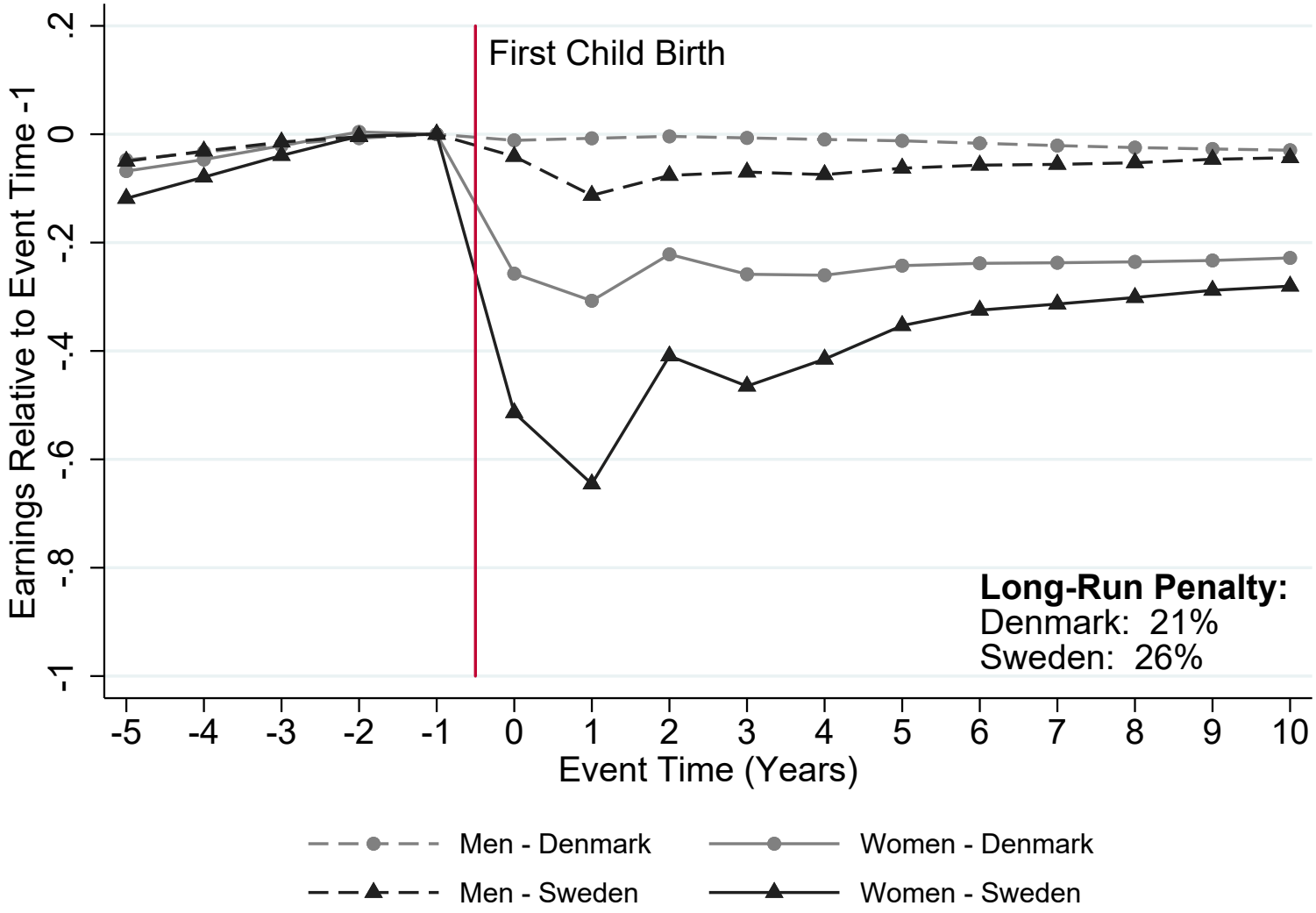
Child Penalty in Daily Wage Rate



Child Penalty: German-Speaking Countries

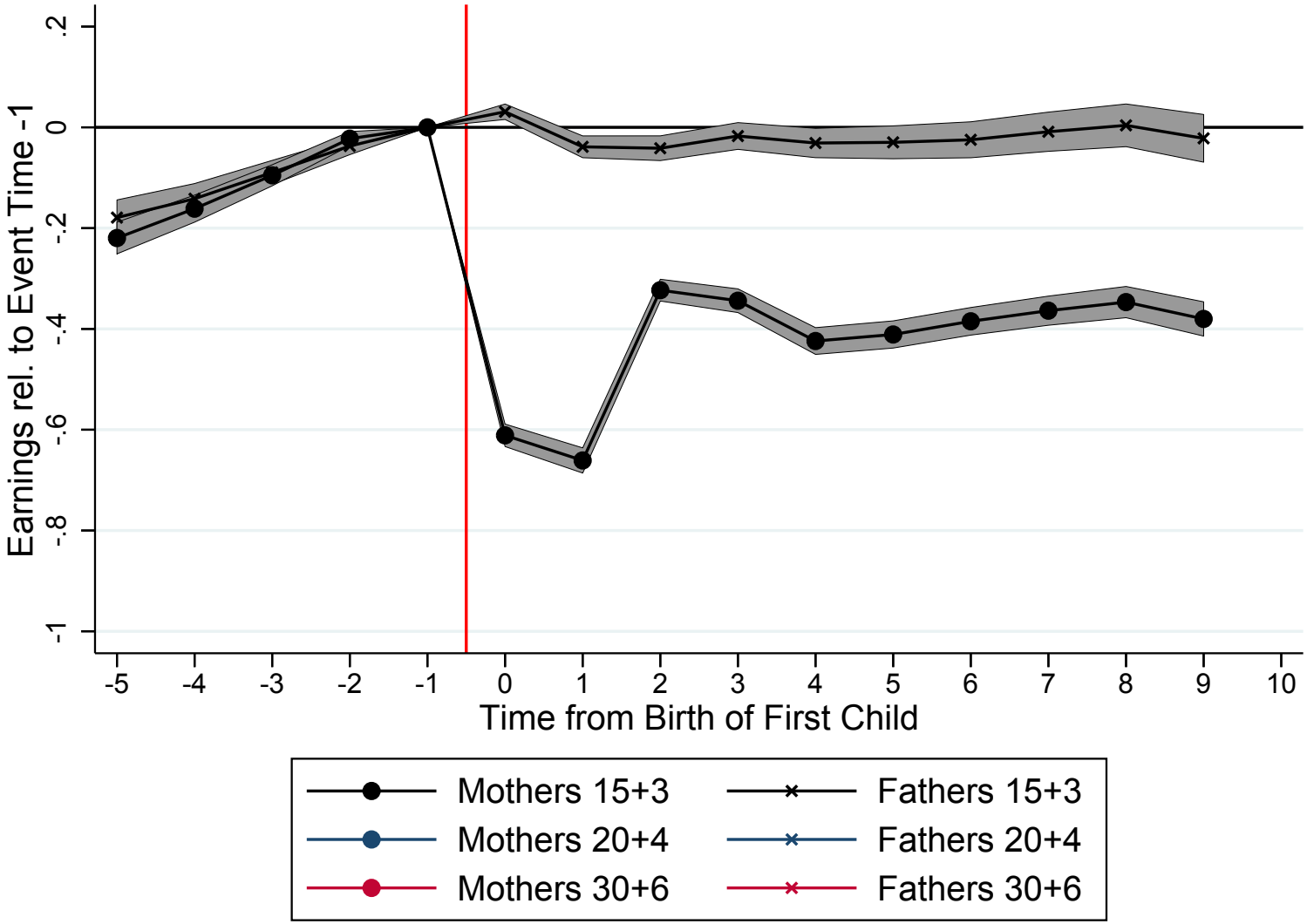


Child Penalty: Scandinavian Countries

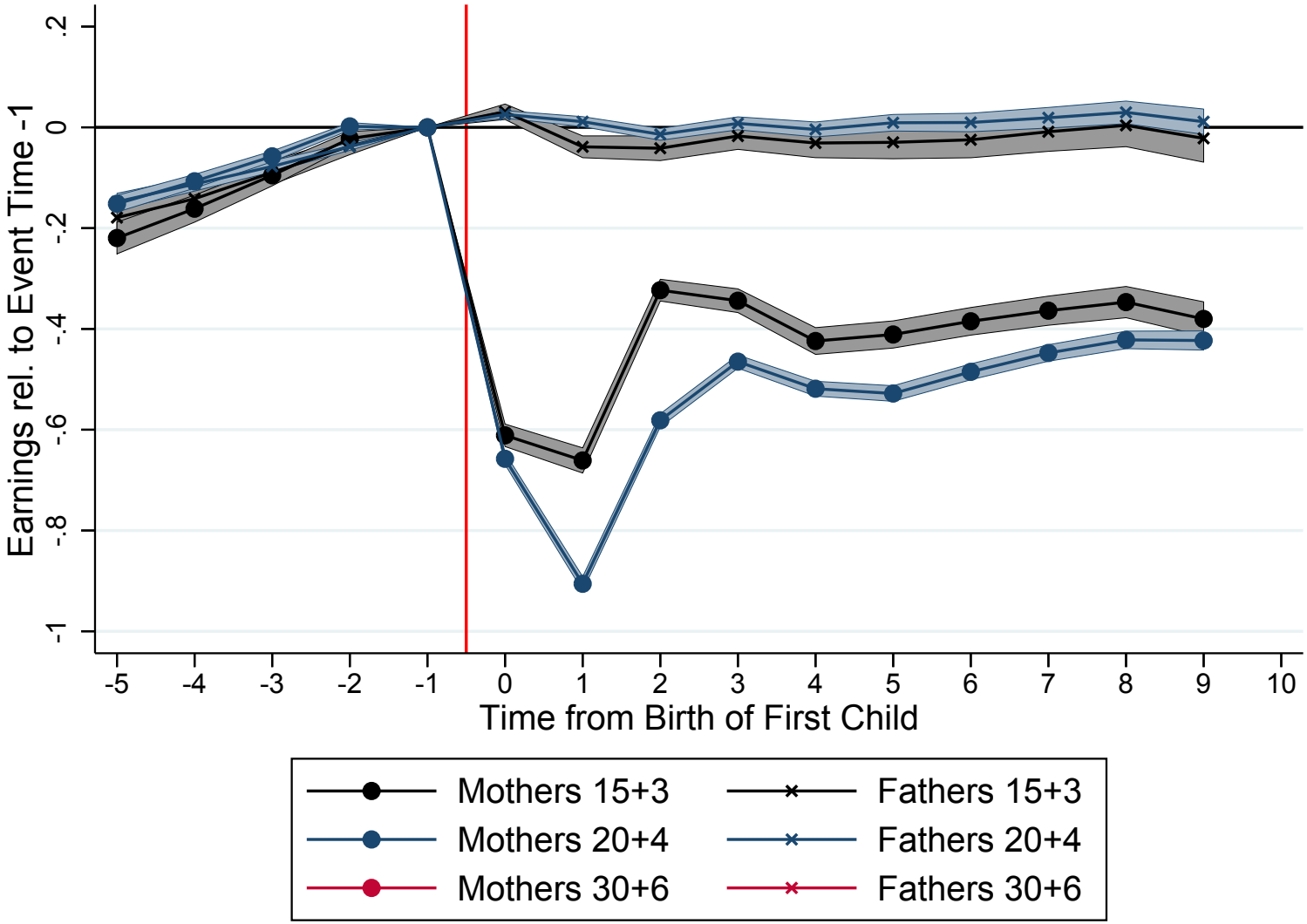


Impact of Parental Leave Policy

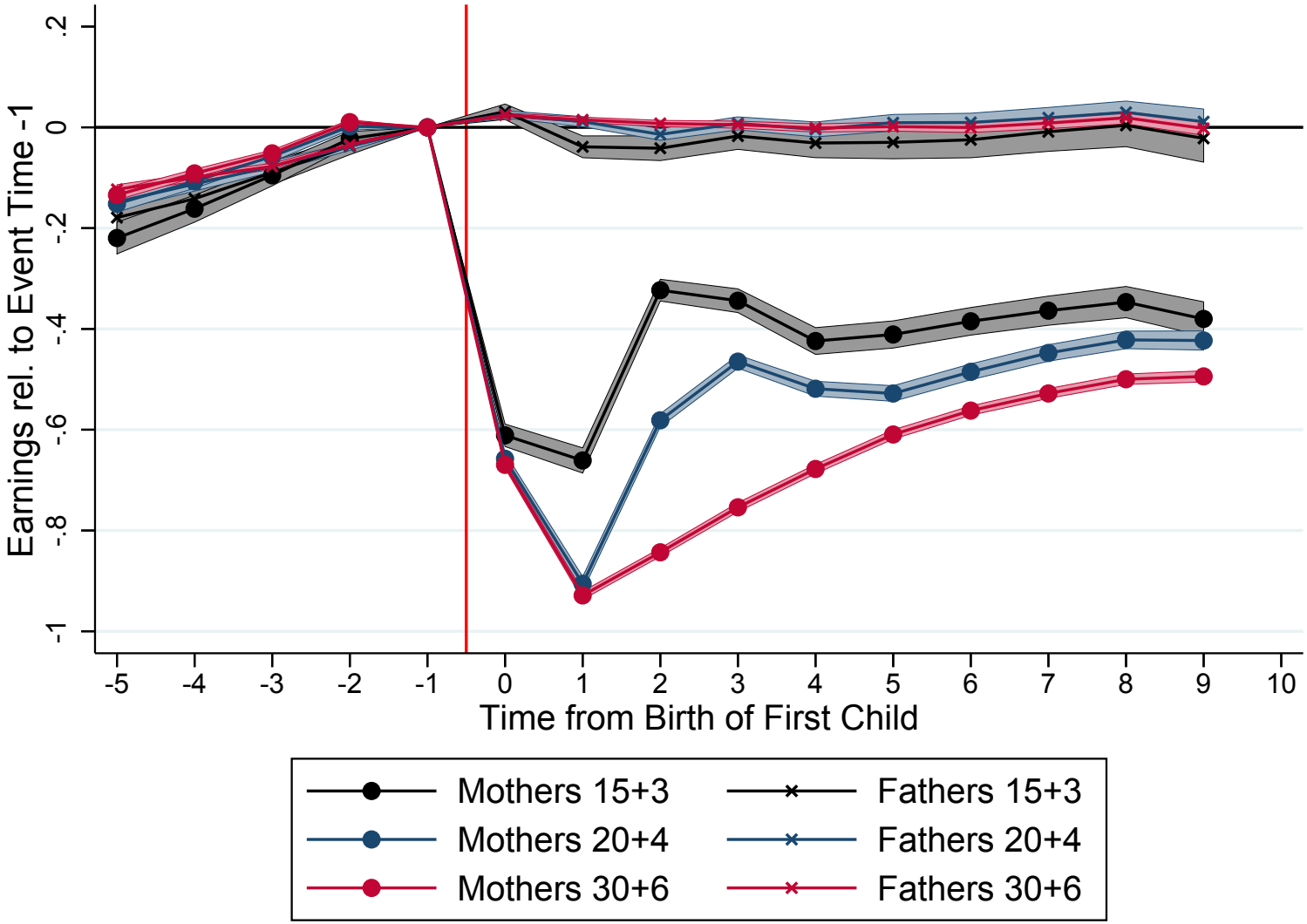
2008 Regime: Child Penalty by Parental Leave Option



2008 Regime: Child Penalty by Parental Leave Option



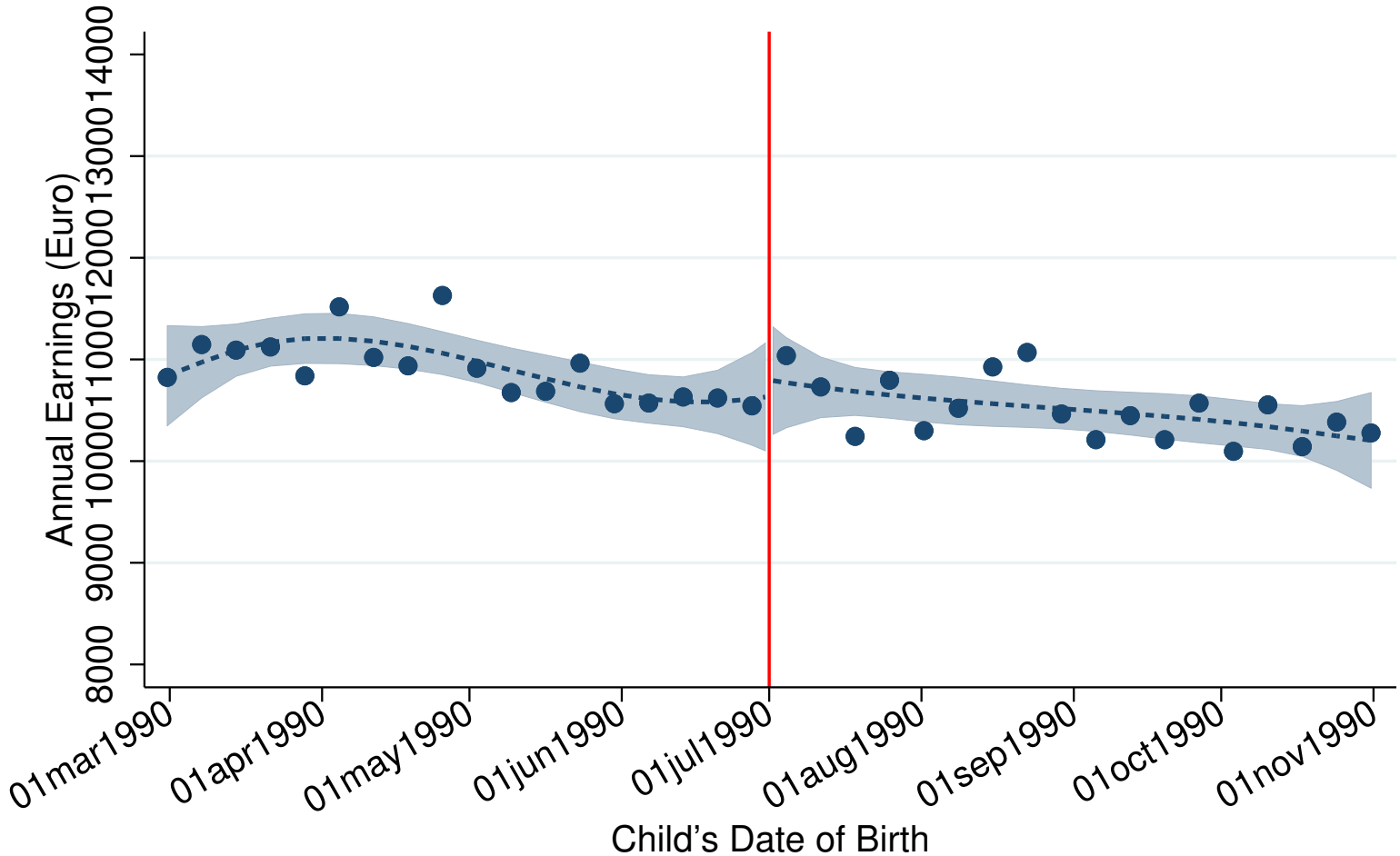
2008 Regime: Child Penalty by Parental Leave Option



Parental Leave Reforms: Empirical Strategy

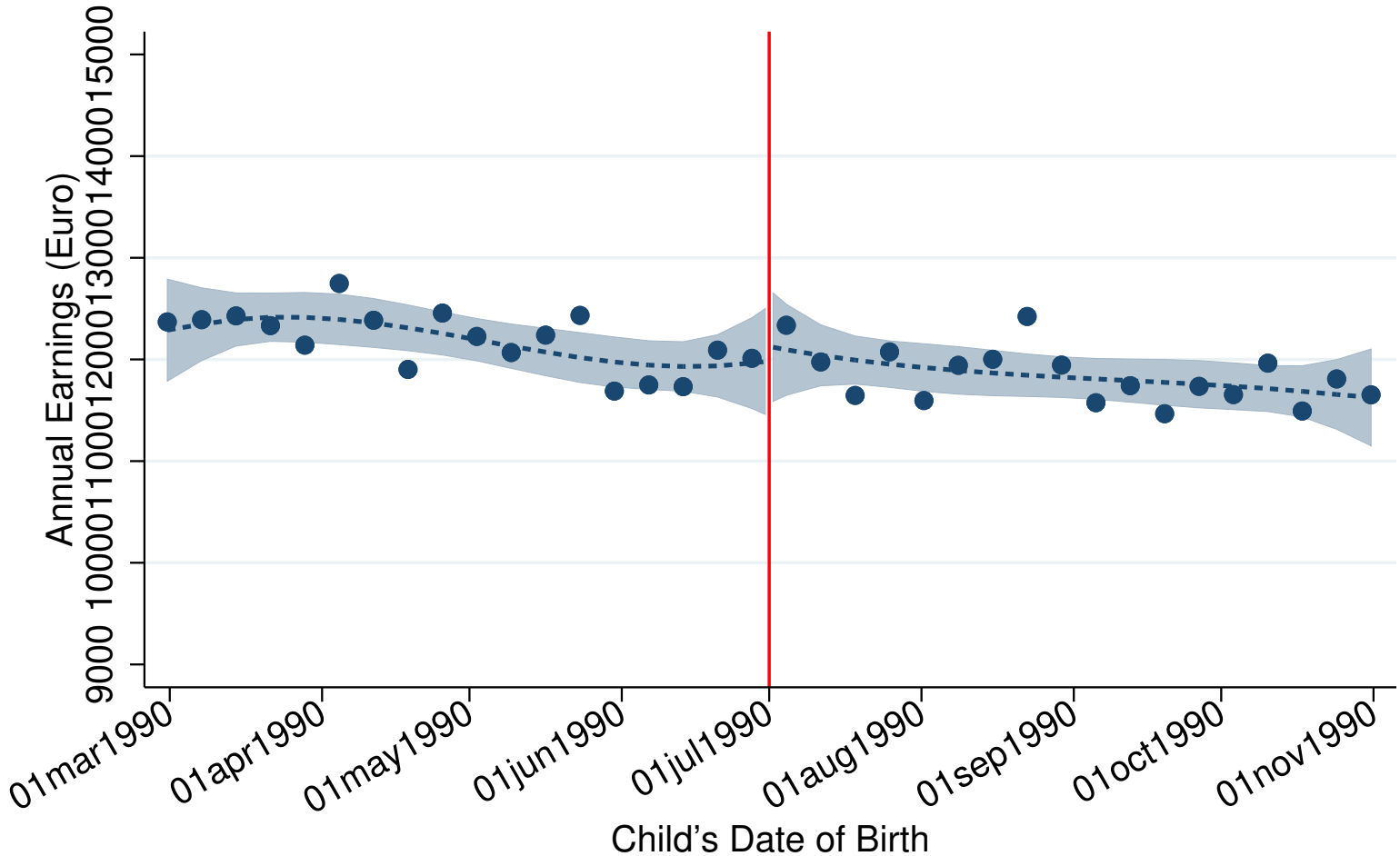
- 2008 regime evidence confounded by selection into parental leave option
- Use 4 reforms that exogenously changed PL duration:
  - **1961**: introduction of 12 months PL
  - **1990**: increase duration from 12 to 24 months
  - **1996**: decrease duration from 24 to 18 months
  - **2000:** increase duration from 18 to 30 months
- Job protection increased from 12 to 24 months in 1990
- 1990 to 2000 reforms:
  - Replacement rate was kept constant
  - Regime eligibility depends on DOB of child (no grandfathering)
  - **RD based on DOB of 1st child** relative to cutoff date

1990 Reform: 3 Years Before Birth



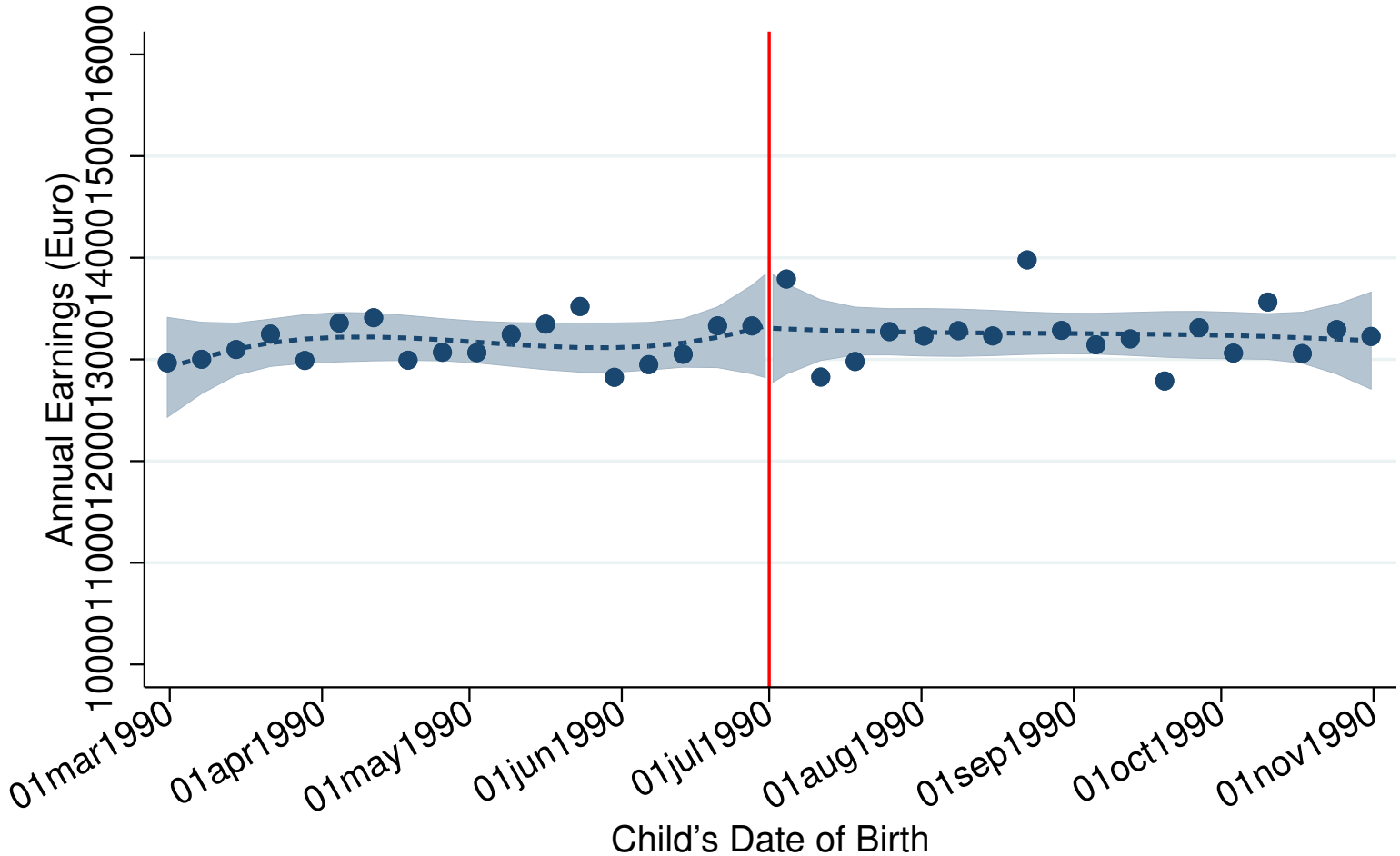
RD Estimate: 151.3 (393.7)
Div. by Counterfactual: 0.0131 (0.0340)

1990 Reform: 2 Years Before Birth



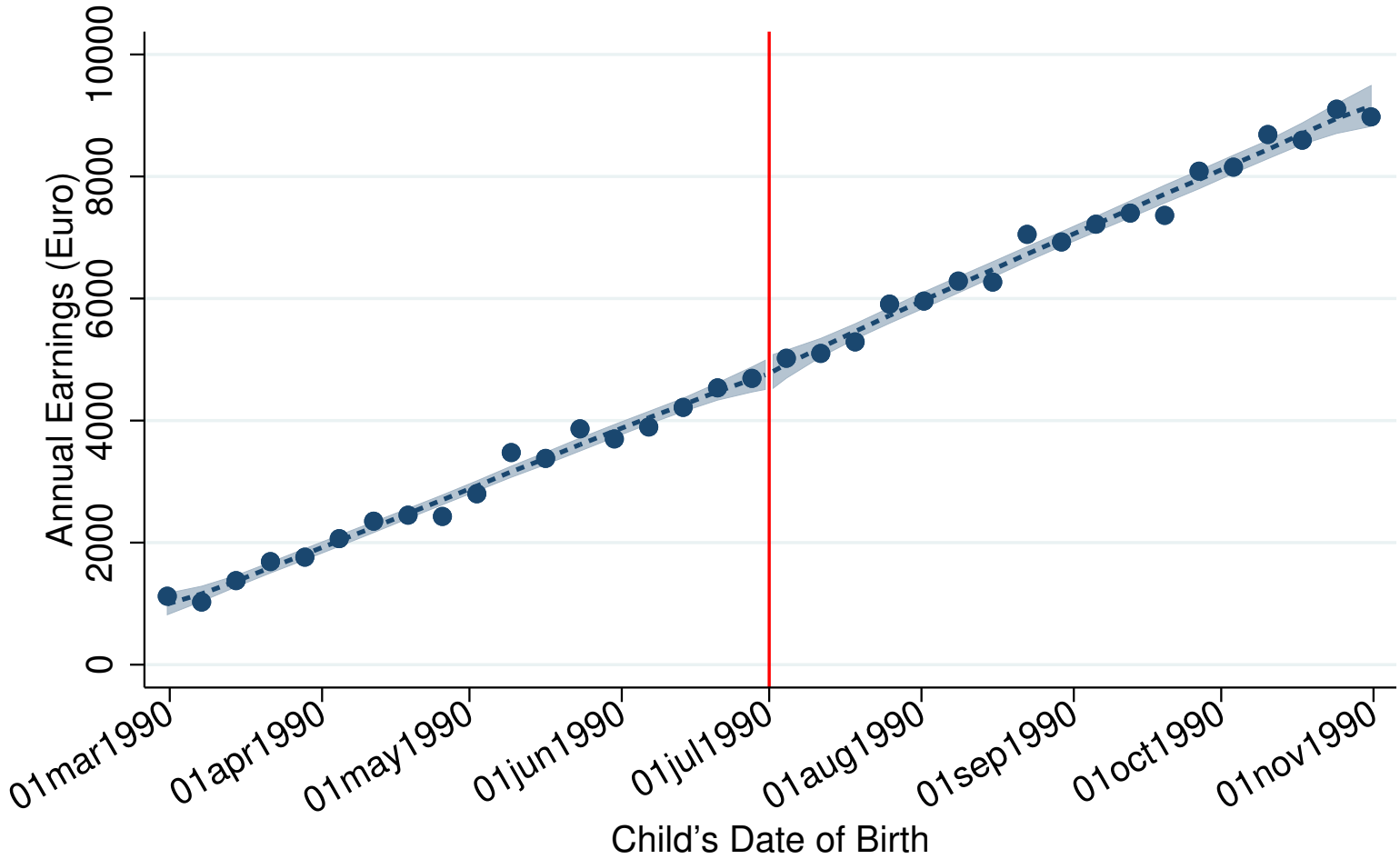
RD Estimate: 133.3 (392.5)
Div. by Counterfactual: 0.0107 (0.0314)

1990 Reform: 1 Year Before Birth



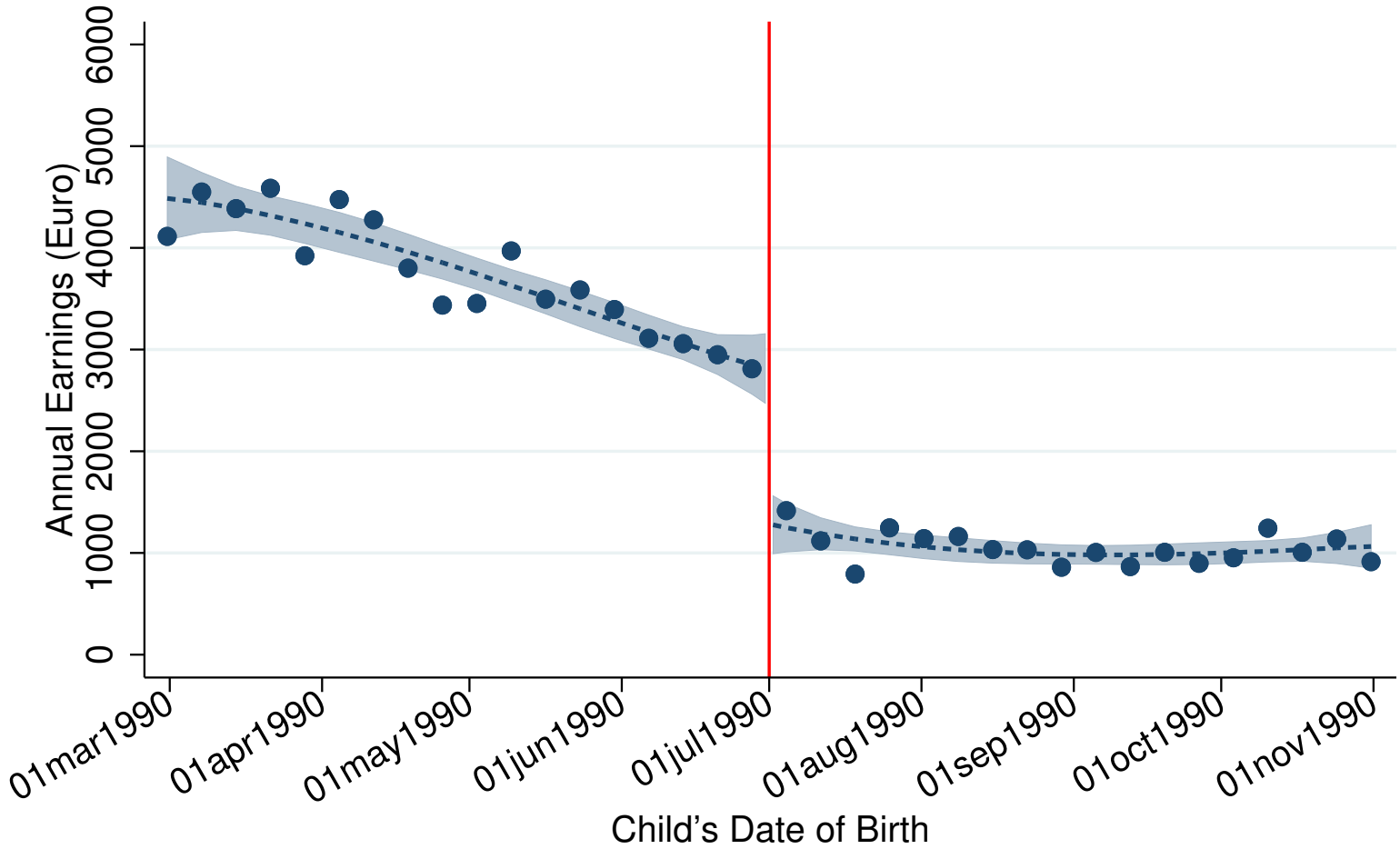
RD Estimate: −38.3 (386.0)
Div. by Counterfactual: −0.0029 (0.0290)

1990 Reform: Year of Birth



RD Estimate: 27.6 (191.3)
Div. by Counterfactual: 0.0020 (0.0137)

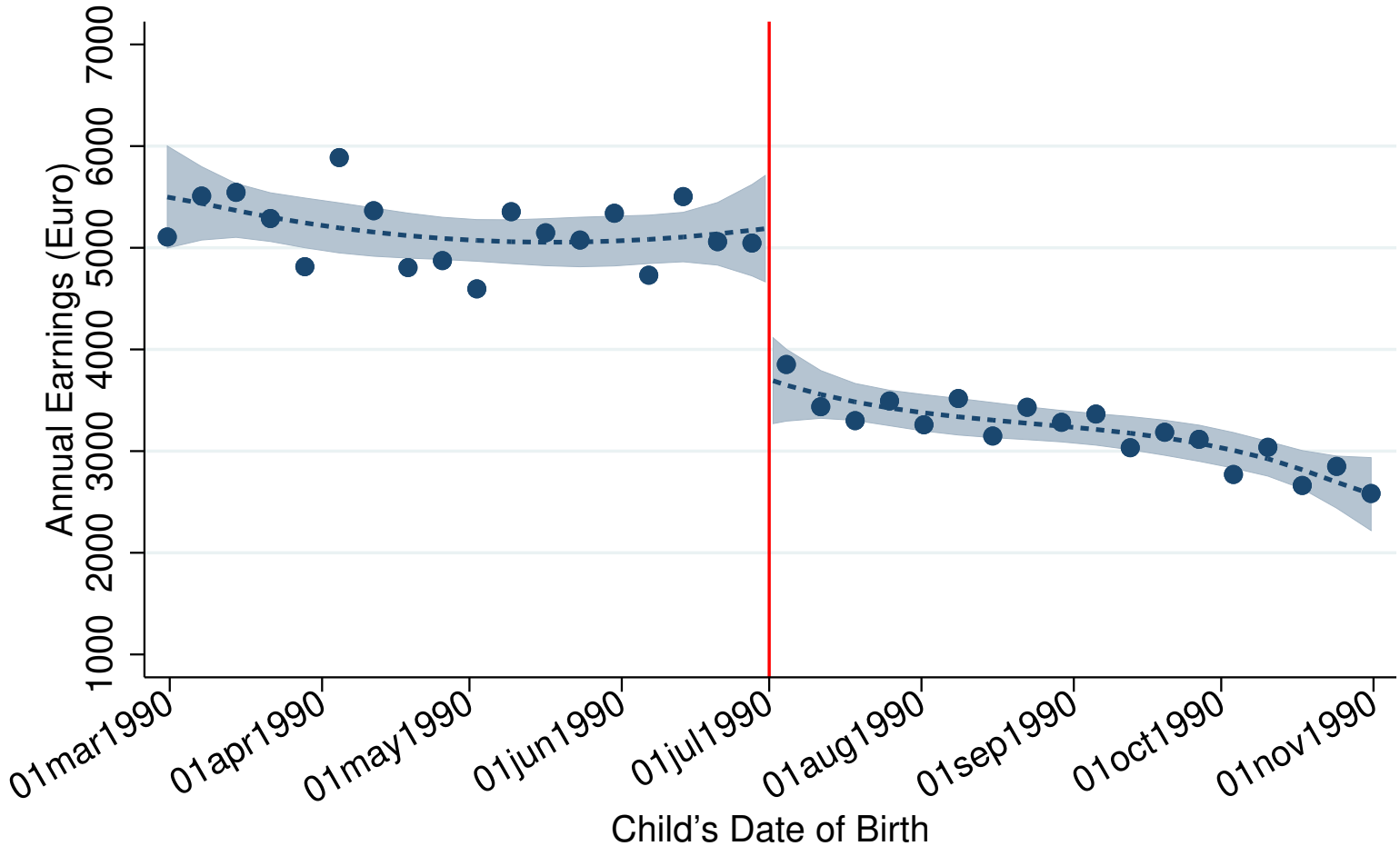
1990 Reform: 1 Year After Birth



RD Estimate: −1522.5 (236.1)
Div. by Counterfactual: −0.1059 (0.0164)

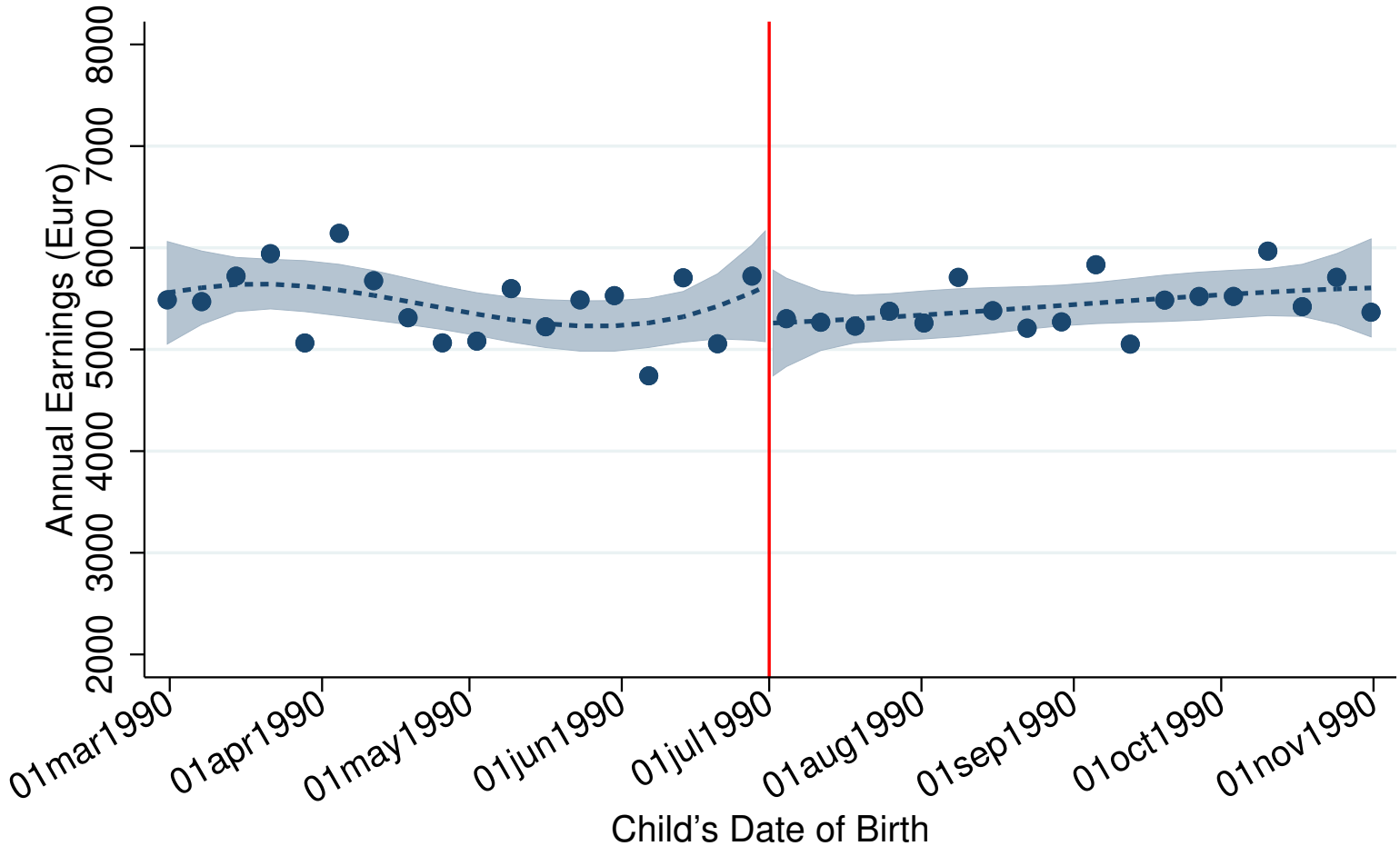
1989 Placebo & DiD-RD

1990 Reform: 2 Years After Birth



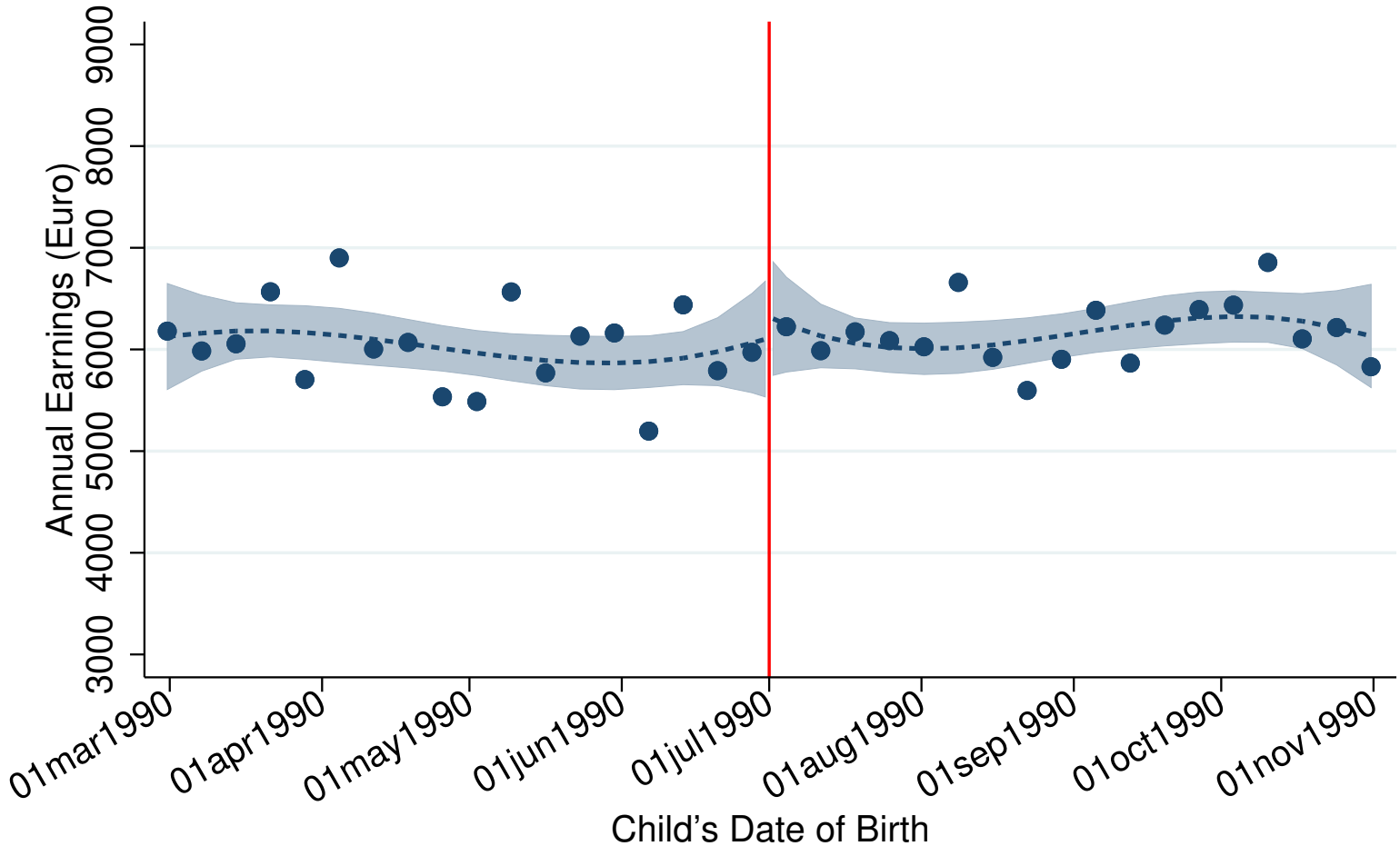
RD Estimate: −1501.6 (356.4)
Div. by Counterfactual: −0.1021 (0.0242)

1990 Reform: 3 Years After Birth



RD Estimate: –387.2 (396.9)
Div. by Counterfactual: –0.0259 (0.0265)

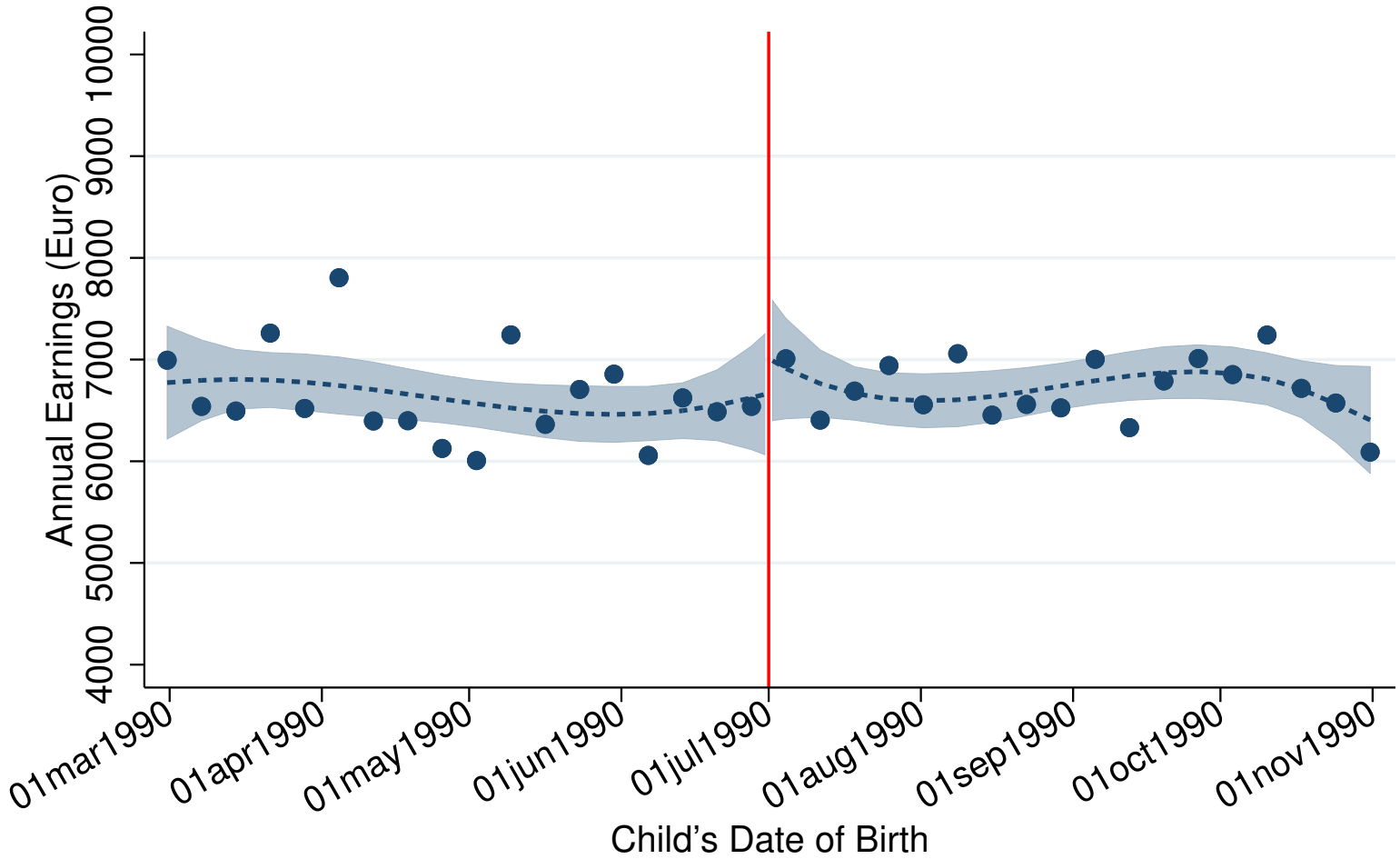
1990 Reform: 4 Years After Birth



RD Estimate: 184.5 (419.9)
Div. by Counterfactual: 0.0122 (0.0277)

1989 Placebo & DiD-RD

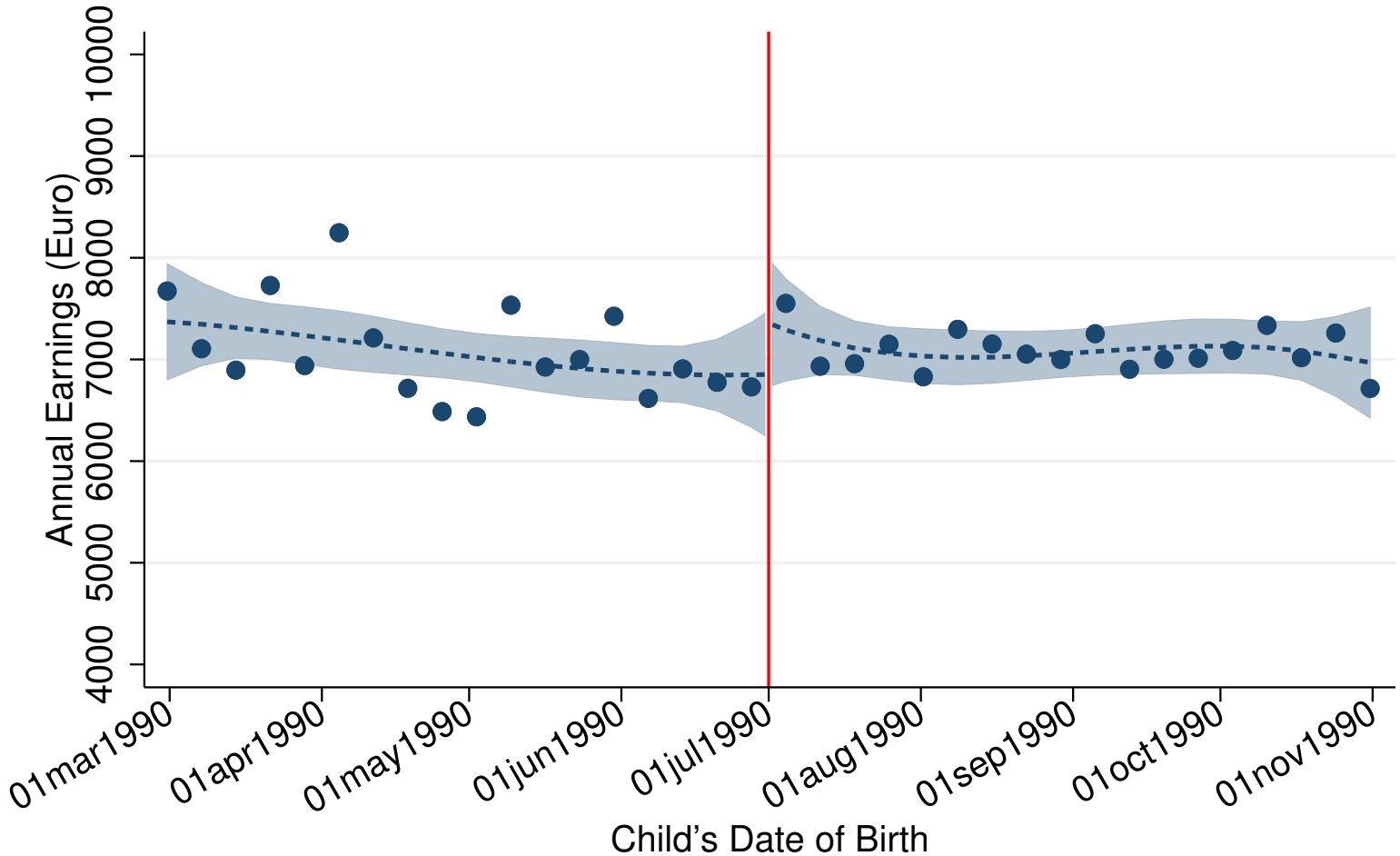
1990 Reform: 5 Years After Birth



RD Estimate: 316.7 (440.6)
Div. by Counterfactual: 0.0206 (0.0286)

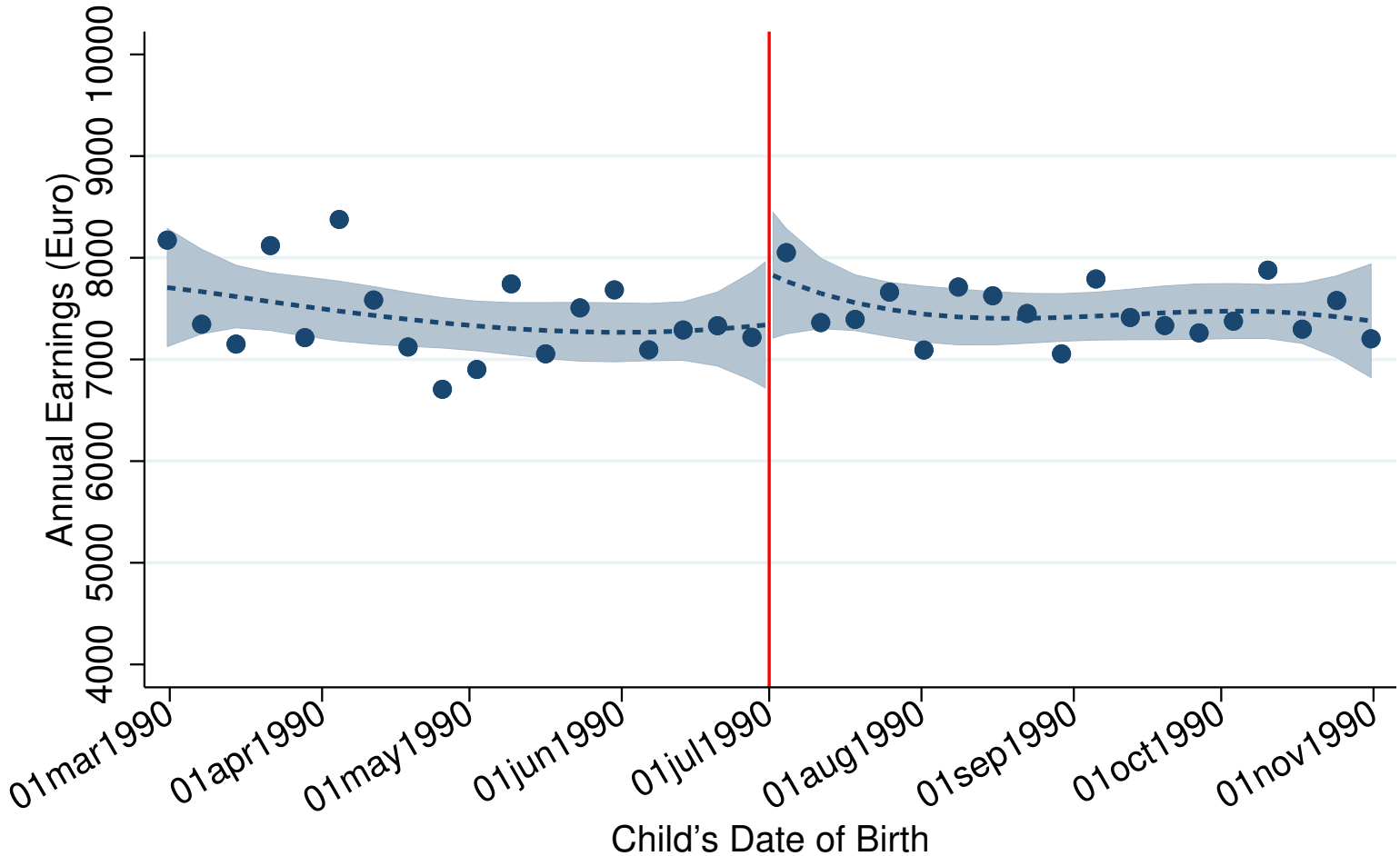
1989 Placebo & DiD-RD

1990 Reform: 6 Years After Birth



RD Estimate: 488.7 (447.3)
Div. by Counterfactual: 0.0311 (0.0284)

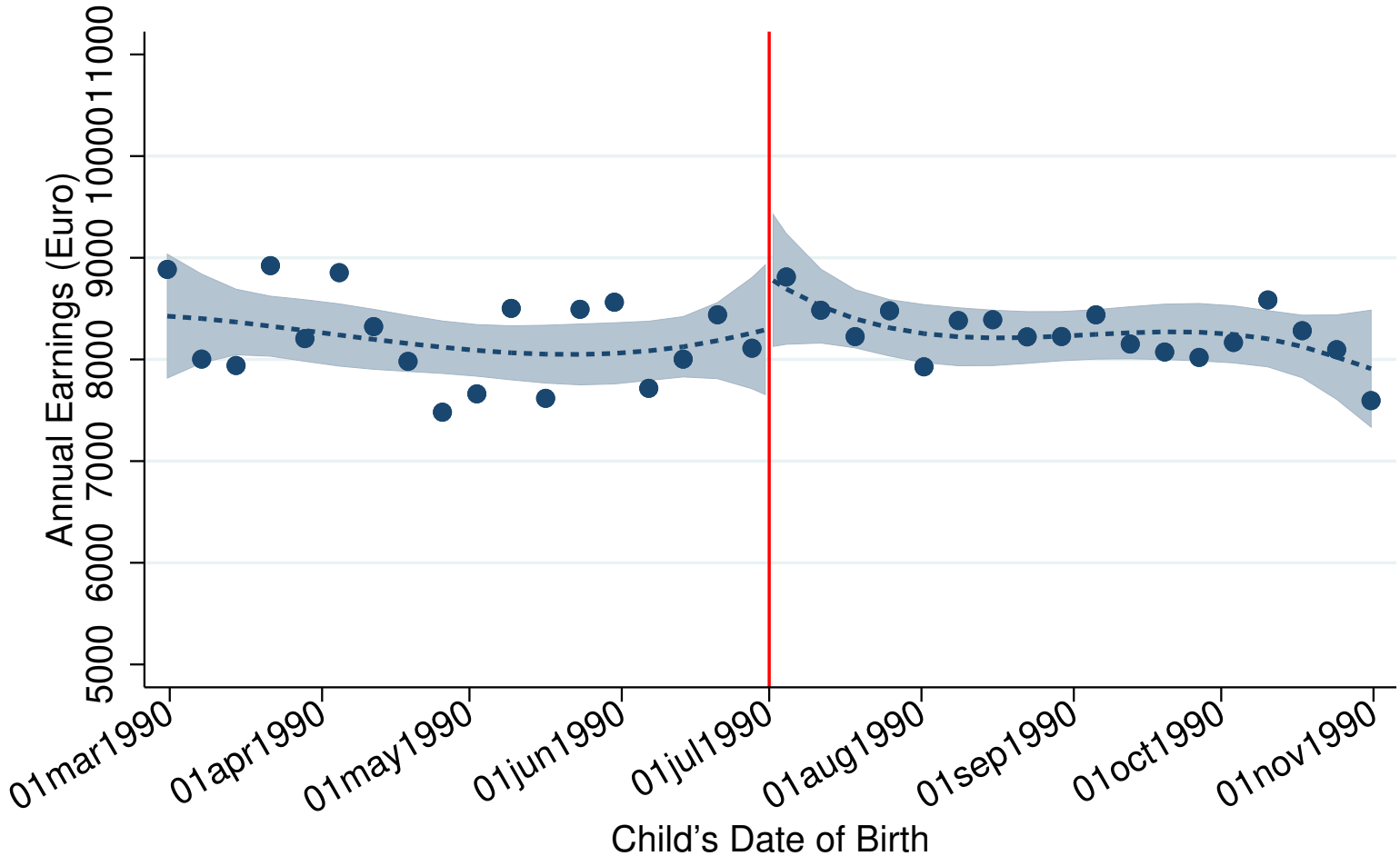
1990 Reform: 7 Years After Birth



RD Estimate: 483.5 (460.7)
Div. by Counterfactual: 0.0302 (0.0288)

1989 Placebo & DiD-RD

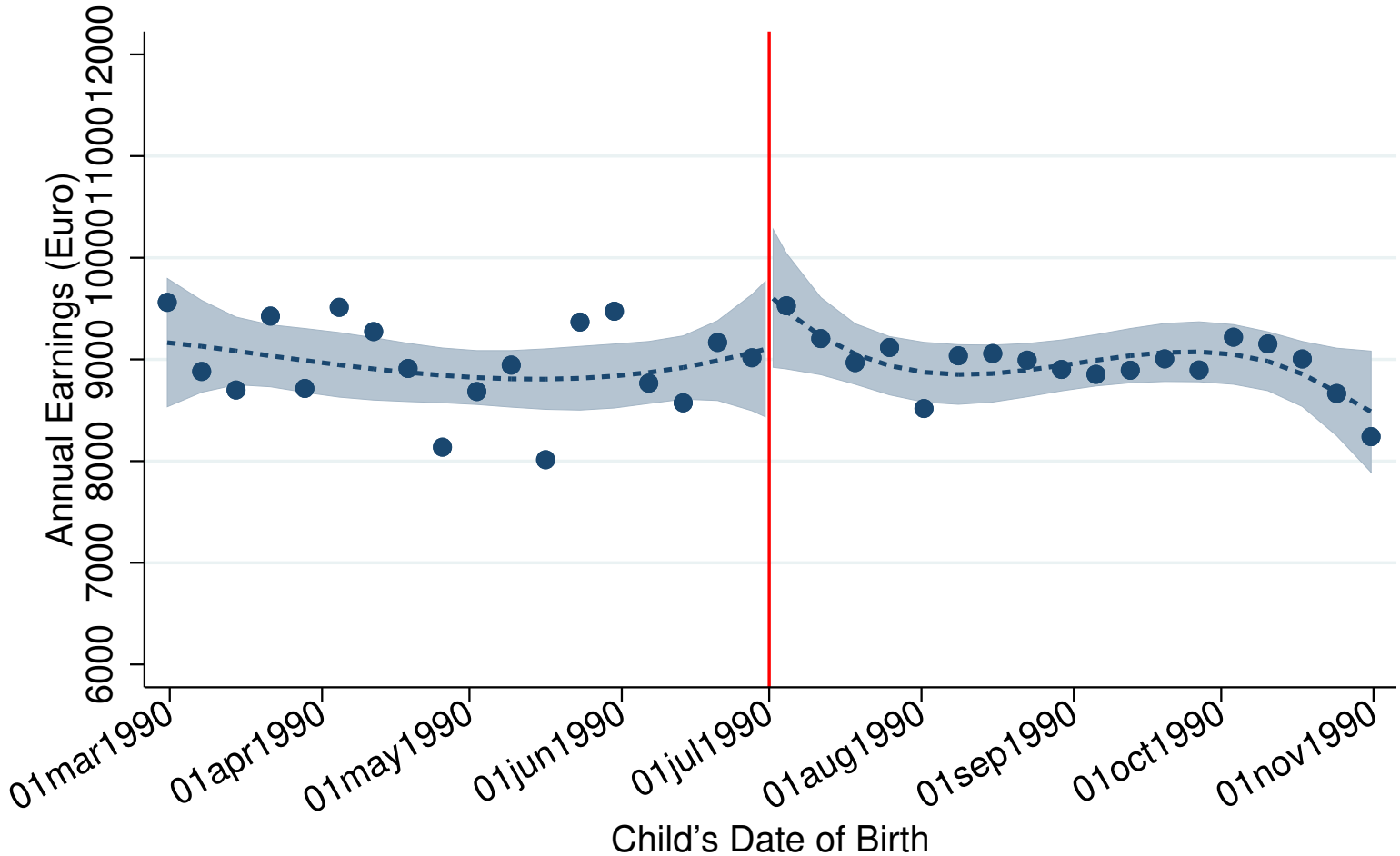
1990 Reform: 8 Years After Birth



RD Estimate: 471.5 (478.9)
Div. by Counterfactual: 0.0288 (0.0292)

1989 Placebo & DiD-RD

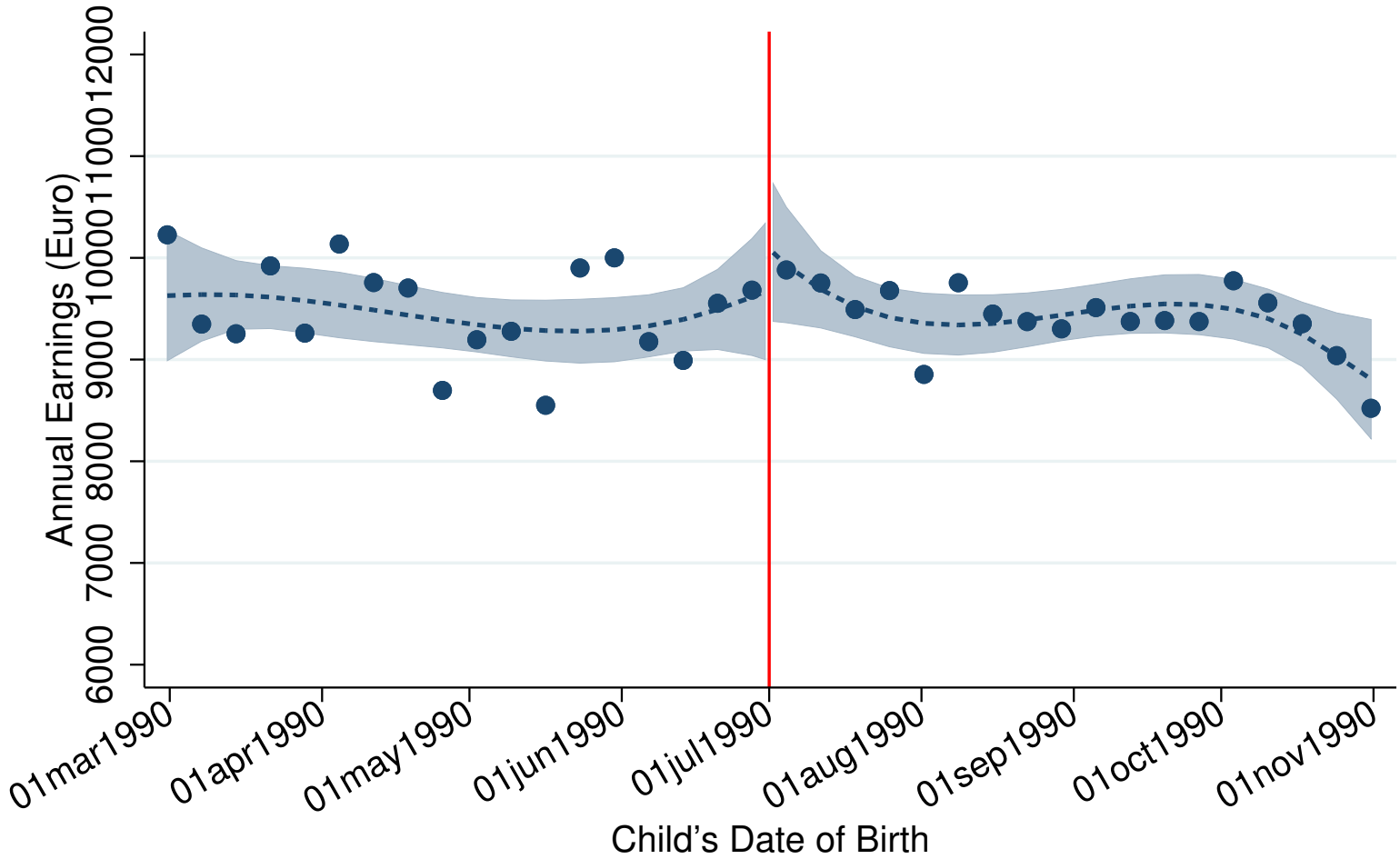
1990 Reform: 9 Years After Birth



RD Estimate: 485.4 (500.2)
Div. by Counterfactual: 0.0288 (0.0297)

1989 Placebo & DiD-RD

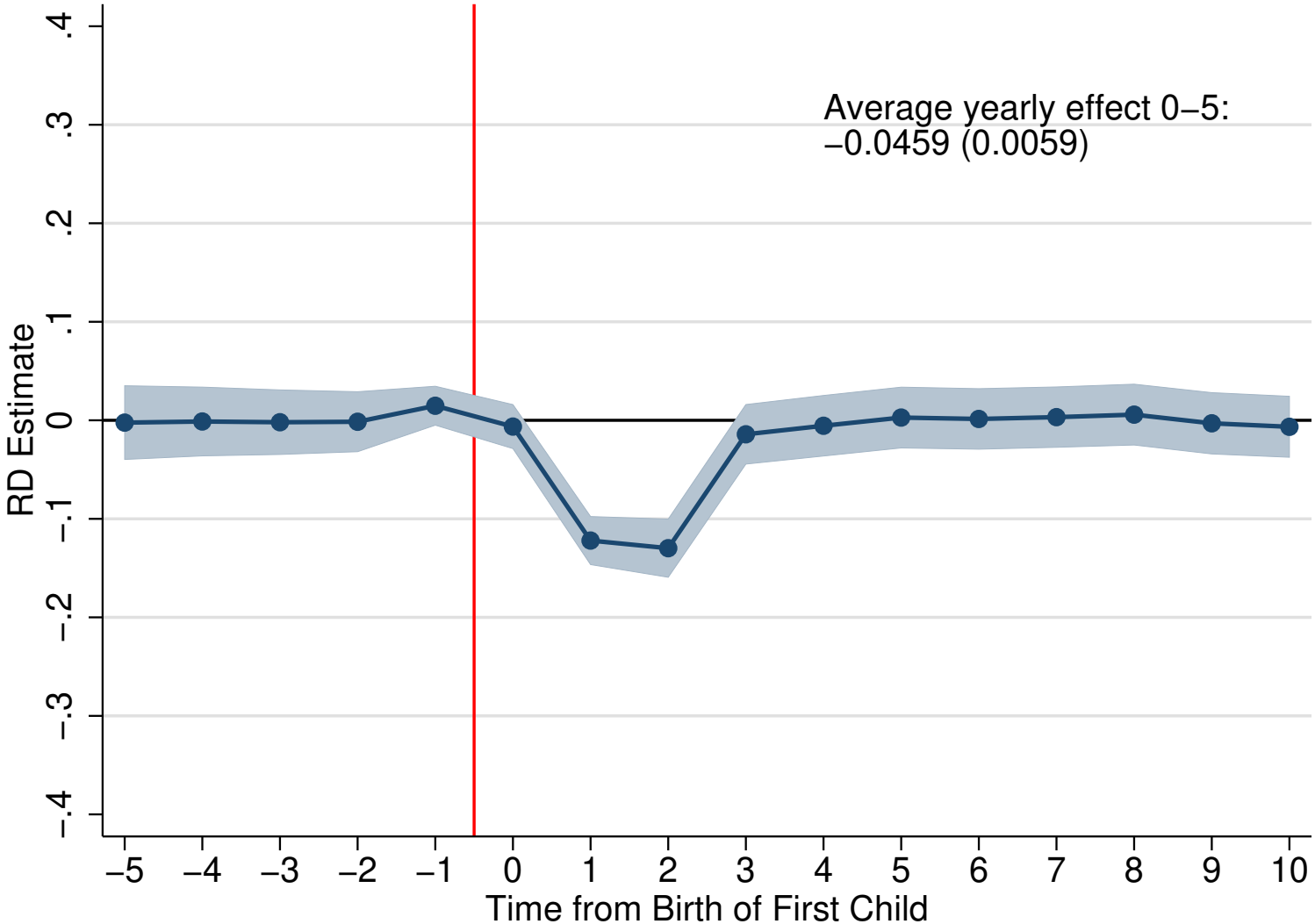
1990 Reform: 10 Years After Birth



RD Estimate: 360.1 (502.1)
Div. by Counterfactual: 0.0208 (0.0290)

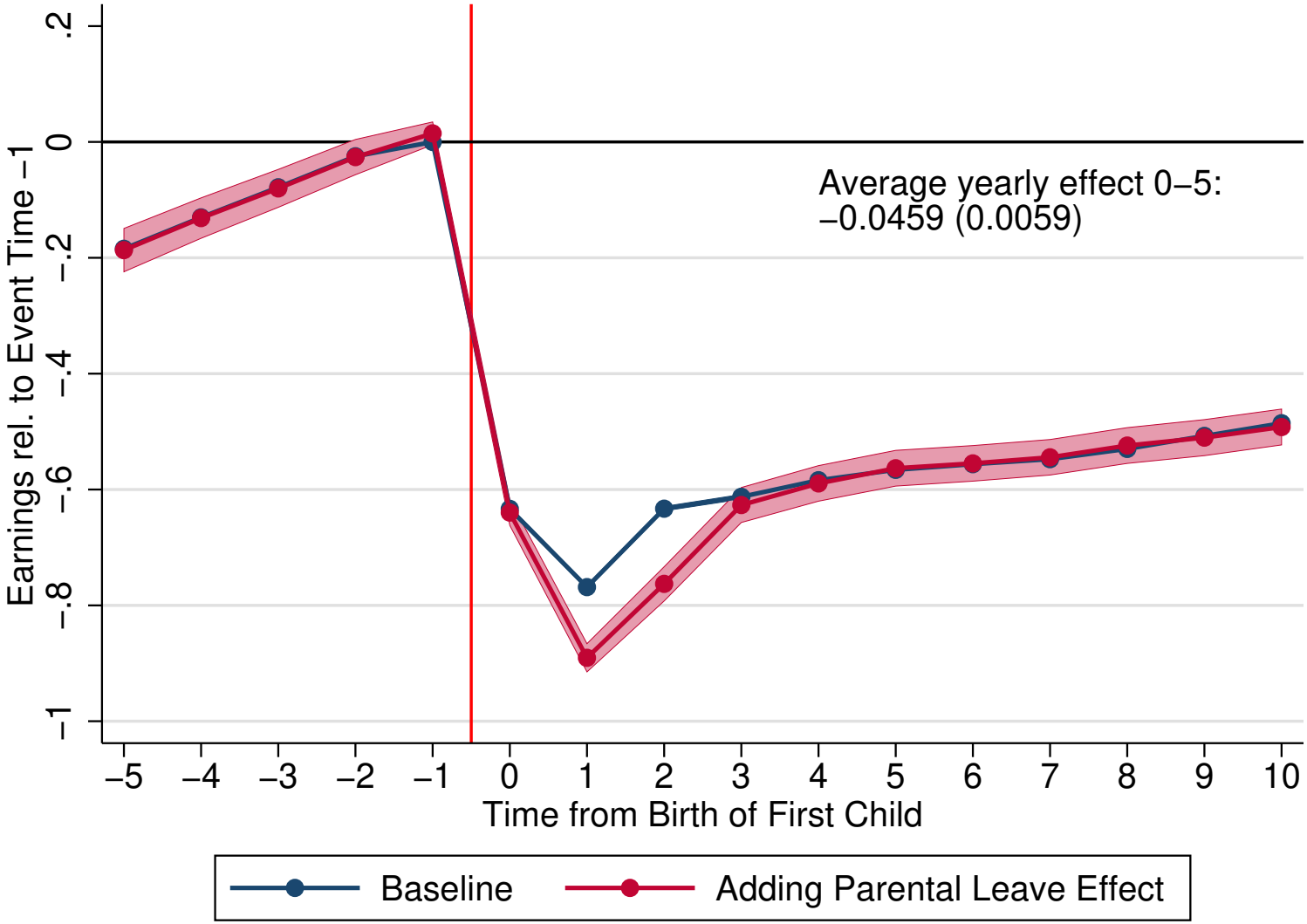
1989 Placebo & DiD-RD

1990 Reform: Dynamic RD Estimates

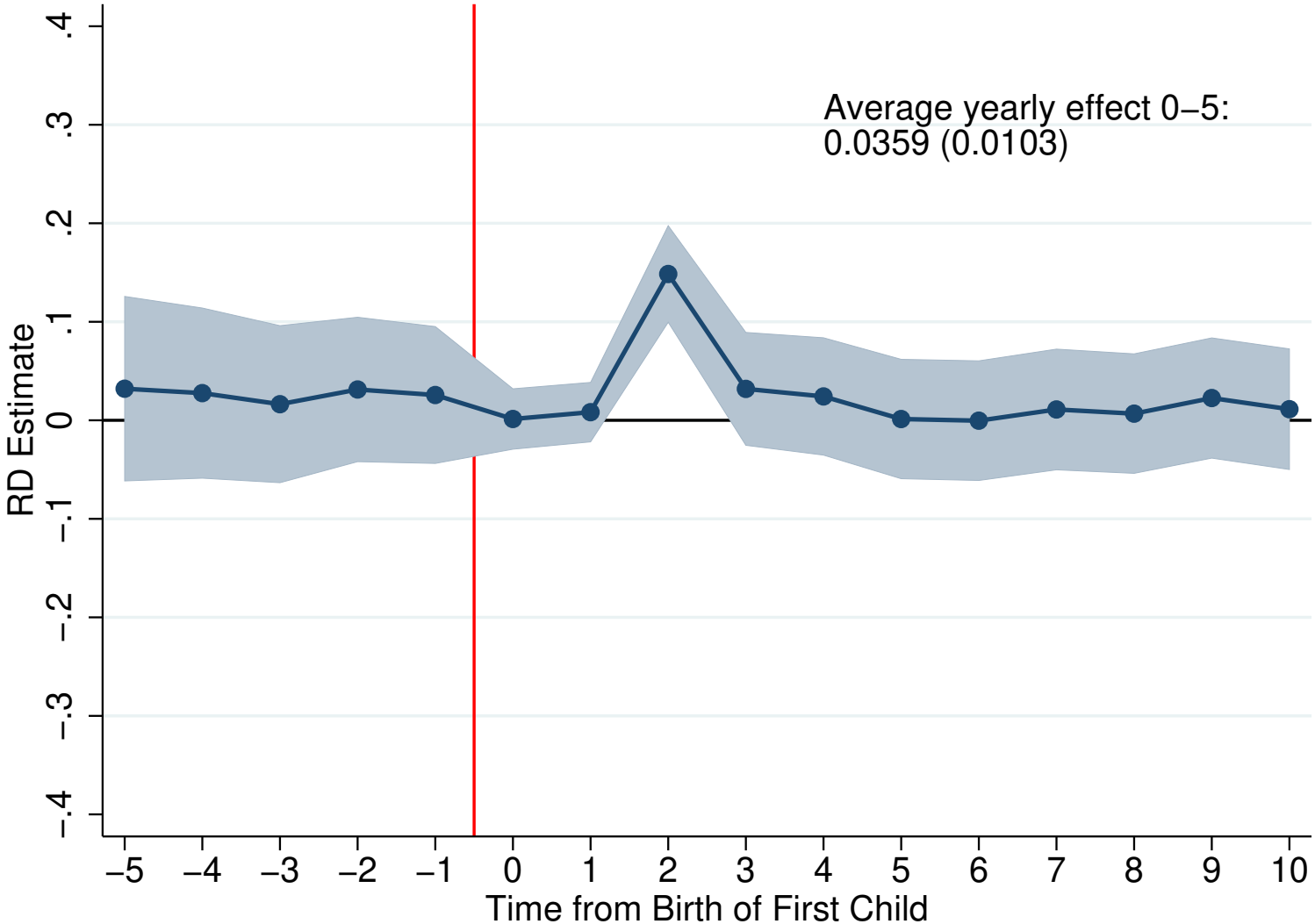


Robustness: Fertility

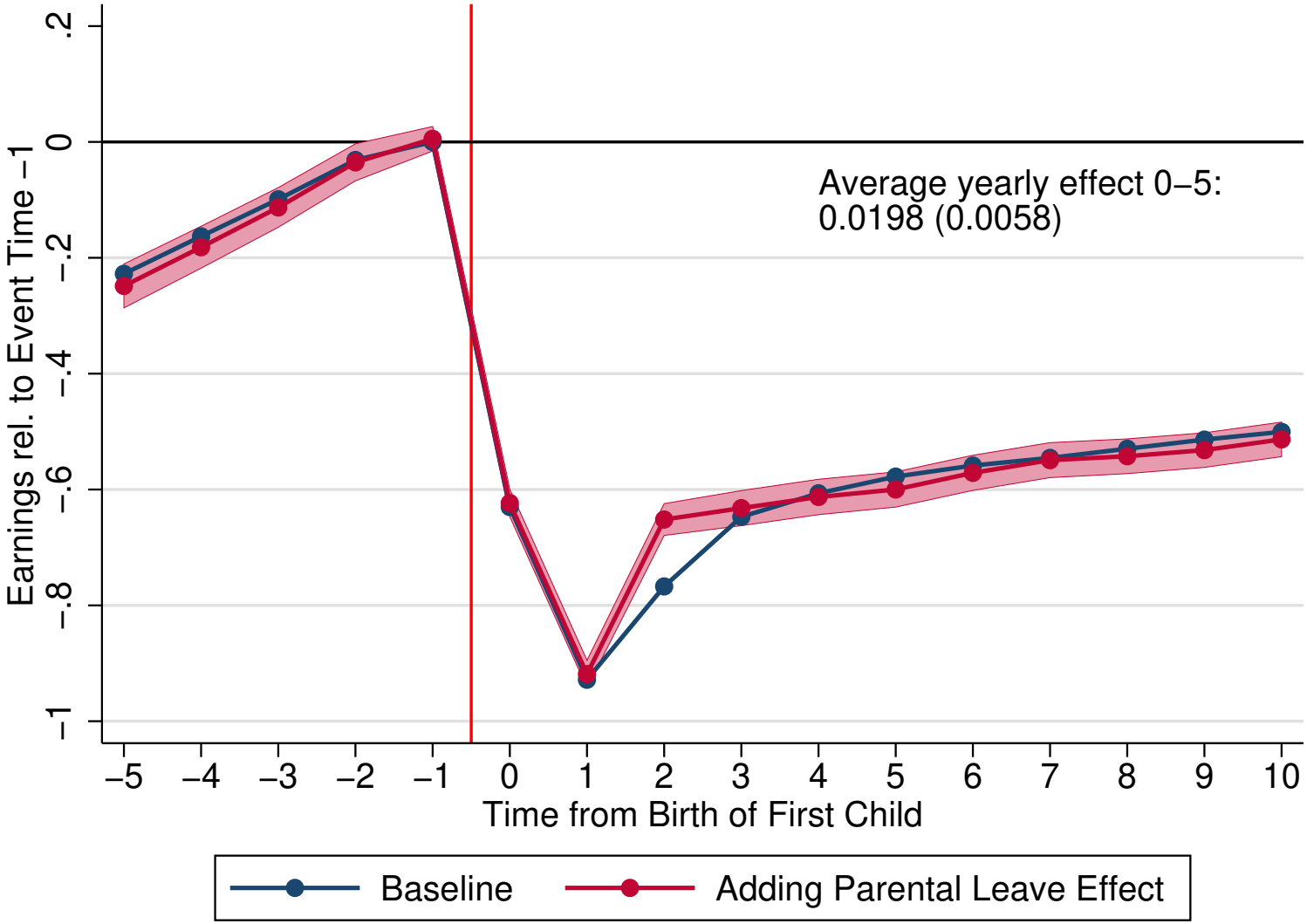
1990 Reform: Effects on Child Penalties



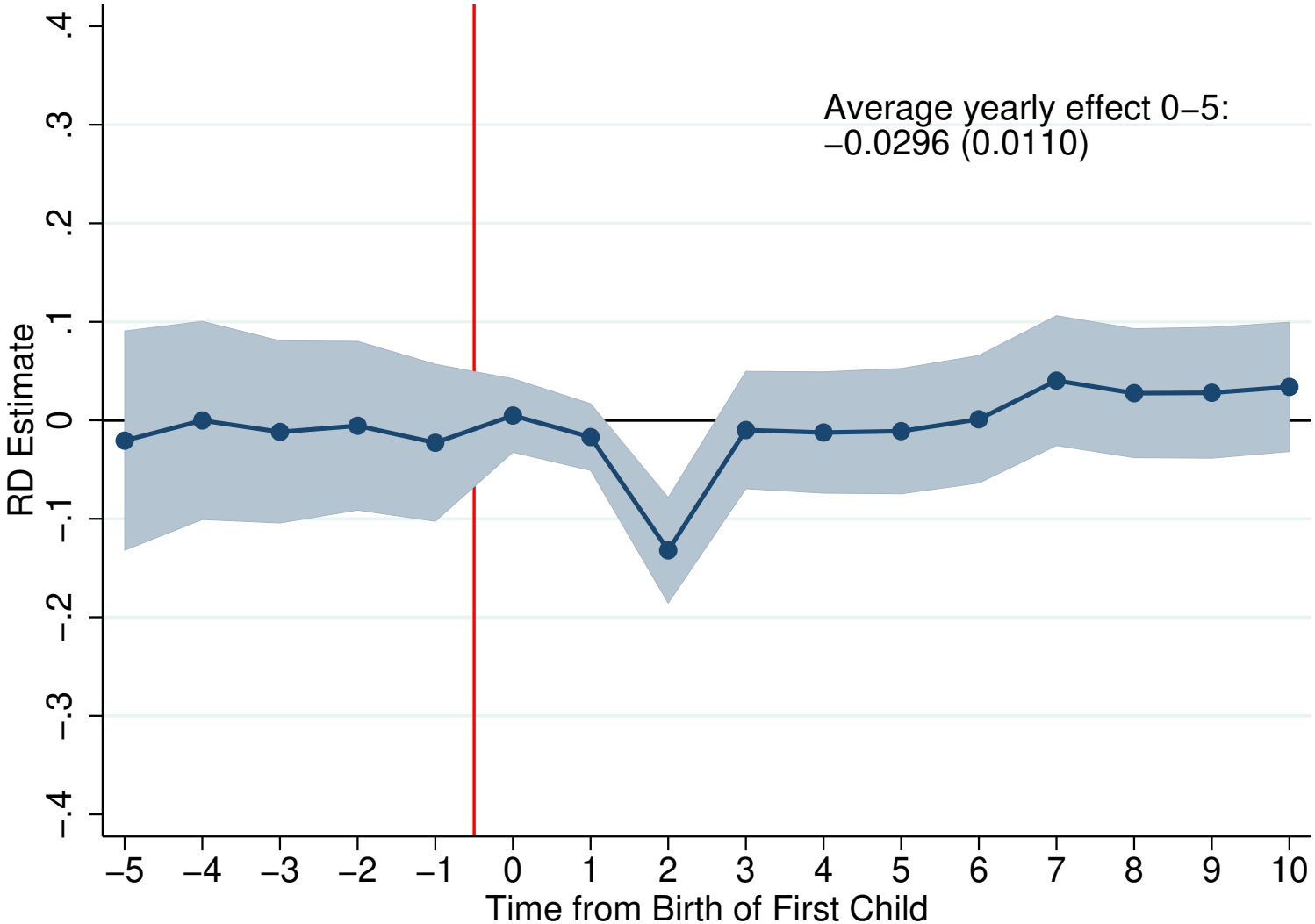
1996 Reform: Dynamic RD Estimates



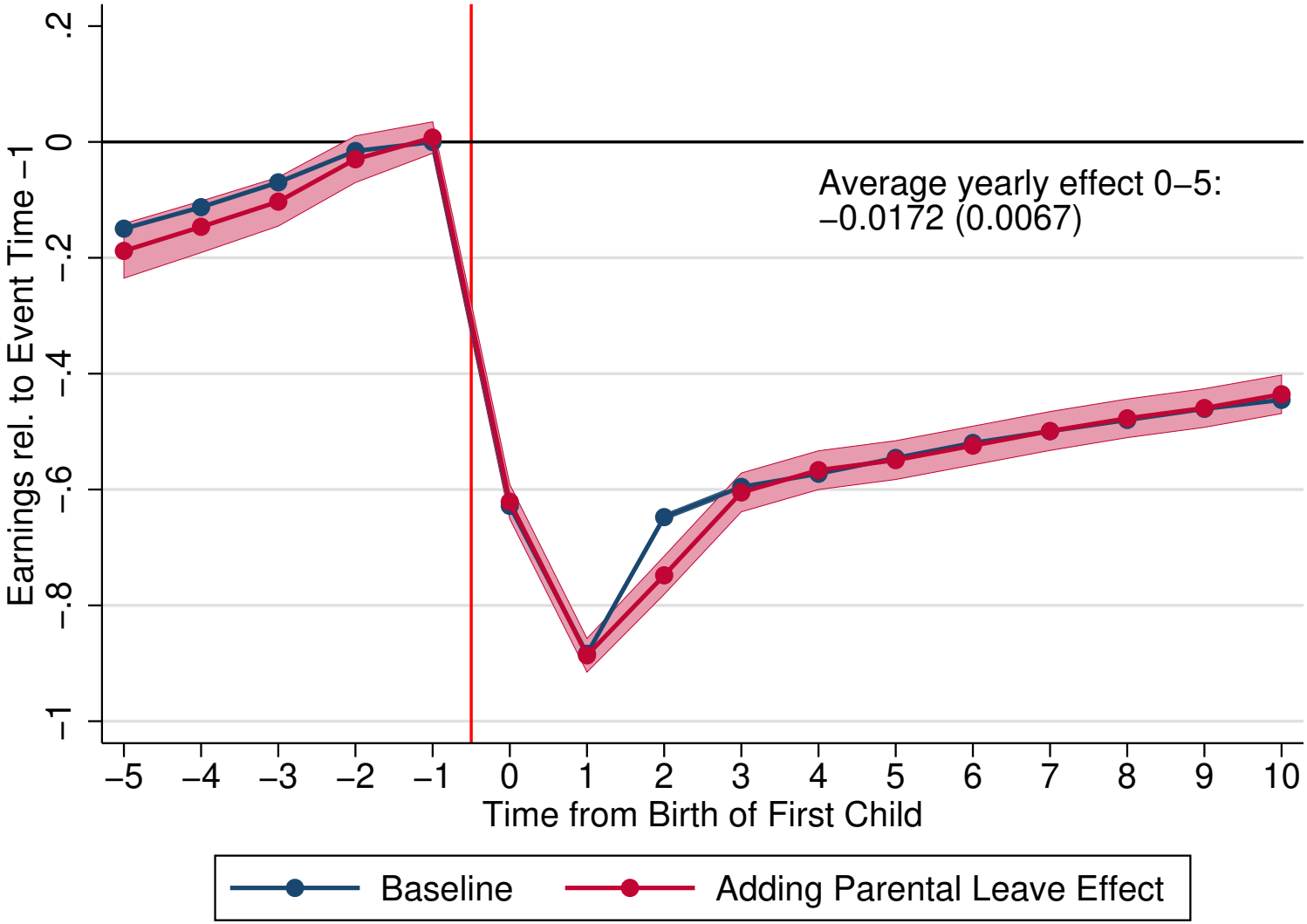
1996 Reform: Effects on Child Penalties



2000 Reform: Dynamic RD Estimates



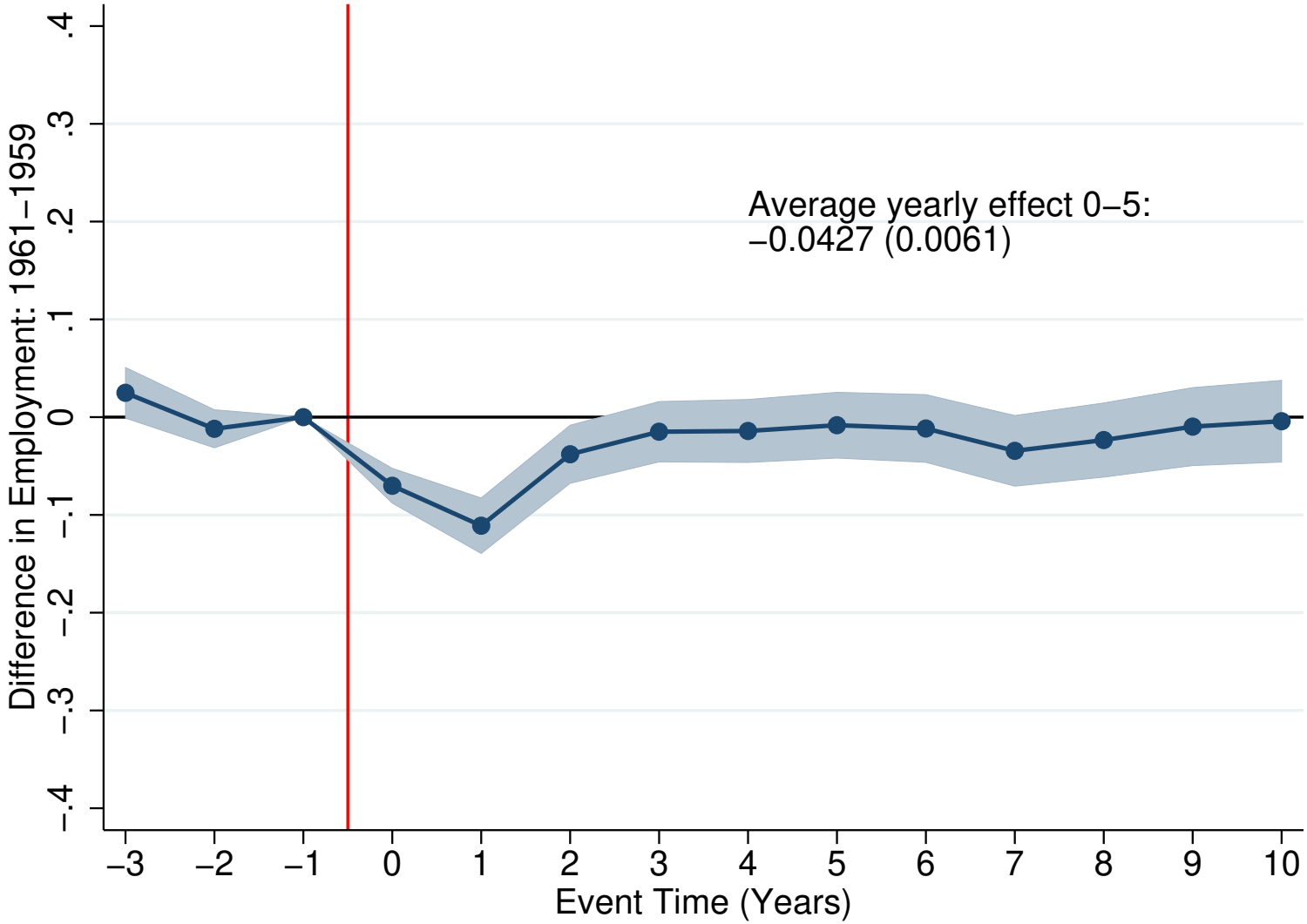
2000 Reform: Effects on Child Penalties



Parental Leave: The 1961 Reform

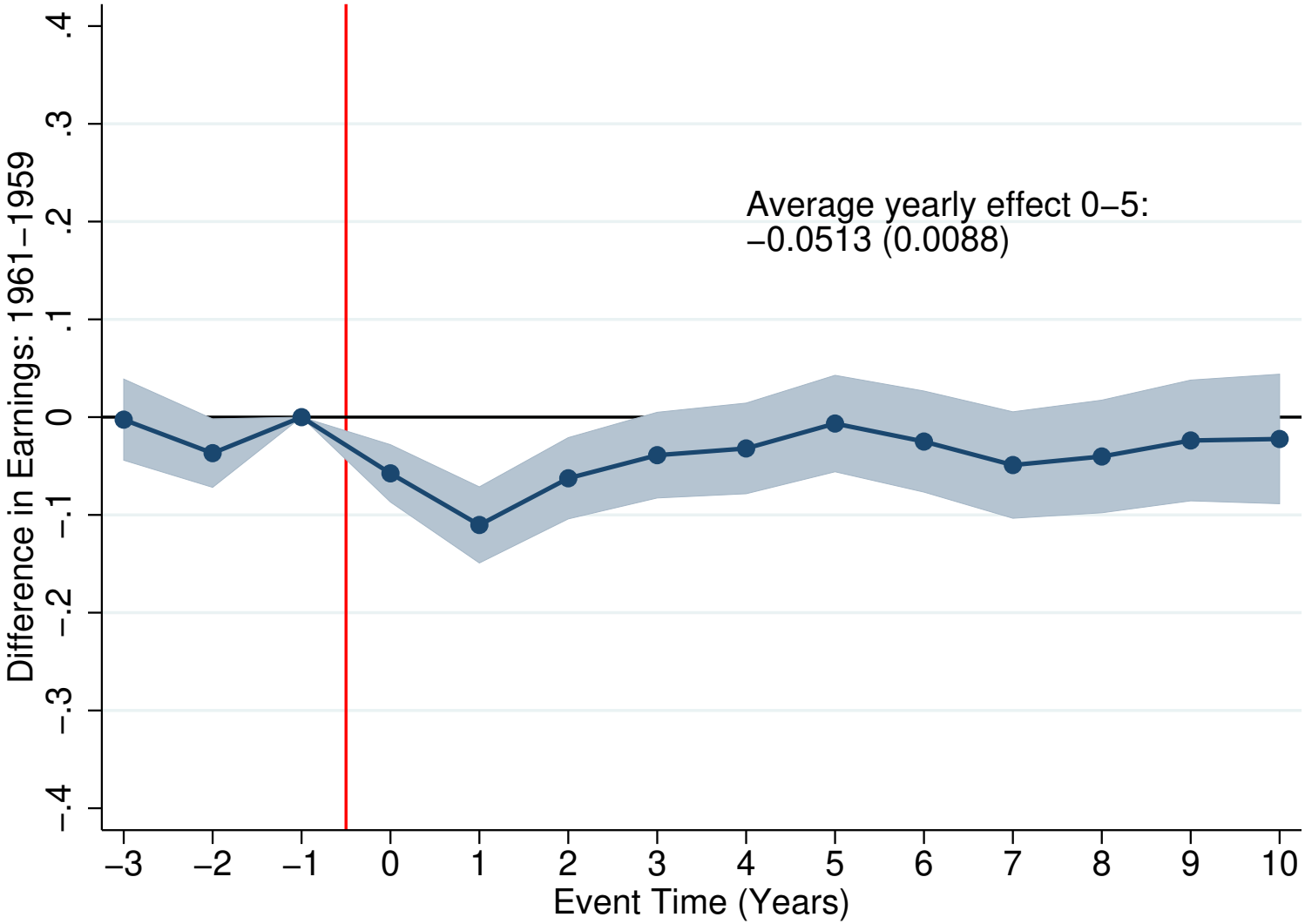
- Introduction of 1 year Parental Leave
  - Starting in January 1961
  - PL comes with 1 year Job Protection 1961 Reform Details
  - Interesting in context of US debate
- Data:
  - REV: Pension system register with info on careers since 1949
- Strategy: Diff-in-Diff
  - Grandfathering (no RD) 1961 Reform Take-Up
  - Compare 1959 births to 1961 births
  - Identification: no trends in child penalties by birth-cohort

1961 Reform: Dynamic Employment Effects

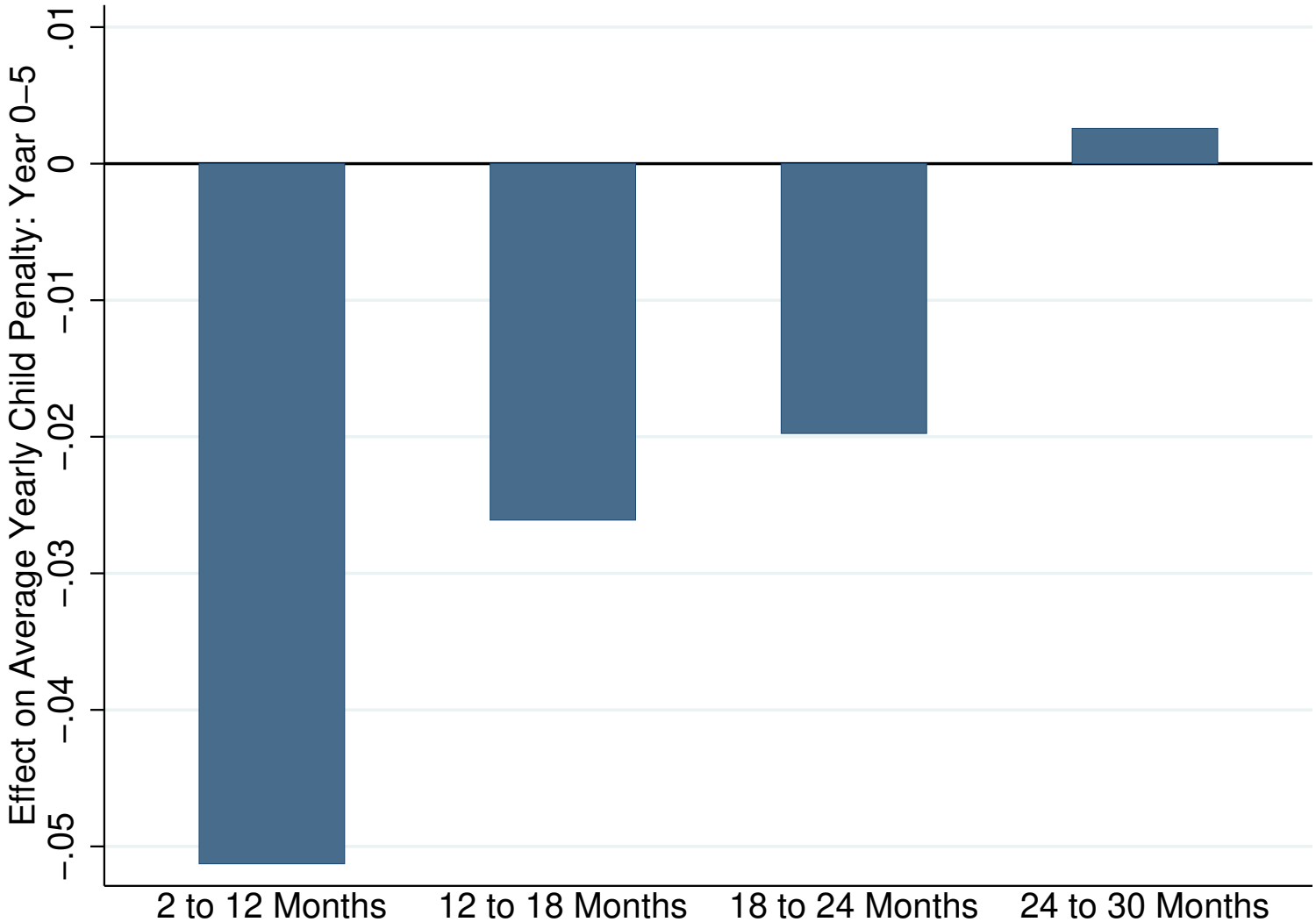


Robustness: Trends

1961 Reform: Dynamic Earnings Effects



Parental Leave Expansions: Effects by Duration



Impact of Child Care Provision

Granular Measures of Child Care Provision

- For each municipality X year, granular information on all nurseries & kindergarten:
  - Location, opening hours, # of teachers, contracts (part-time/full time), and legal max # of children per teacher

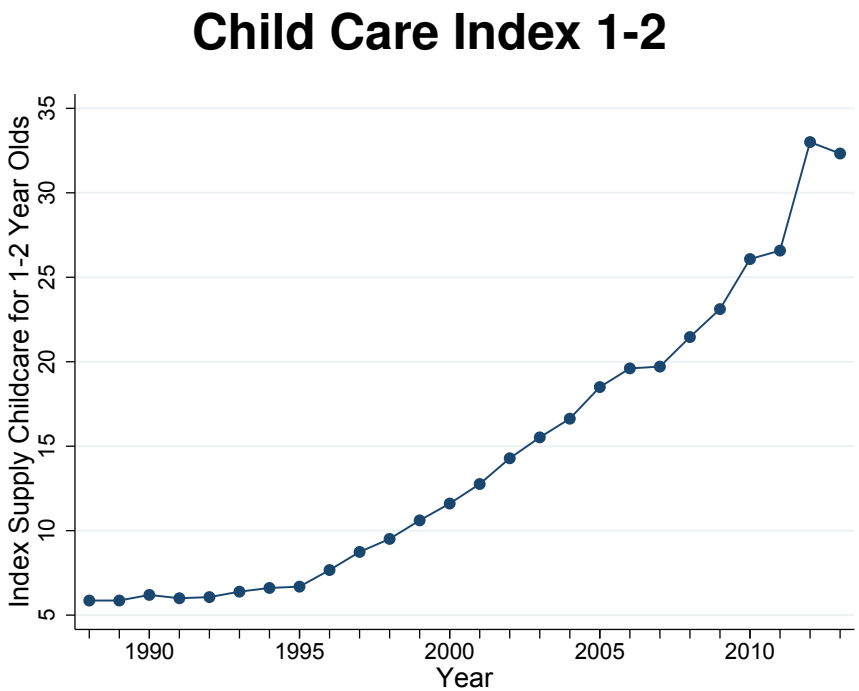
- Create 2 indices of child care provision at municipality level:
  - **Index 1-2 (Nursery Care)**

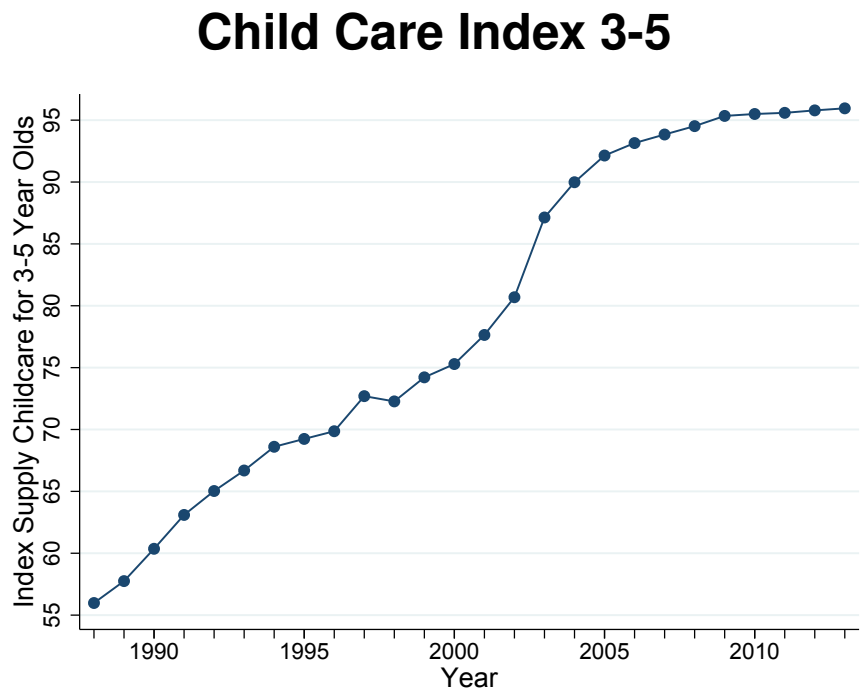
$$\text{Index 1-2} = \frac{\text{\# FTE Child Care Spots for Children Age 1-2}}{\text{\# Children of Age 1-2}}$$

  - **Index 3-5 (Pre-School Care)**

$$\text{Index 3-5} = \frac{\text{\# FTE Child Care Spots for Children Age 3-5}}{\text{\# Children of Age 3-5}}$$

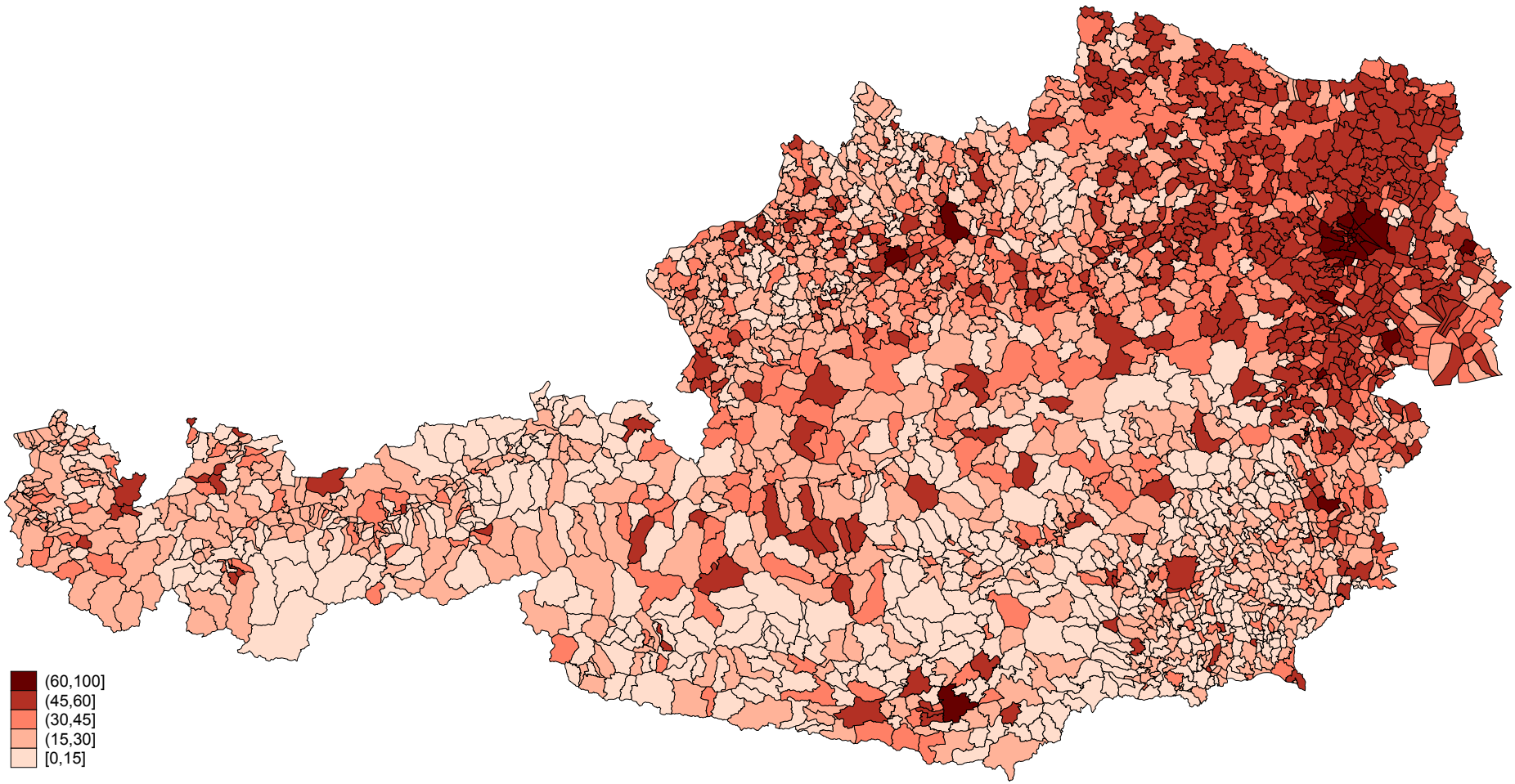
Index of Child Care Provision Over Time





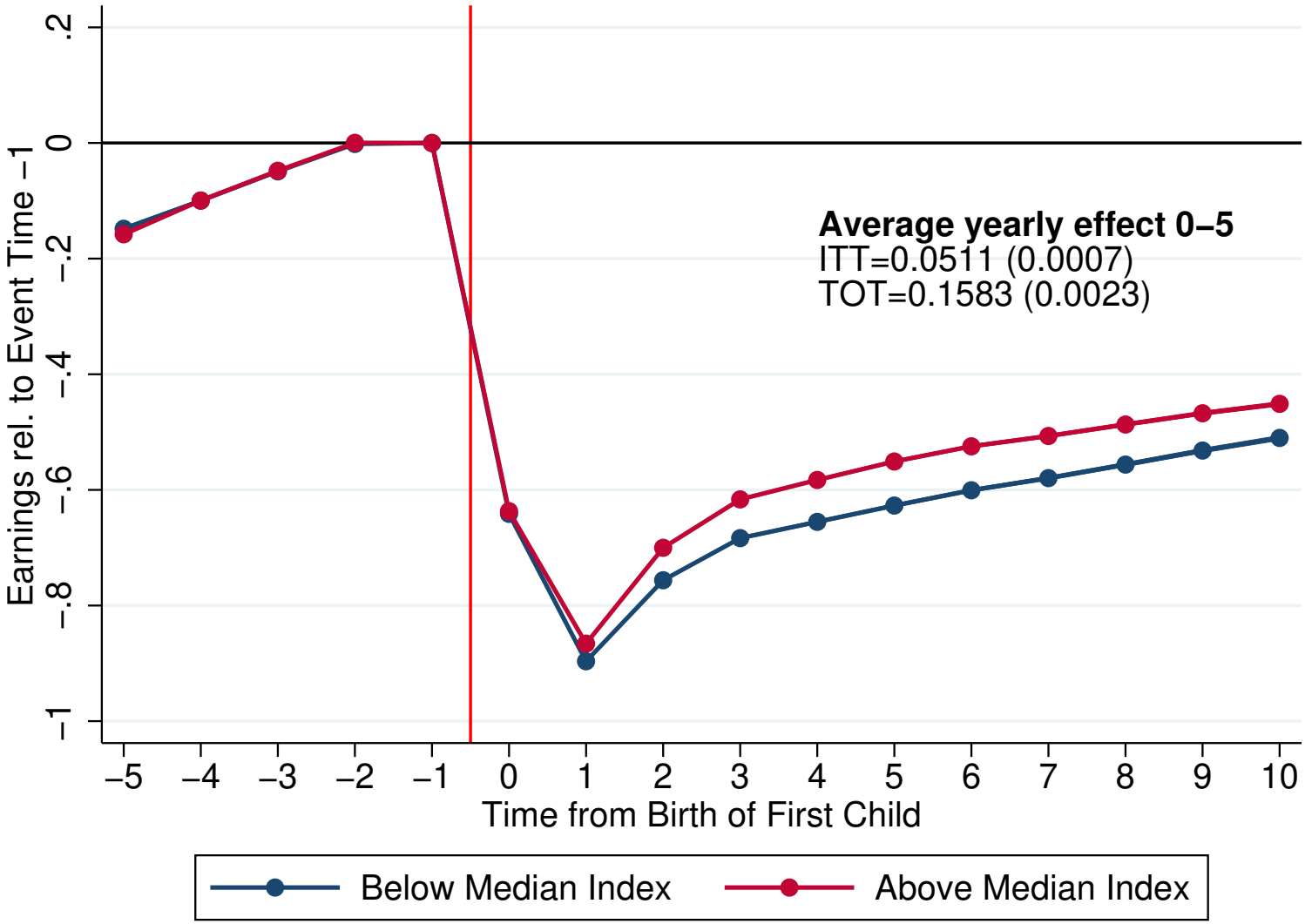
Spatial Variation in Child Care Provision

Index 1-5 - 1990



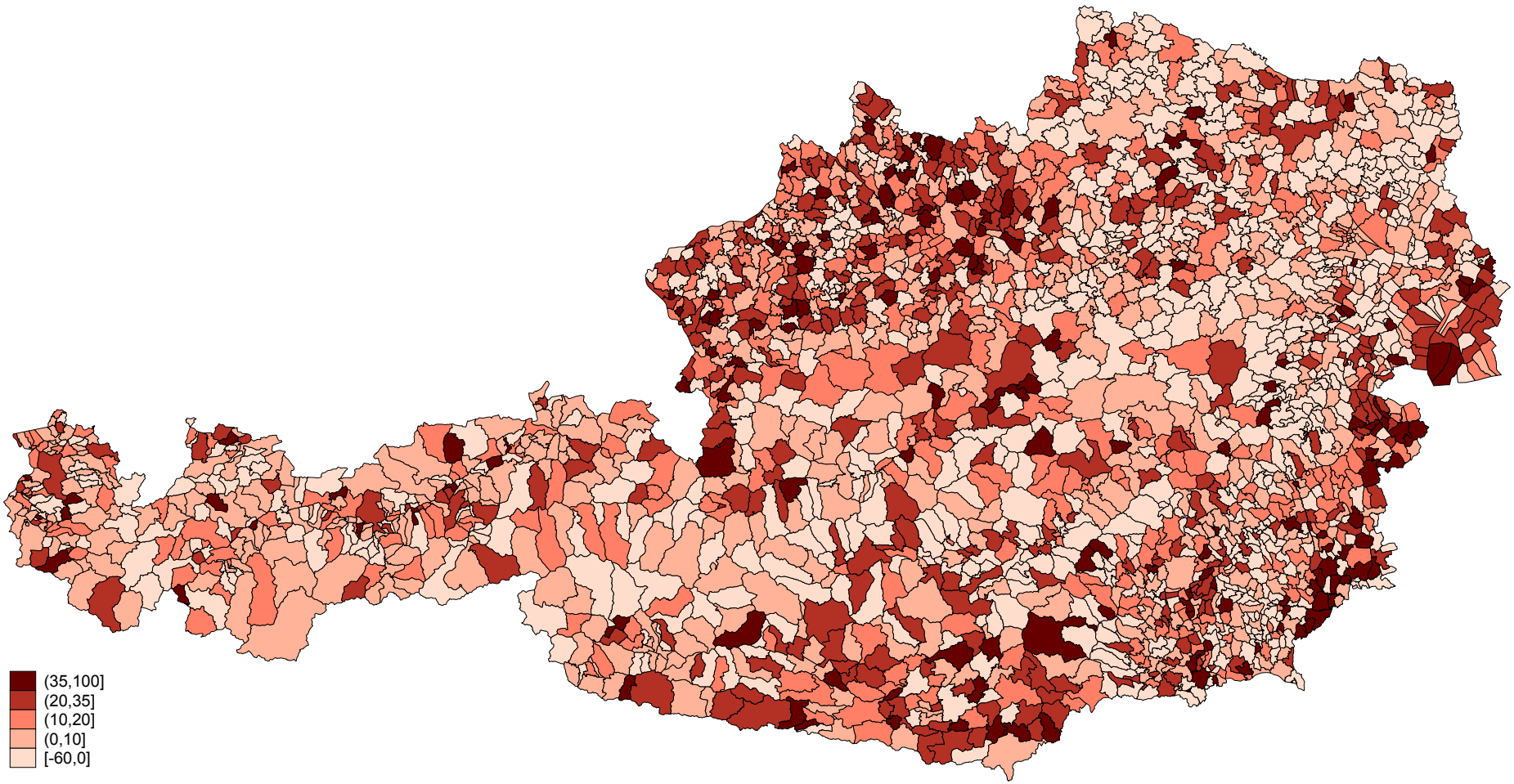
Child Penalty by Level of Child Care Provision

Below vs Above Median Index 1-5 in 1990



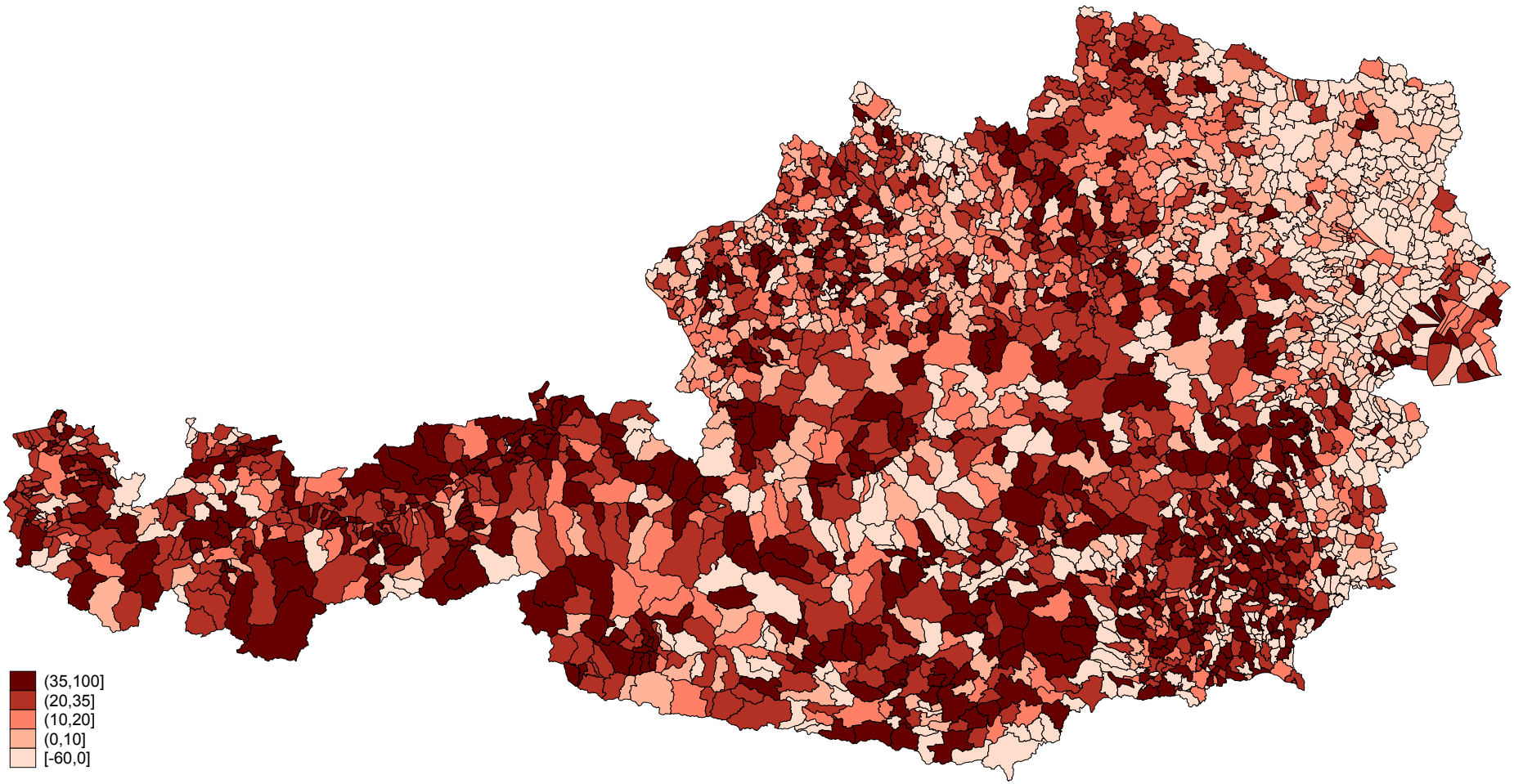
Spatial Variation in Child Care Expansion

Change in Index 1-5 Between 1990 and 2000



Spatial Variation in Child Care Expansion

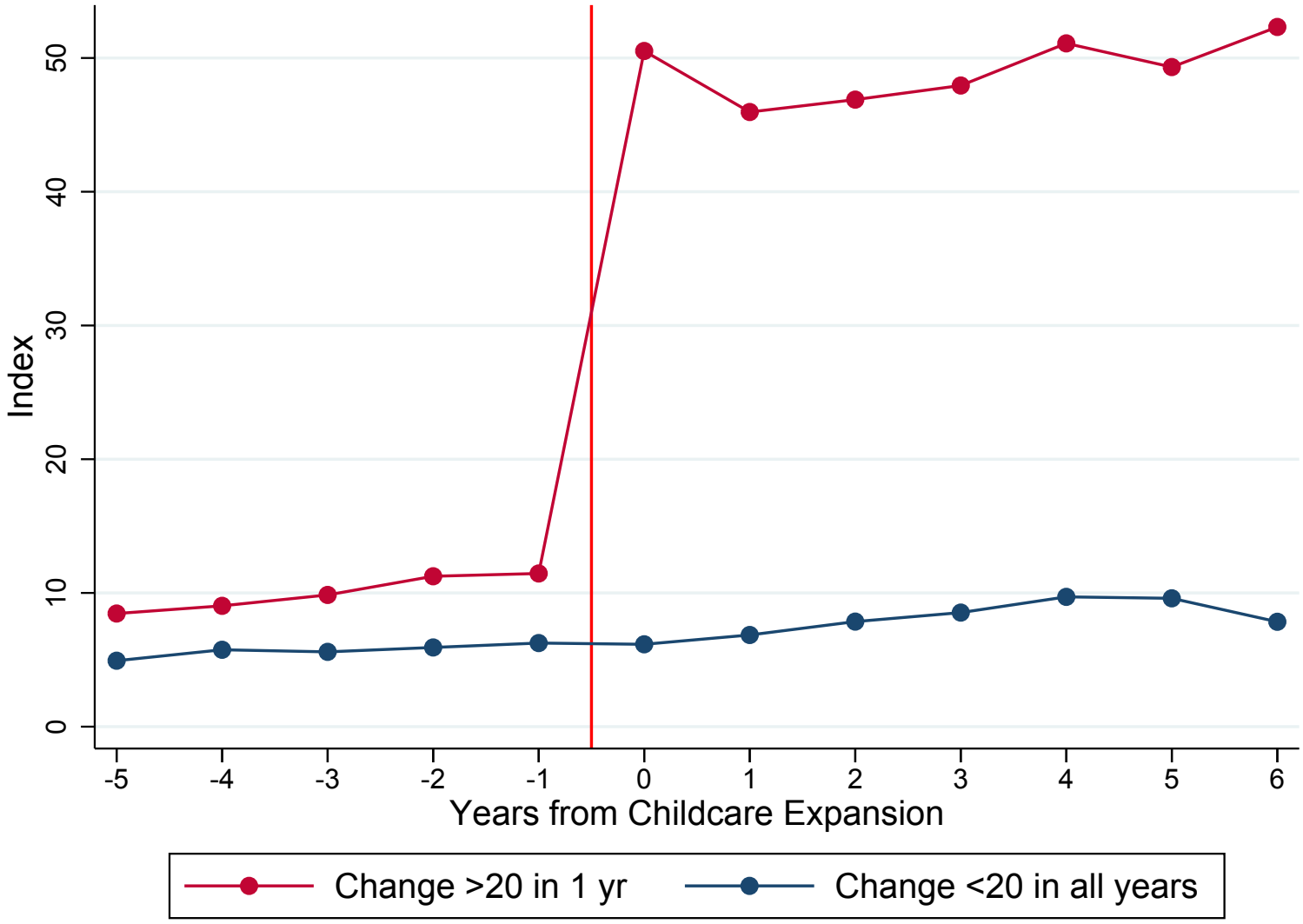
Change in Index 1-5 Between 2000 and 2010



Exploiting Local Child Care Expansions

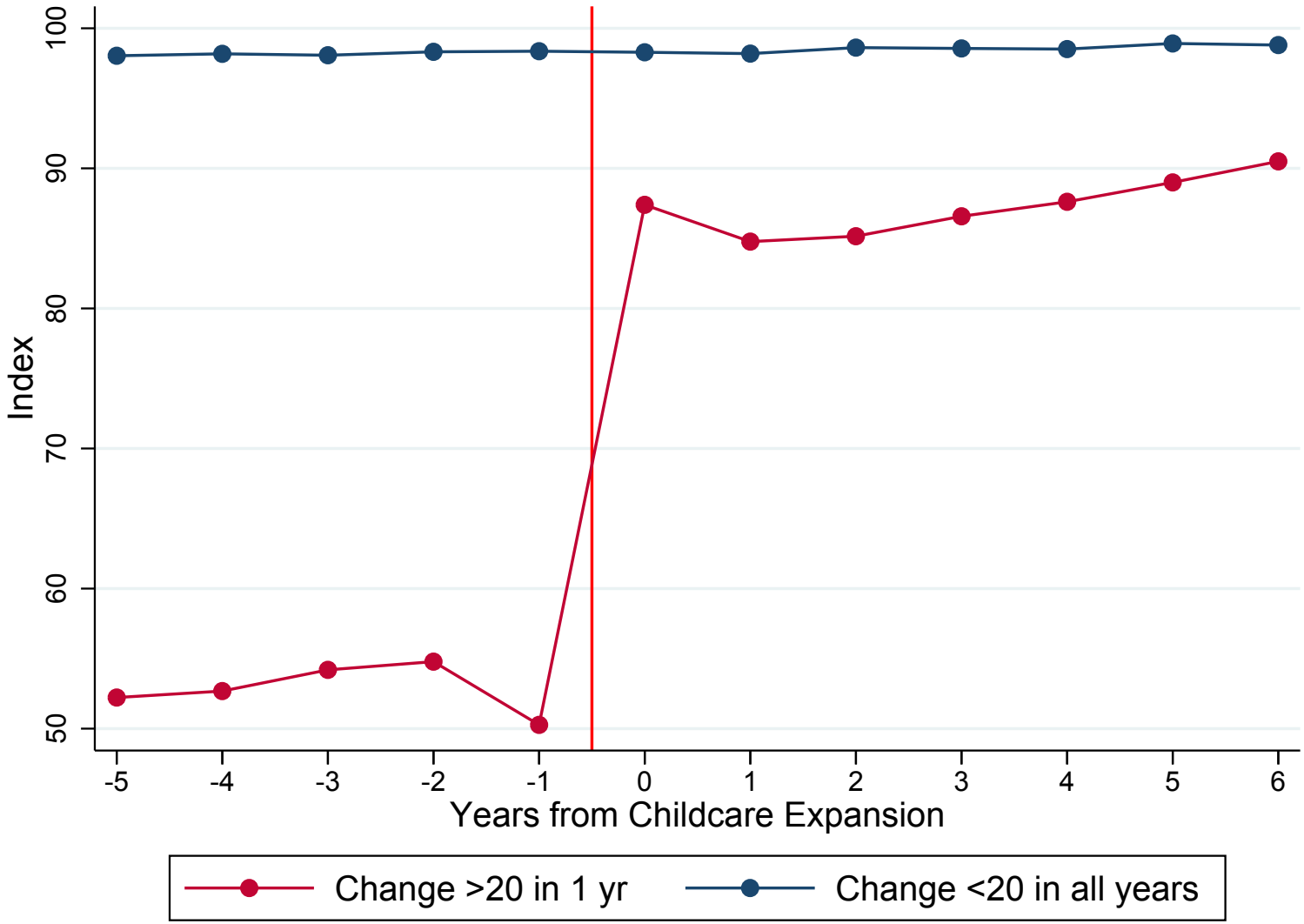
- Spatial variation is conceptually appealing
  - Macro vs micro effect
  - No comparison btw women with vs w/o young children (biased by dynamic effects)
  - But spatial variation often endogenous
- Isolate episodes of large and sudden increases in child care provision at municipality level
  - Index increase > 20 in a single year
  - Driven by large supply shocks (new facility, new teachers)
- Compare dynamic outcomes of women in treated municipalities to similar women (IPW) in control municipalities
- Compare expansions of nursery care (year 1-2) vs pre-school care (year 3-5)

Nursery Care Expansion (Year 1-2)



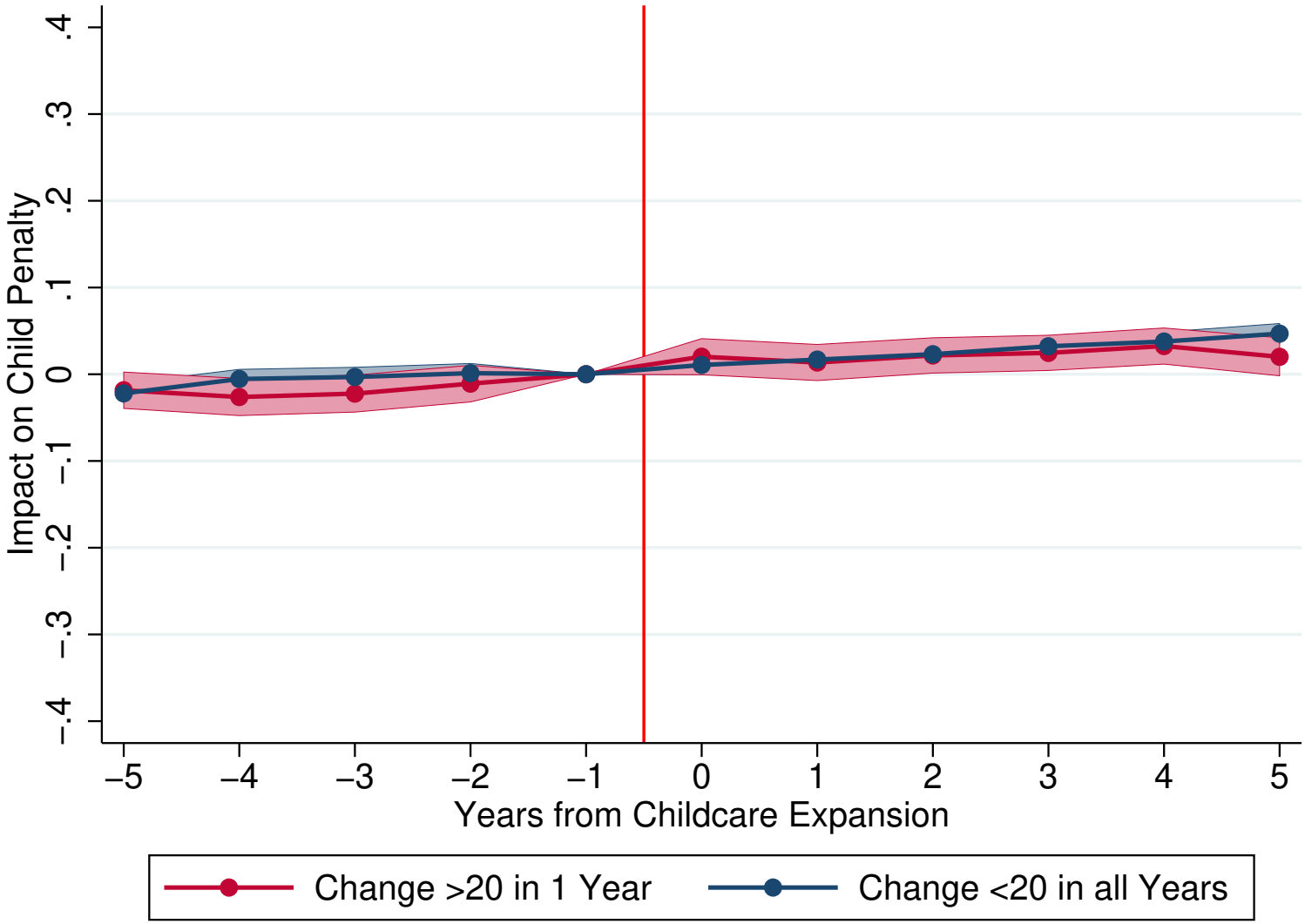
Actual Take Up

Pre-School Care Expansion (Year 3-5)



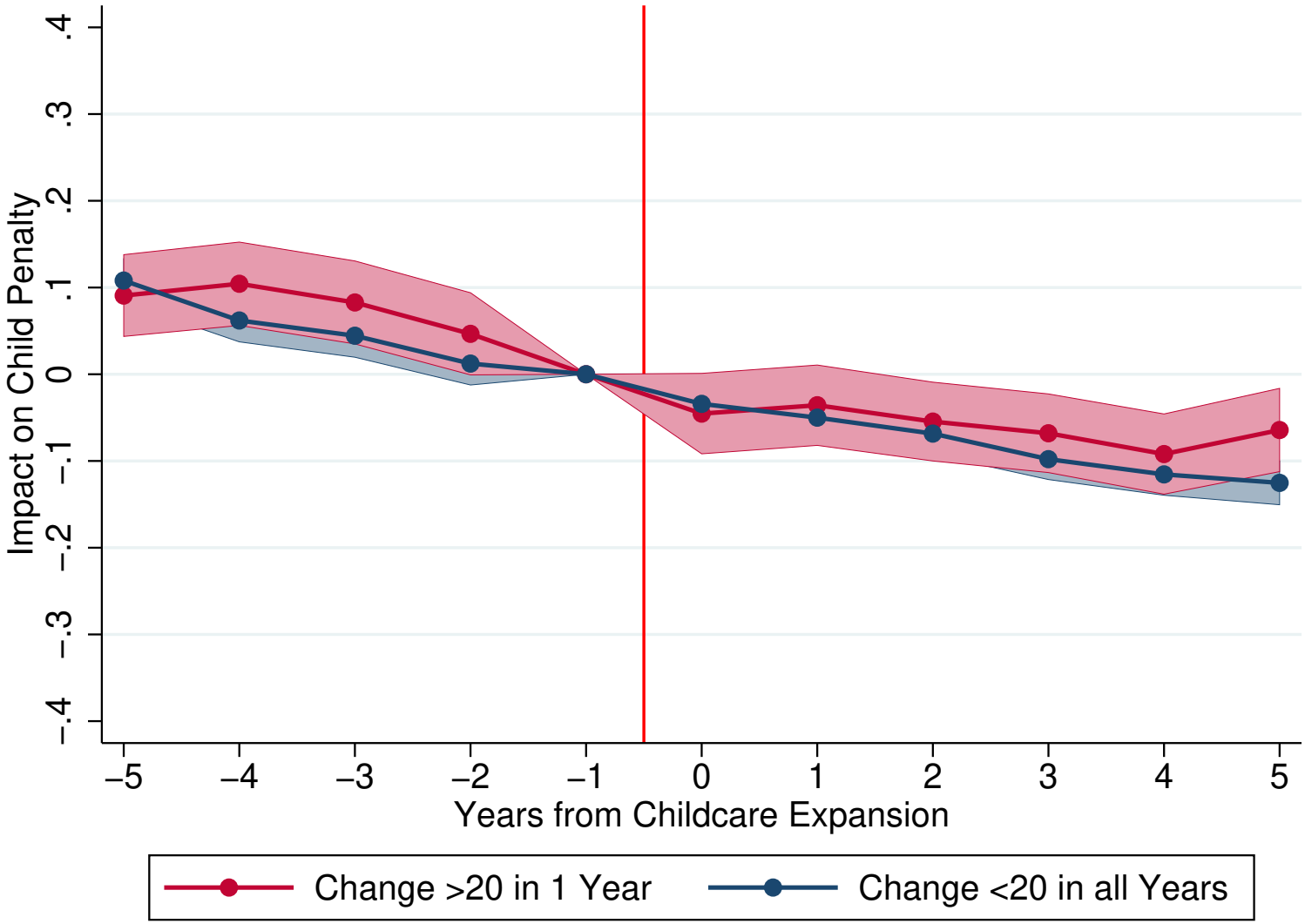
Nursery Care Expansion

Earnings 1 Year Before Birth



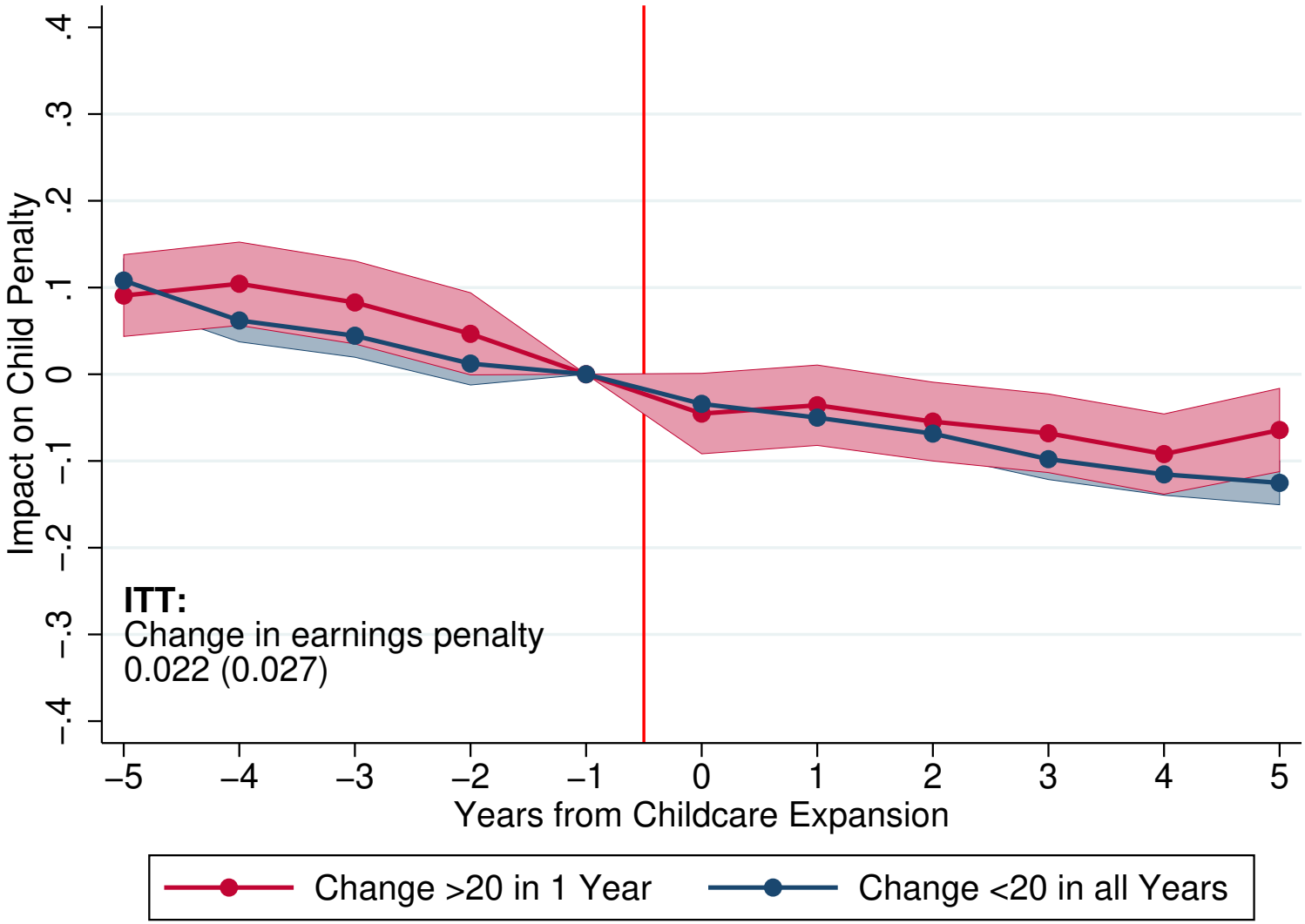
Nursery Care Expansion

Earnings in Year 1 & 2 Post Birth



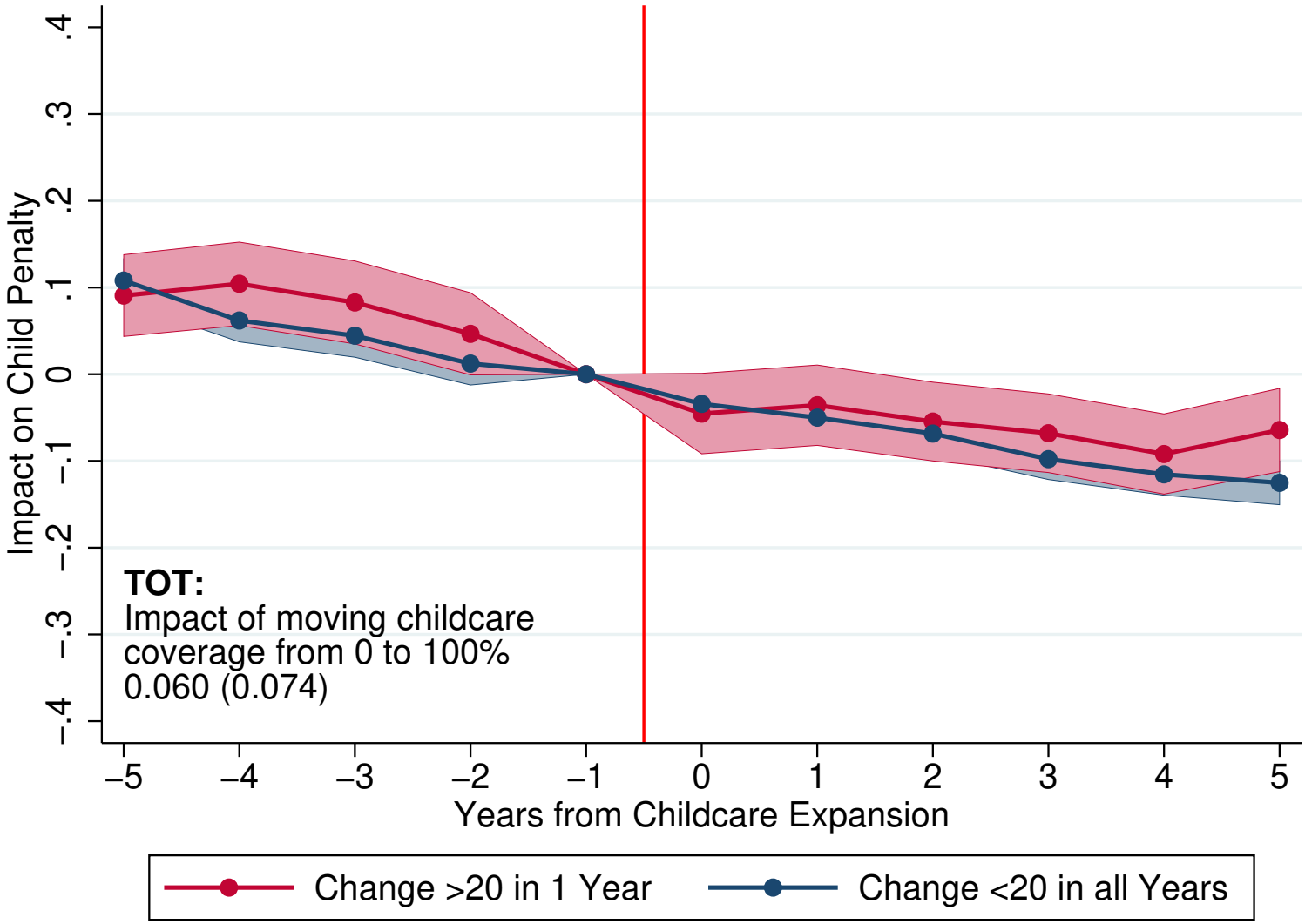
Nursery Care Expansion

Earnings in Year 1 & 2 Post Birth



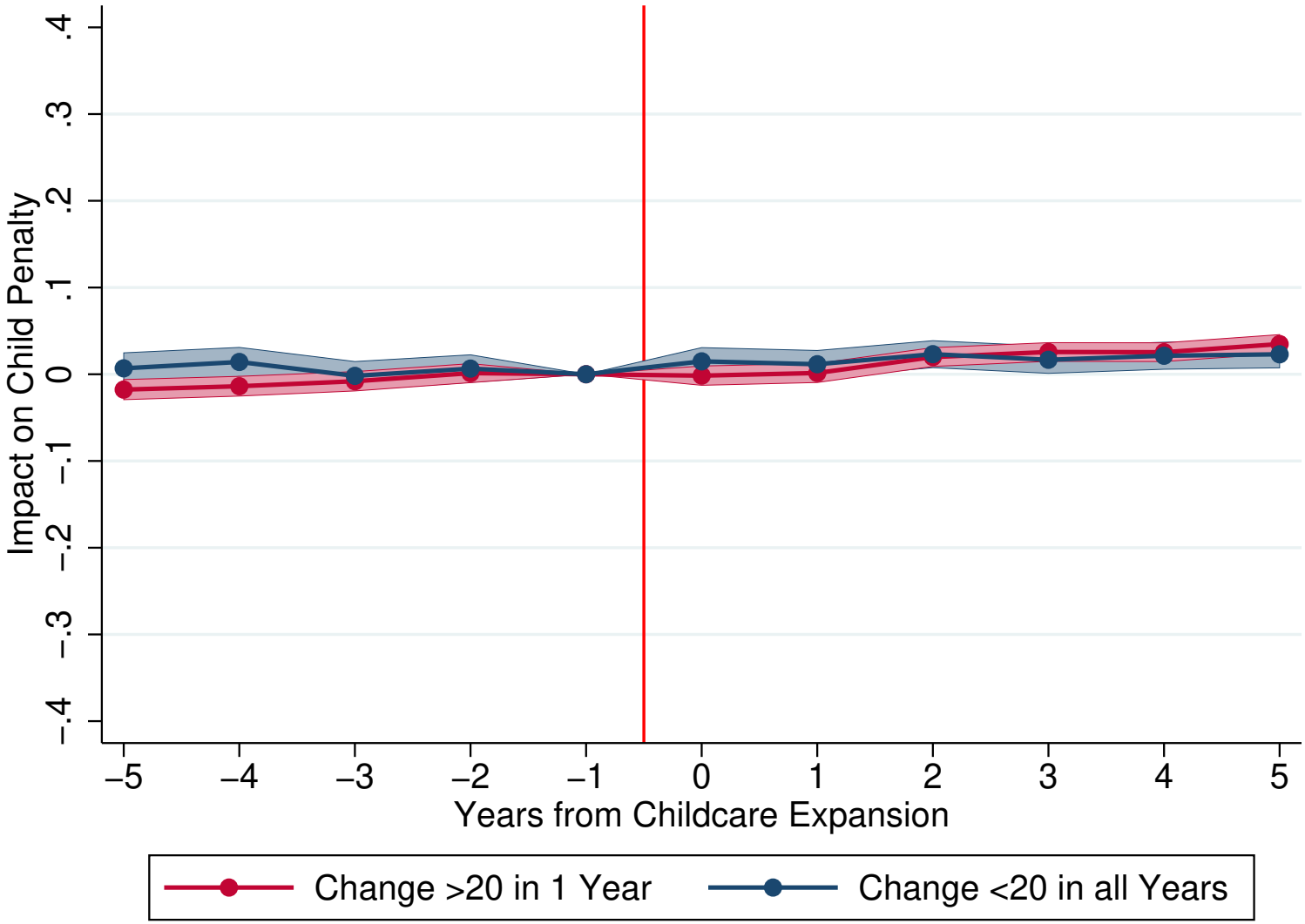
Nursery Care Expansion

Earnings in Year 1 & 2 Post Birth



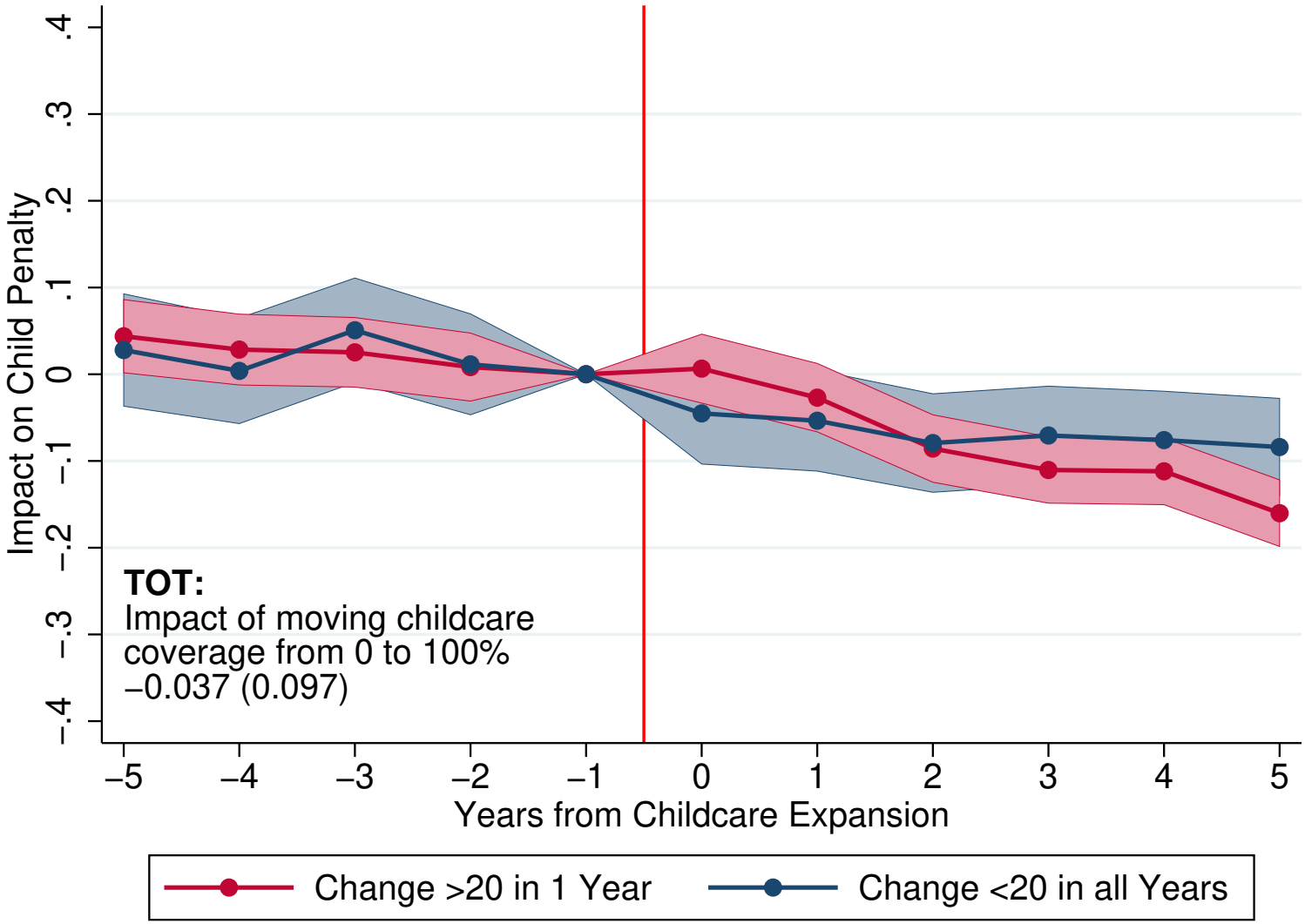
Pre-School Care Expansion

Earnings 1 Year Before Birth



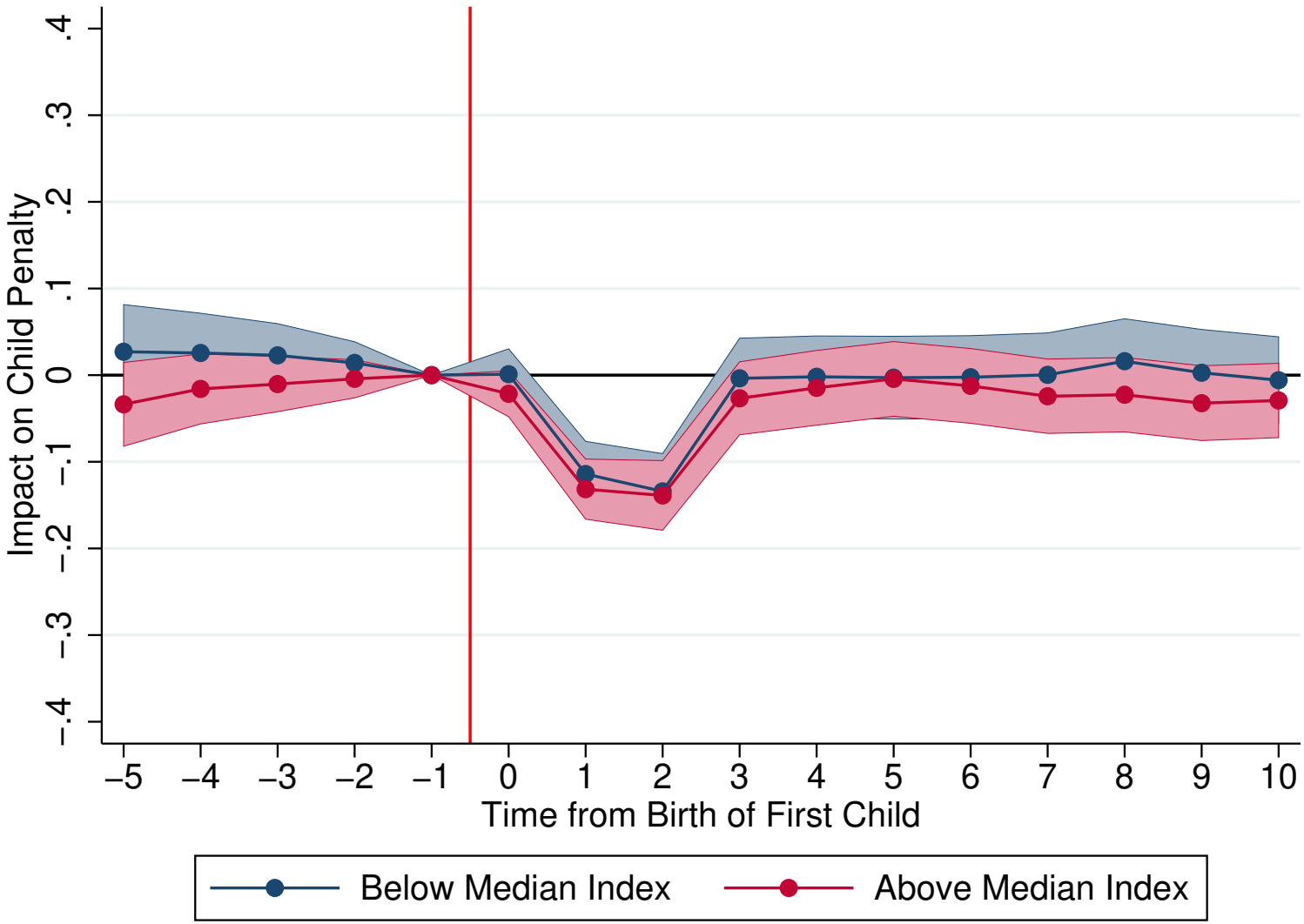
Pre-School Care Expansion

Earnings 3 to 5 Years Post Birth

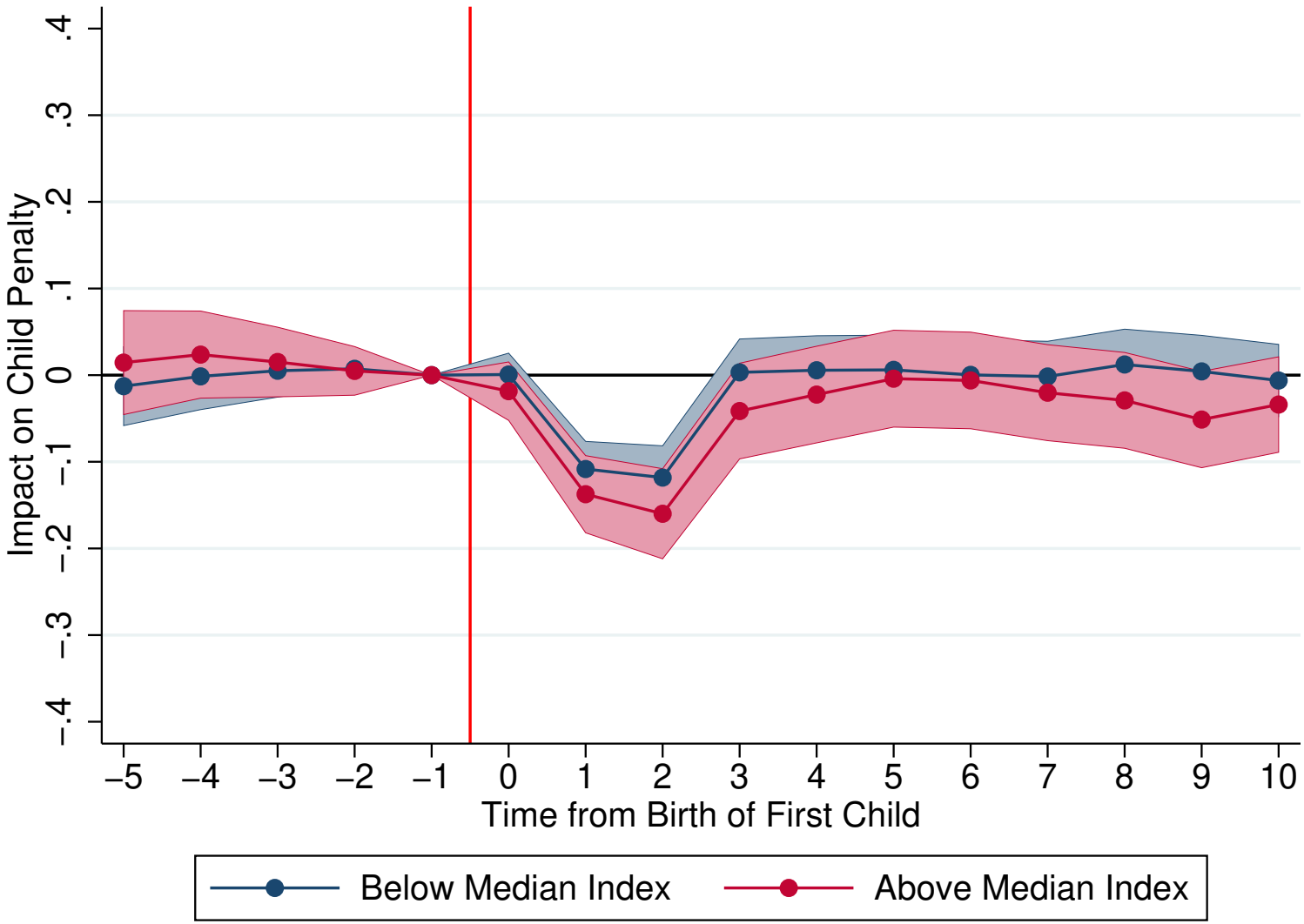


Interaction Effects?

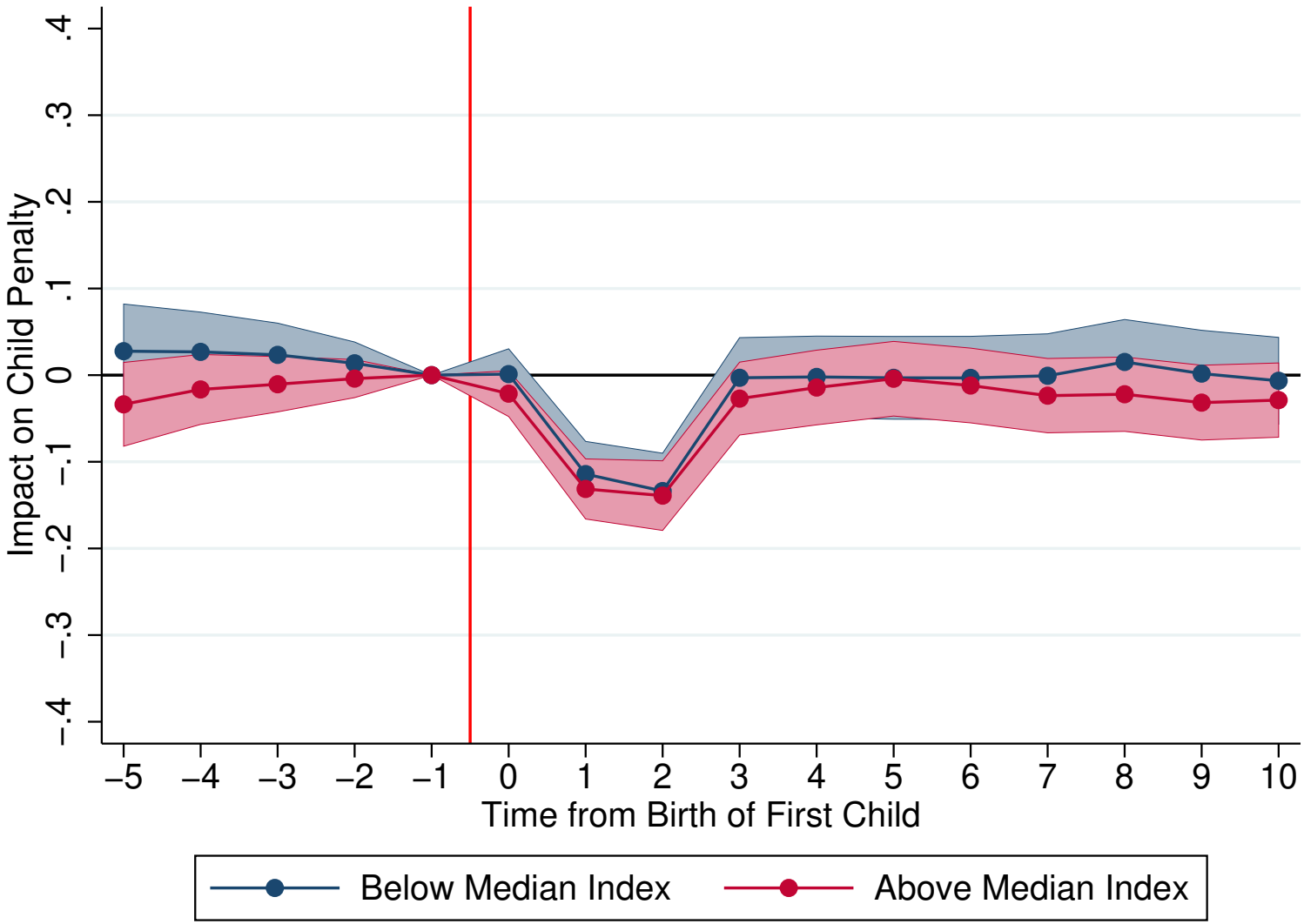
Effects of 1990 Parental Leave Reform by Level of Child Care Provision (Index 1-5)



Effects of 1990 Parental Leave Reform by Level of Child Care Provision (Index 1-2)



Effects of 1990 Parental Leave Reform by Level of Child Care Provision (Index 3-5)



Discussion & Implications

Gender Inequality: What Have Family Policies Done?

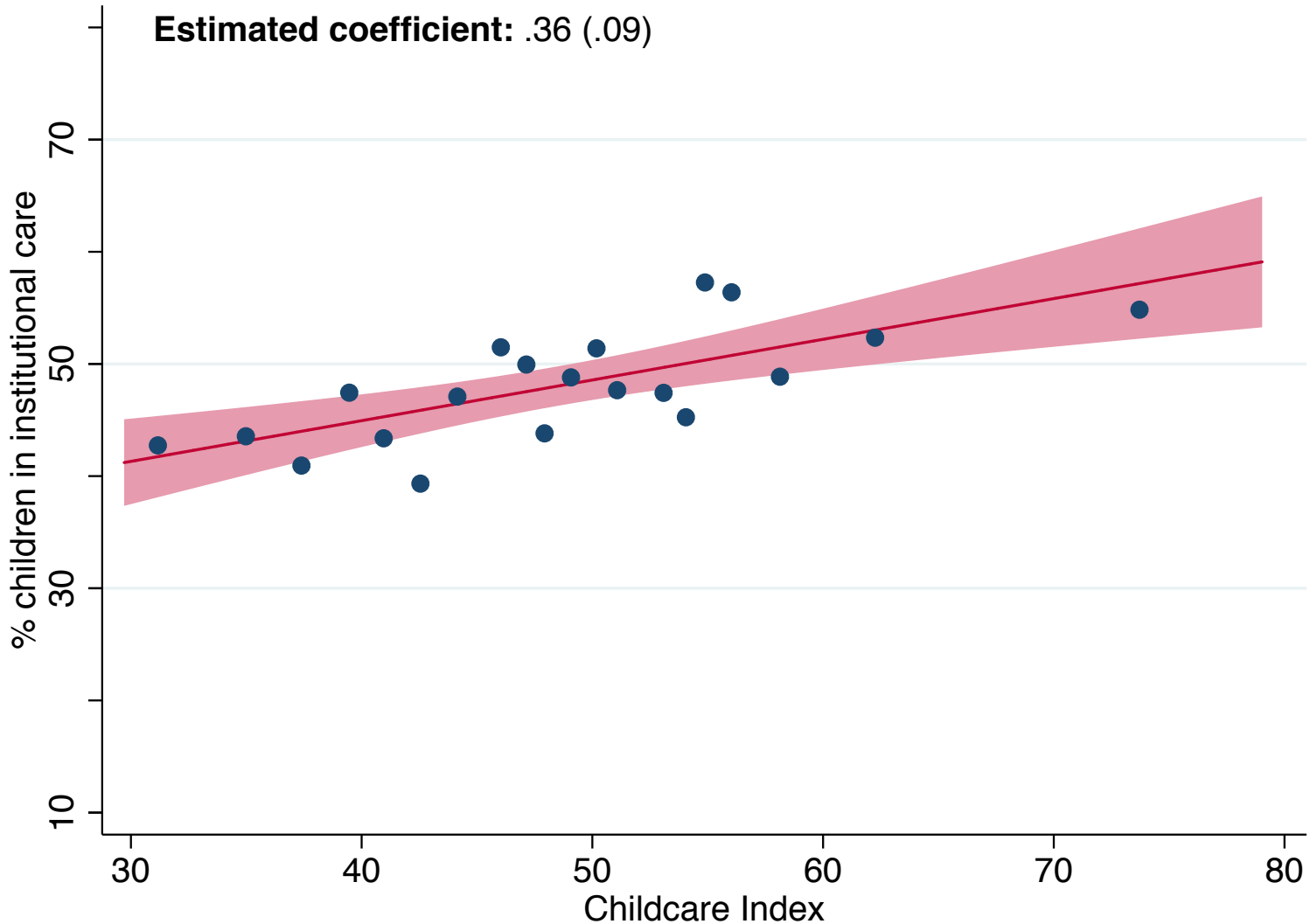
- OB decomposition of long run cross-sectional gender gap in earnings
  - Child-related inequality vs other factors
- Child penalties by birth cohort over the very long run
  - Remarkably stable over past 50 years! Penalties over 50 yrs
- Overall decline in gender inequality
  - Mostly due to other factors (education, etc.)
  - Child-related inequality very stable, explains growing share of GG Decomposition
- Limited role of policies on long term gender inequality
  - Counterfactual decompositions

Why Aren't Policies More Effective?

- Take-up of institutional child care not conducive to higher labor supply. Why?
  - Crowd-out of child care substitutes?
  - High cost of LS?
    - Frictions / constraints
    - Preferences / choices / high value of maternal care
- Use external information from Census in 1995 and 2002
  - Information on time use and child care
  - Match with child care index at the political district level ($\approx$100)
  - Cross-sectional variation
    - Control for selection using observables (Age & Education)

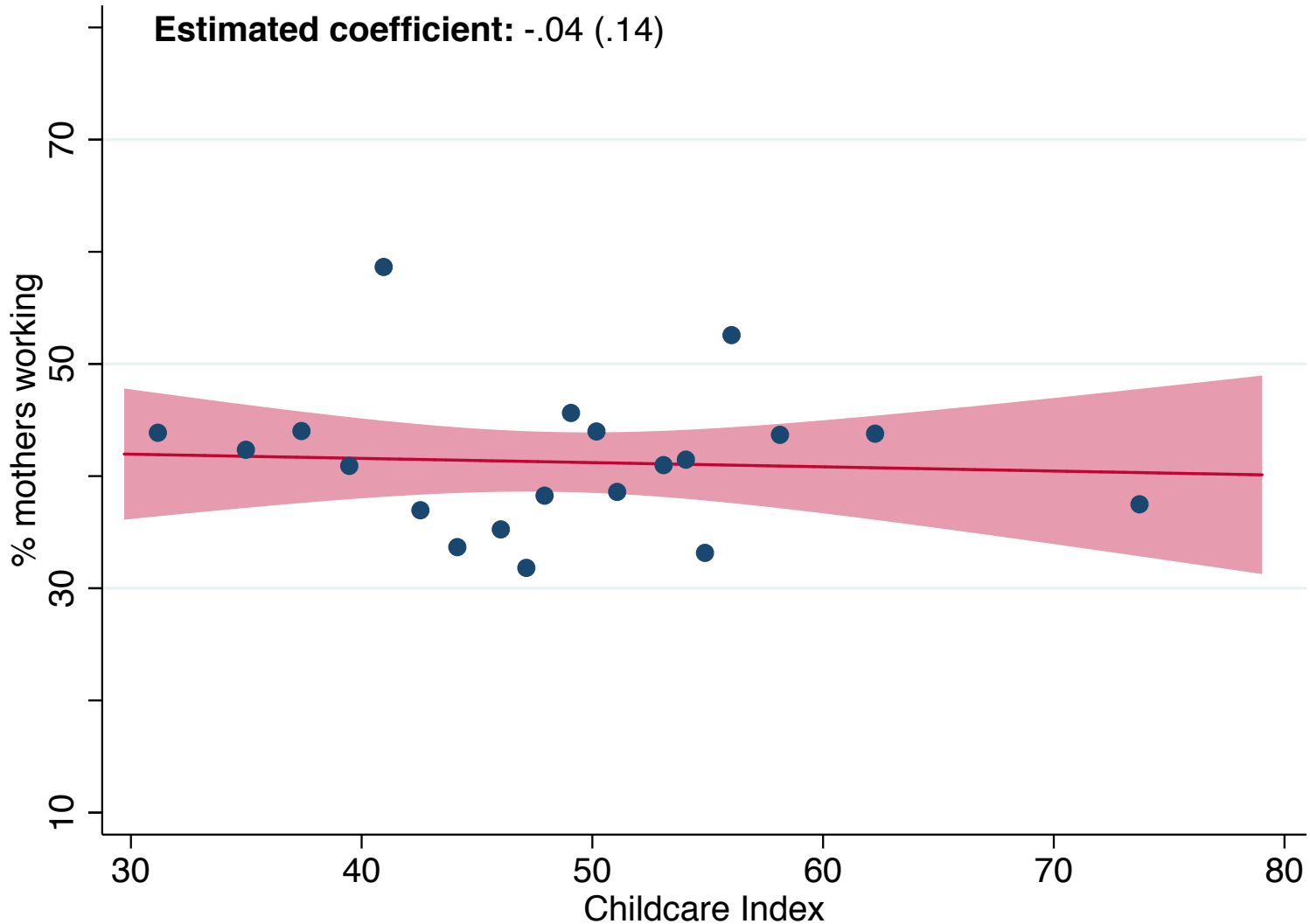
Correlation Btw Child Care Index & Take-Up

With Controls



Correlation Btw Child Care Index & Employment

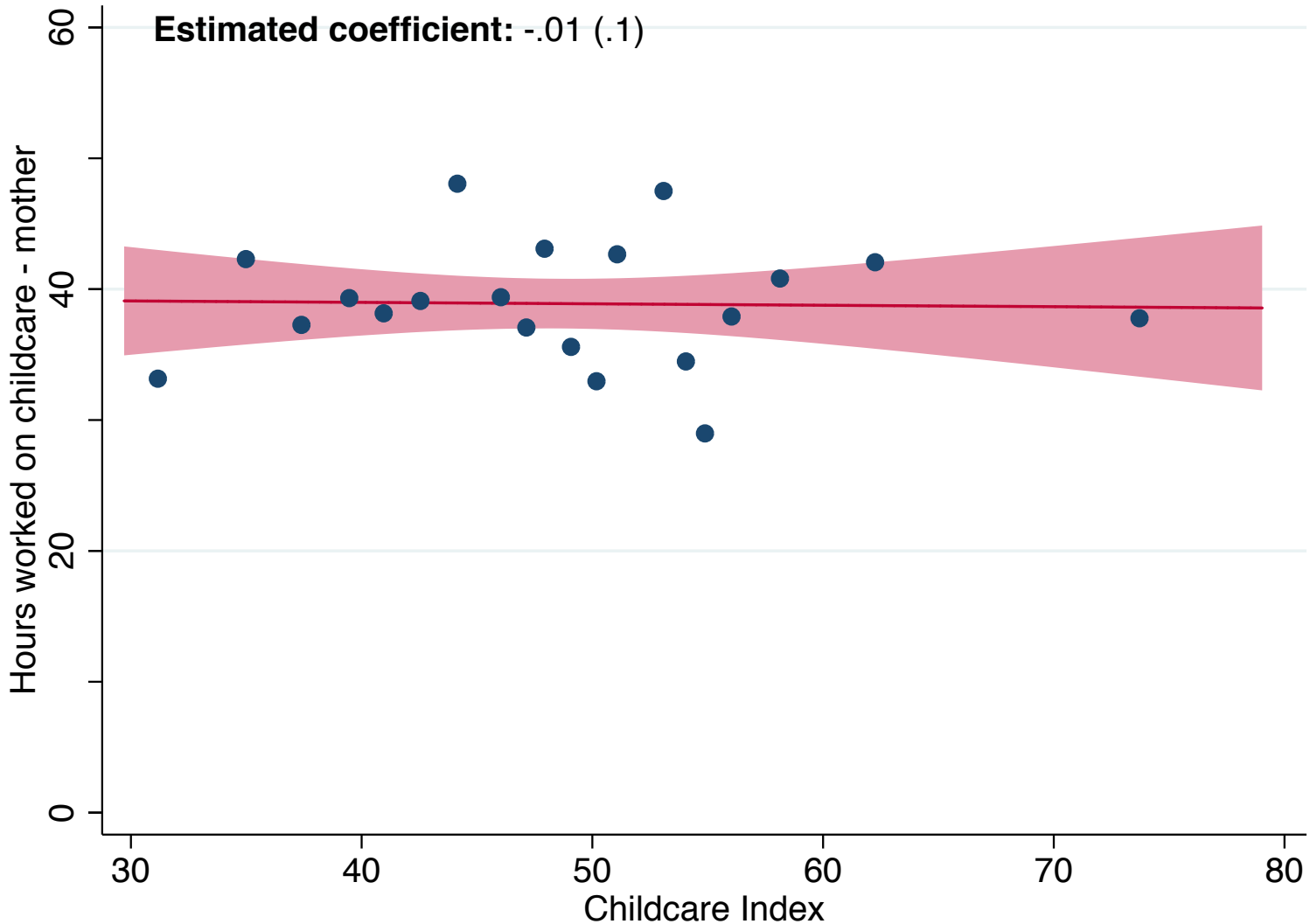
With Controls



No Controls

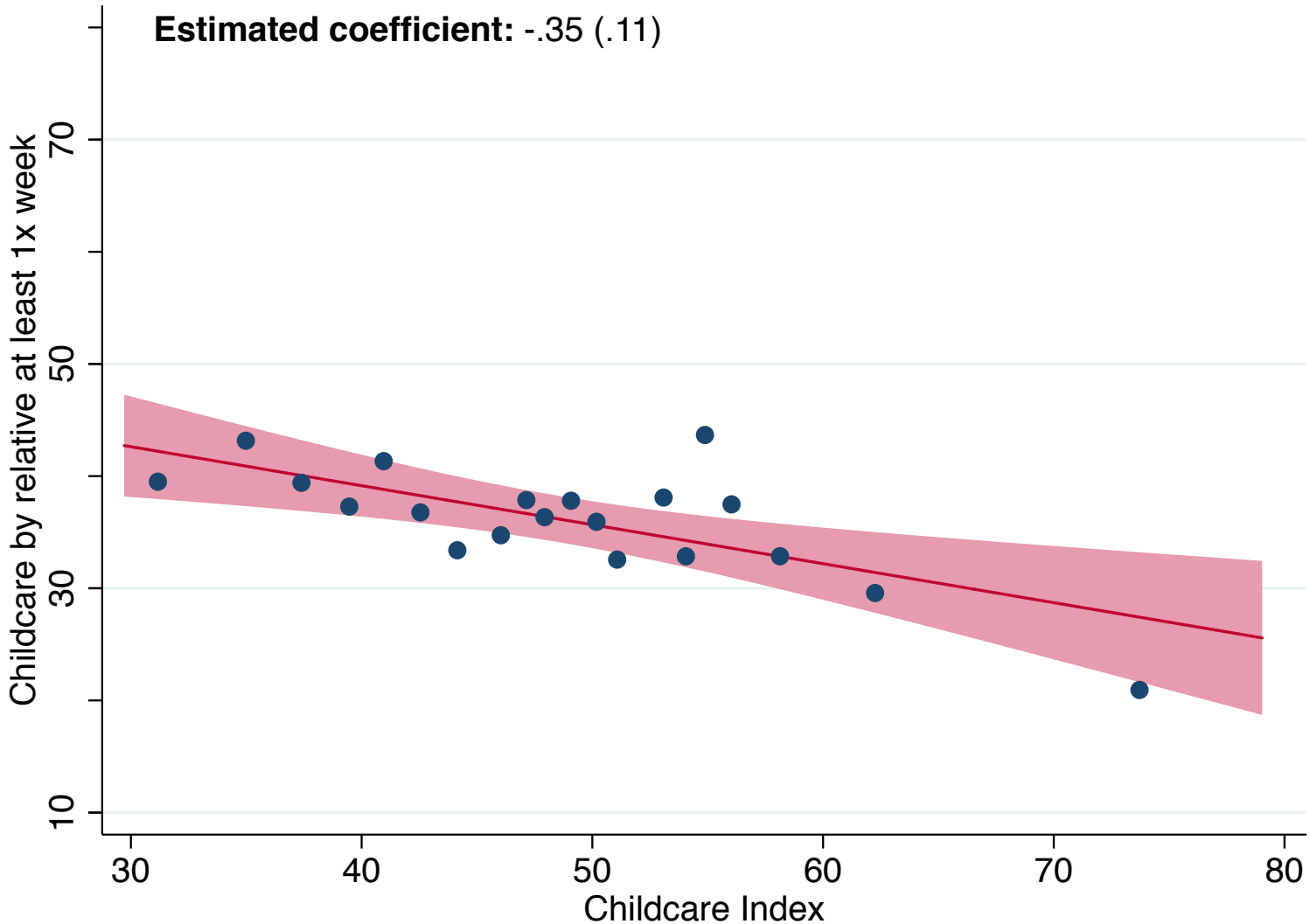
Correlation Btw Child Care Index & Maternal Care

With Controls



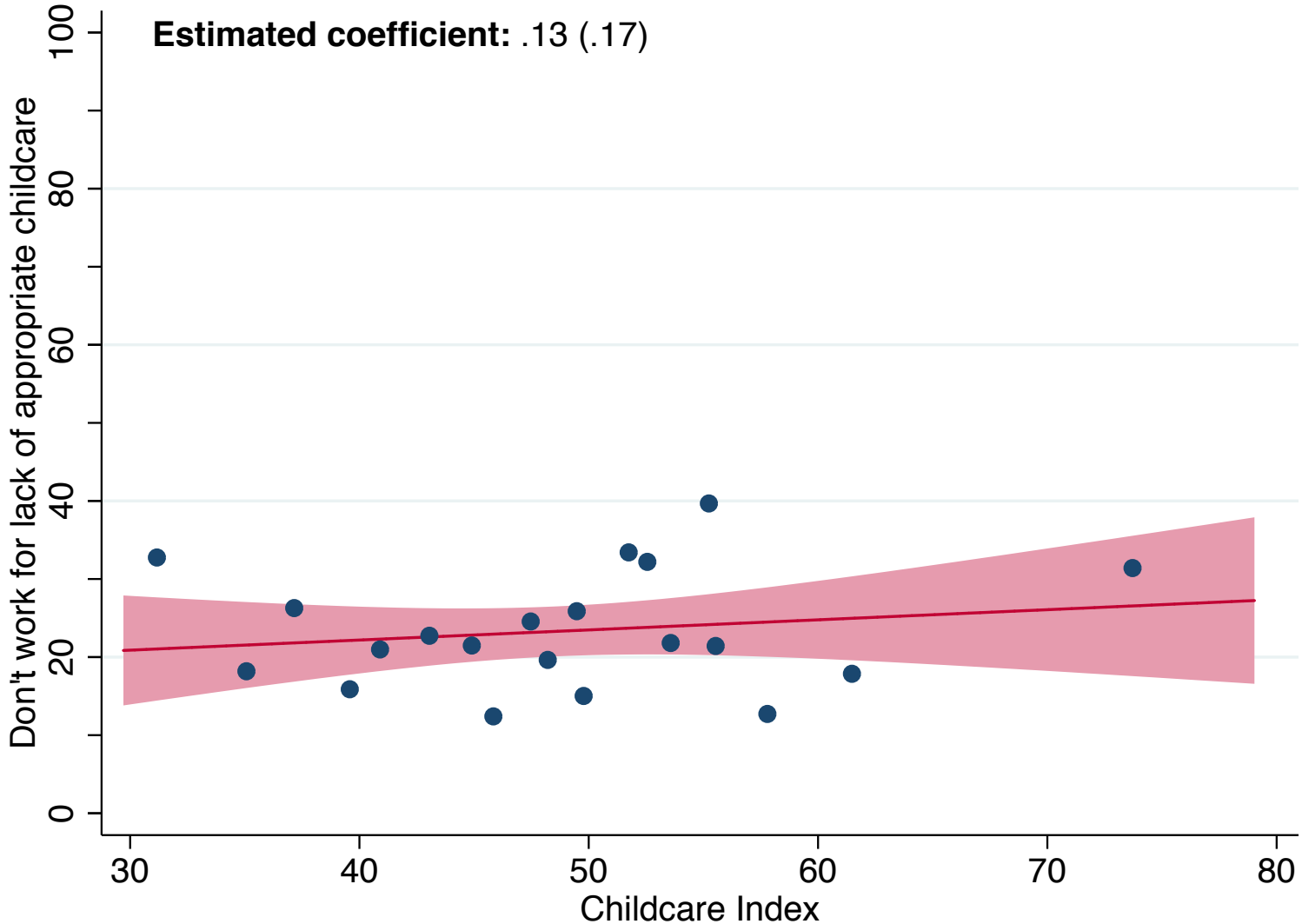
Correlation Btw Child Care Index & Alternative Care

With Controls



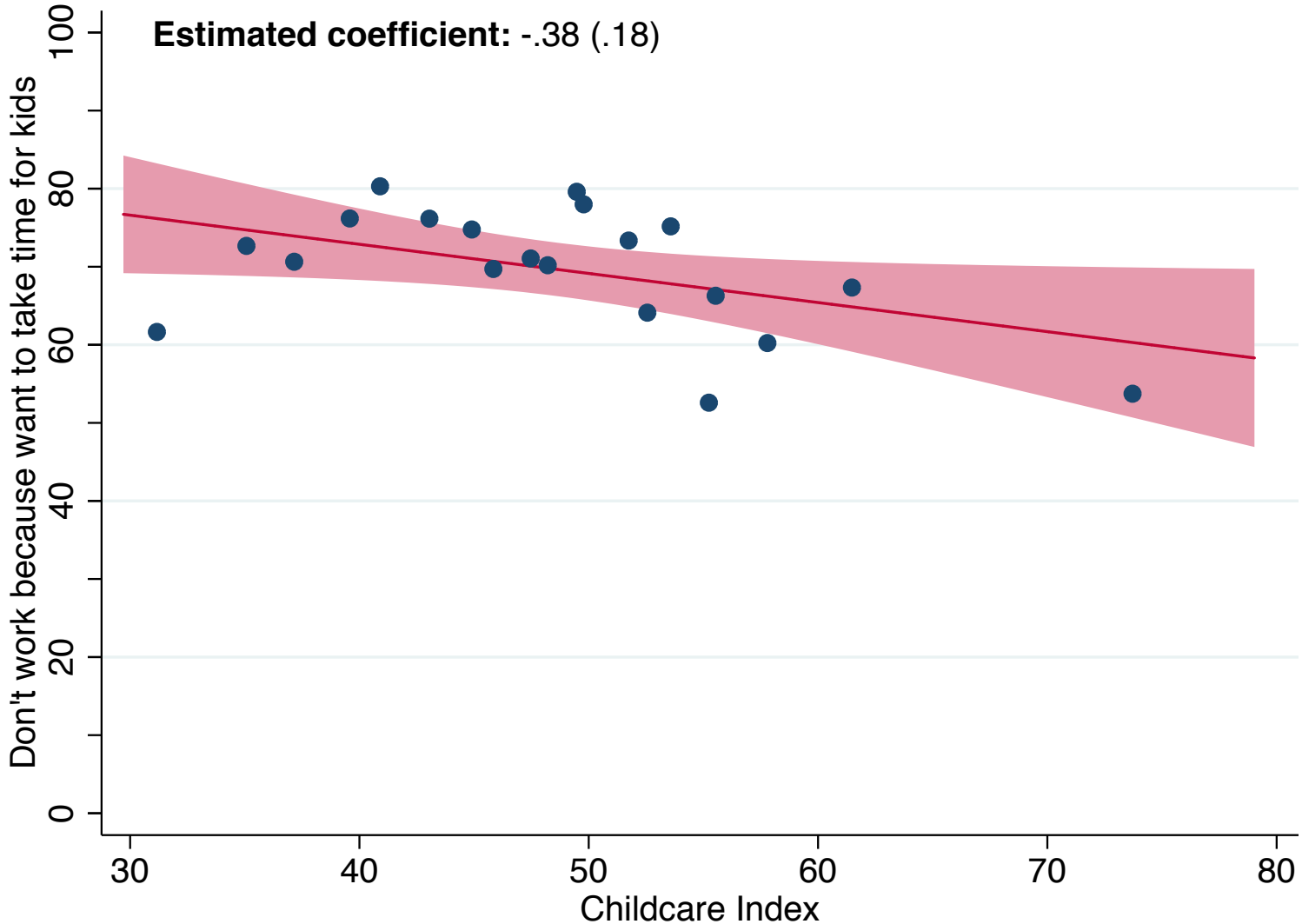
Correlation Btw Index & Child Care Constraints

Non-Working Mothers - With Controls



Correlation Btw Index & Preference for Maternal Care

Non-Working Mothers - With Controls



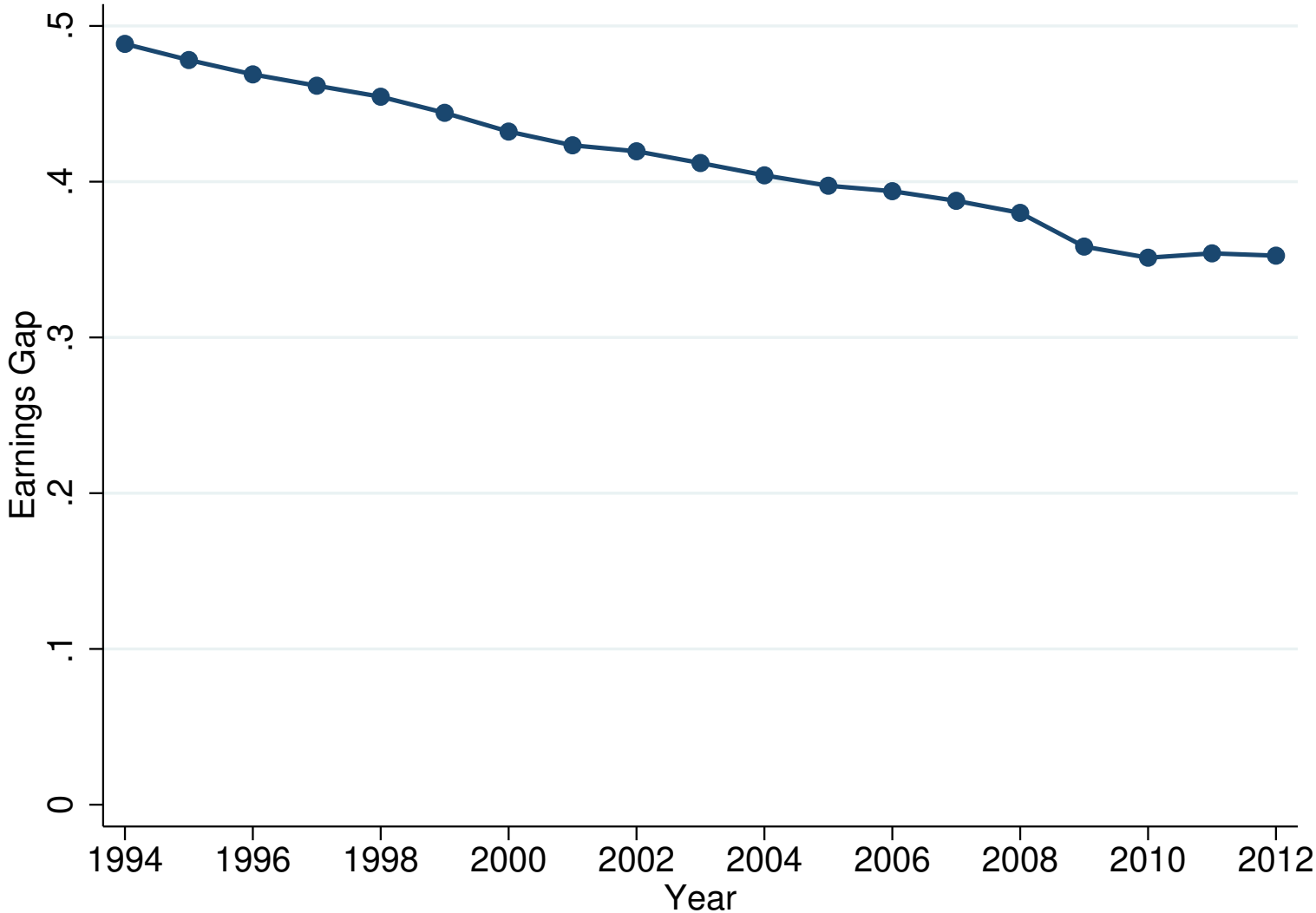
Conclusions

Gender Inequality: Limited Role for Policies?

- Considerable interest in ability of early childhood policies to shape dynamics of gender inequality
- We study:
  - Effects of key bundle of early childhood policies
  - On full dynamics of relative earnings within HH
  - In context of large gender inequality & child penalties
- Family policy has had little effect on gender inequality
  - Small short run negative effect of PL. No long run effects
  - Insignficant effect of child care access
  - No interacted effects
- Why is more child care not conducive to more labor supply?
  - Role of choices seems important Life Satisfaction
  - Role of norms in explaining these choices Corr. Penalty vs Norm

Additional Figures

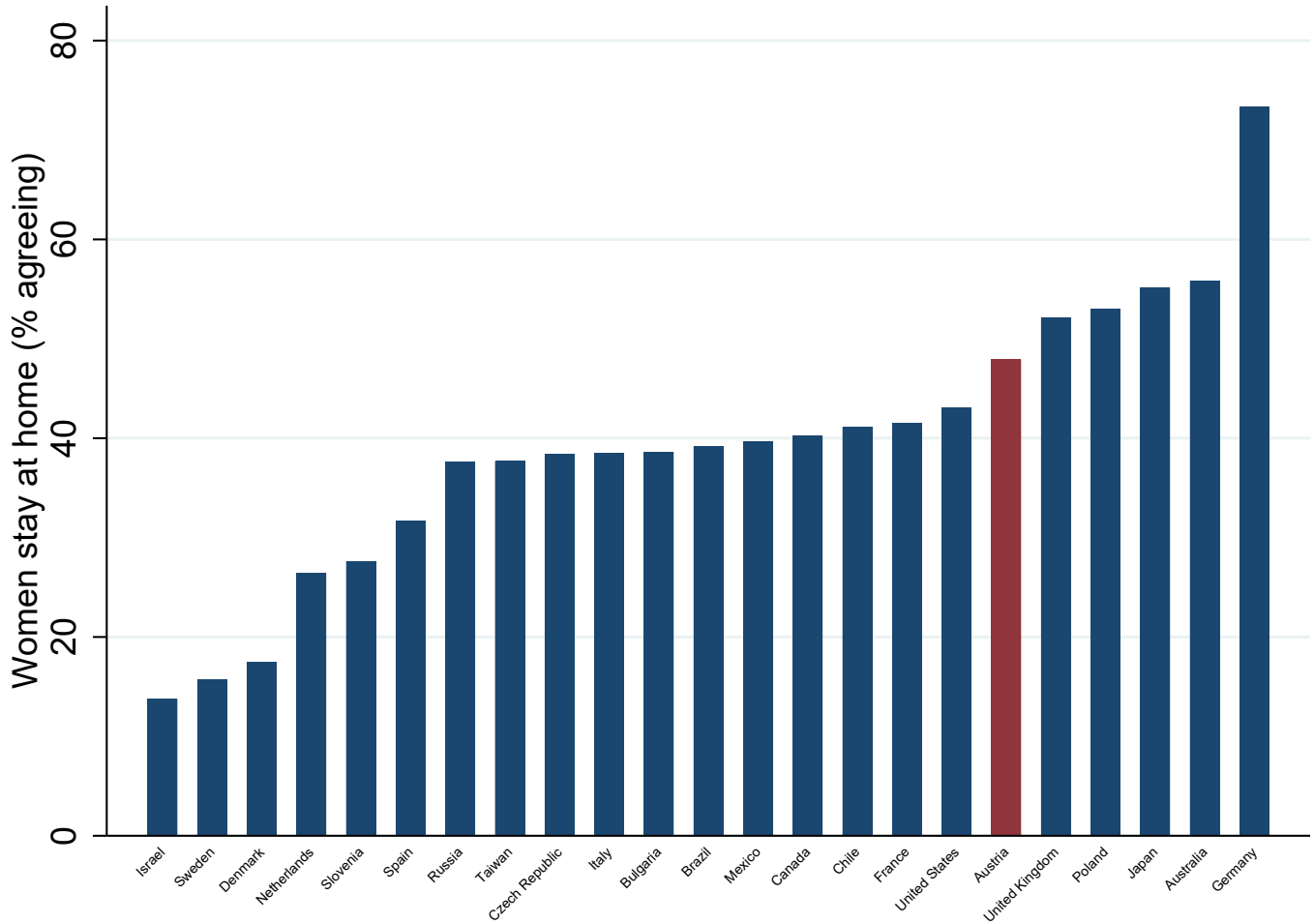
Total Gender Gap in Earnings - Austria (1994-2012)



Back

“A Woman Should Stay Home When She Has a Child Under School Age”?

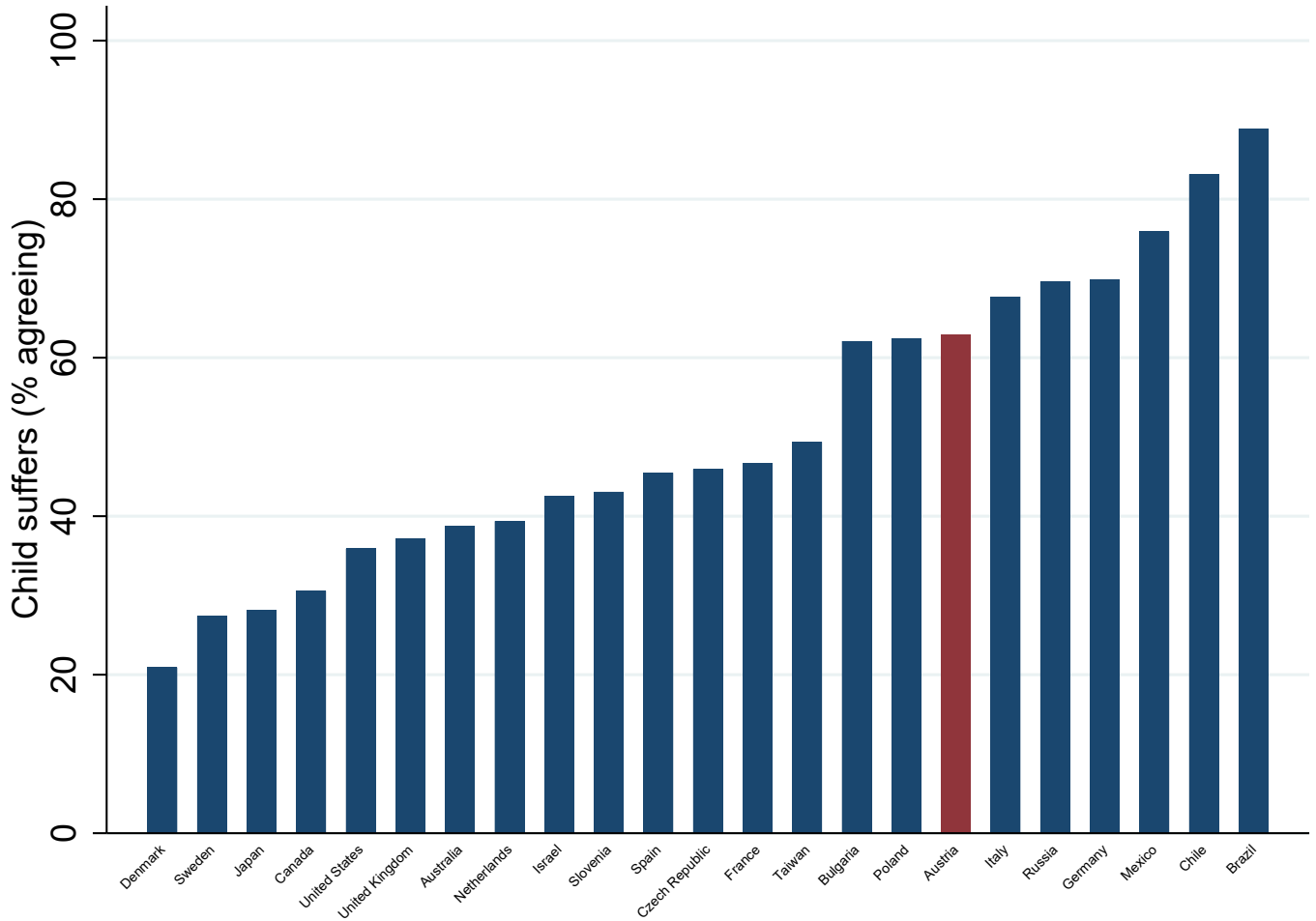
Do You Agree With the Statement



Back

“When a Mother Works for Pay, Her Children Suffer”?

Do You Agree With the Statement



Back

Event Study Approach

- Consider men and women who have their first child at event time 0
- For men and women ($g = m, w$), we regress

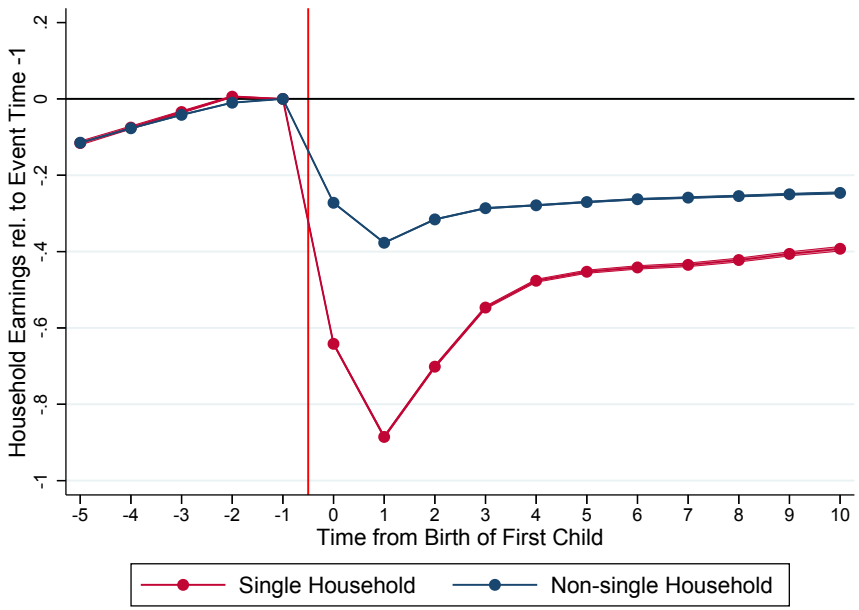
$$Y_{ist}^{g} = \sum_{j \neq -1} \alpha_j^g \cdot \text{EVENT}_{ij} + \text{age/year dummies}$$

  where Y_{ist}^{g} is the outcome for individual i in year s at event time t, and event coefficients α_j^g measure impact relative to event time -1
- We show $P_t^g = \hat{\alpha}_t^g / E\left[\tilde{Y}_{ist}^{g} \mid t\right]$ over time where $\tilde{Y}_{ist}^{g}$ is the predicted outcome when omitting the event dummies

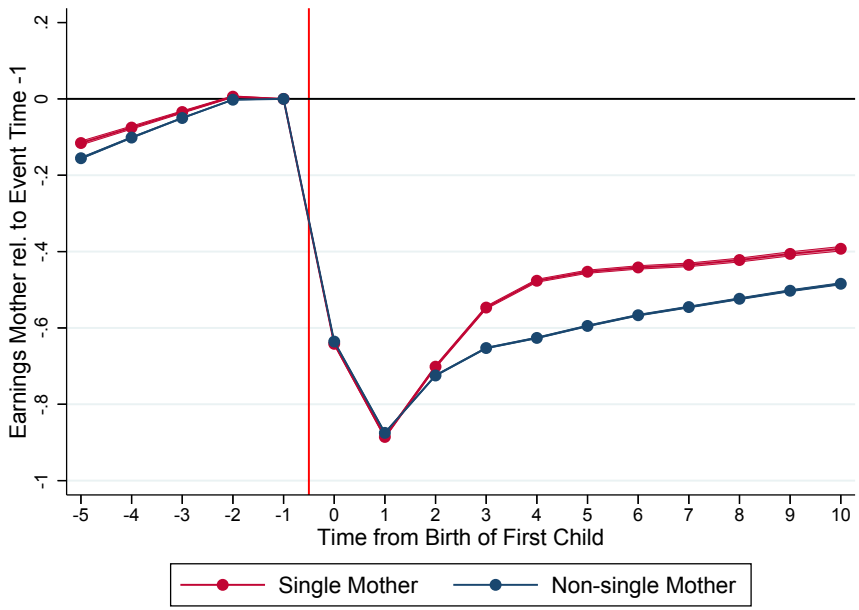
Back

Child Penalty by Family Structure

Household Level

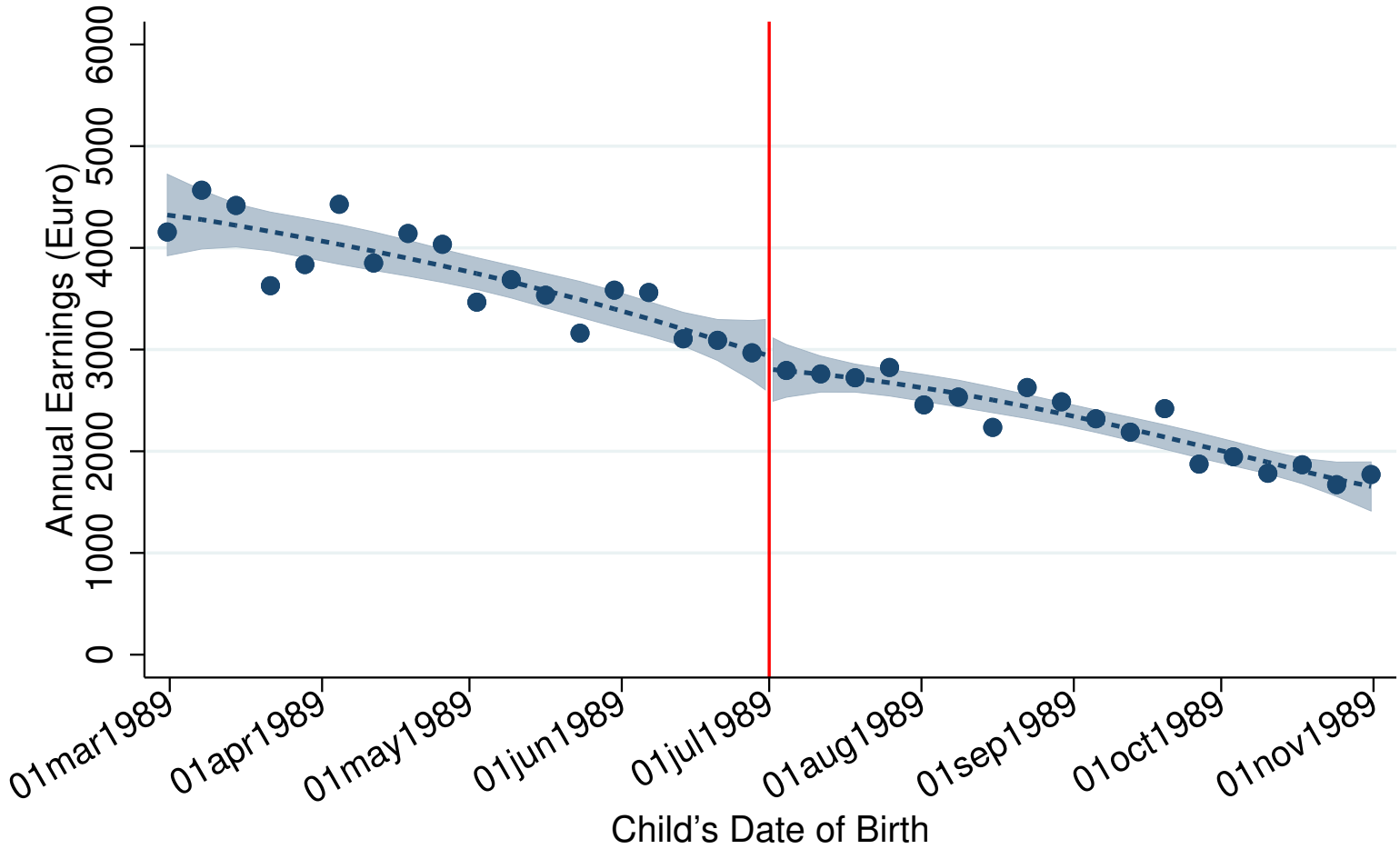


Individual Level



Back

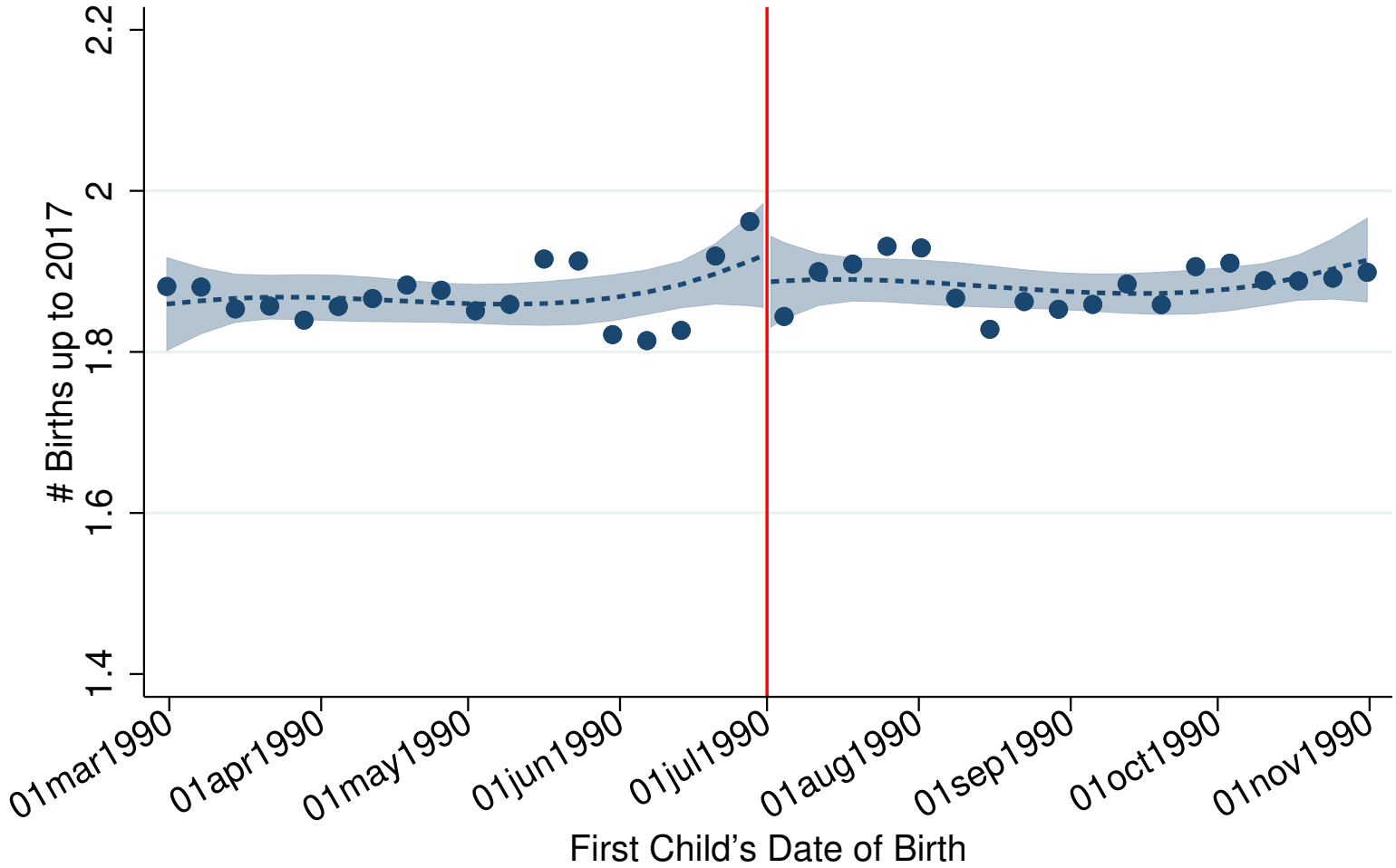
1990 Reform: 1989 Placebo Births



RD Estimate: −129.8 (245.8)
Div. by Counterfactual: −0.0090 (0.0171)

Back

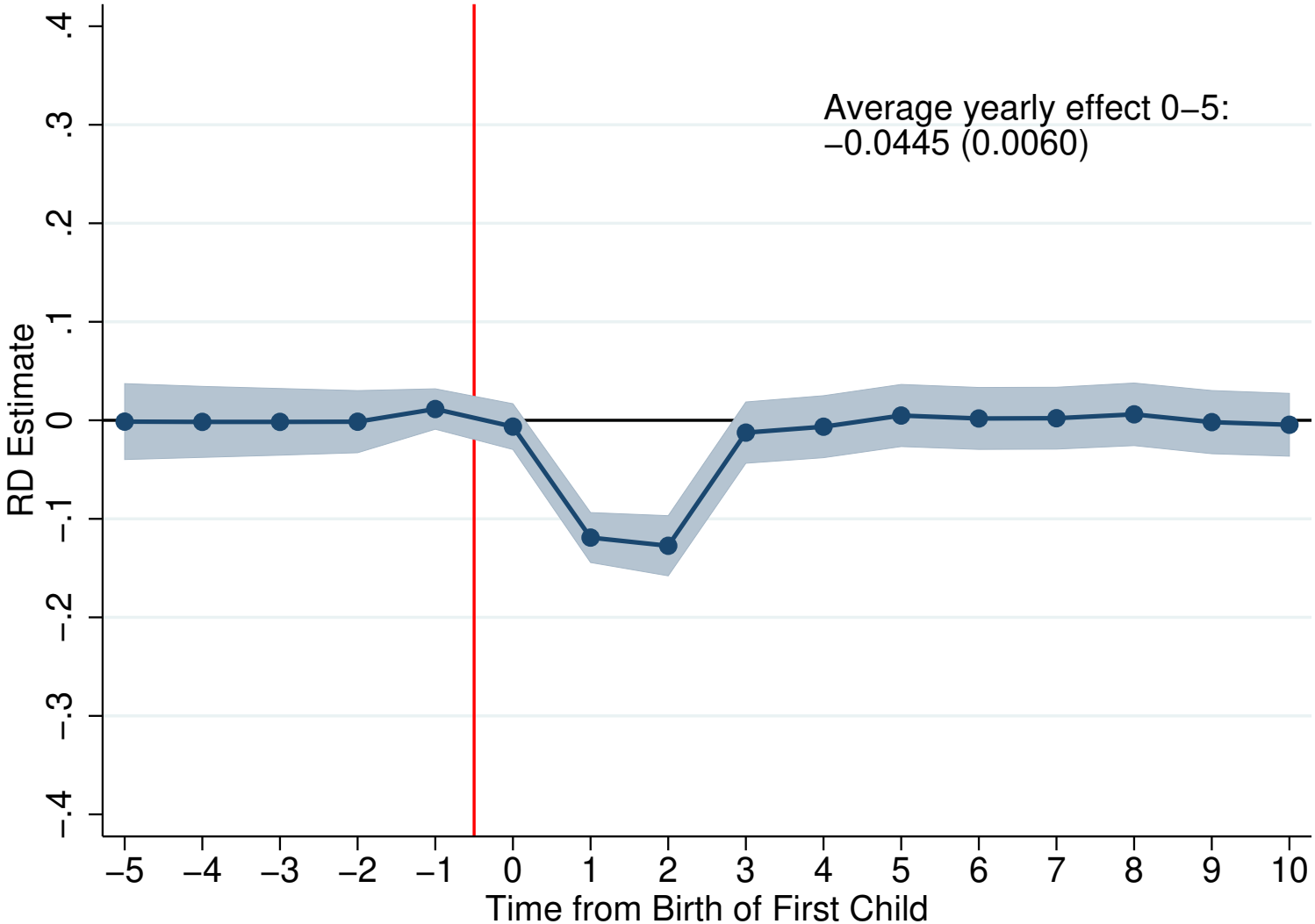
1990 Reform: Subsequent Fertility



RD Estimate: −0.0353 (0.0452)

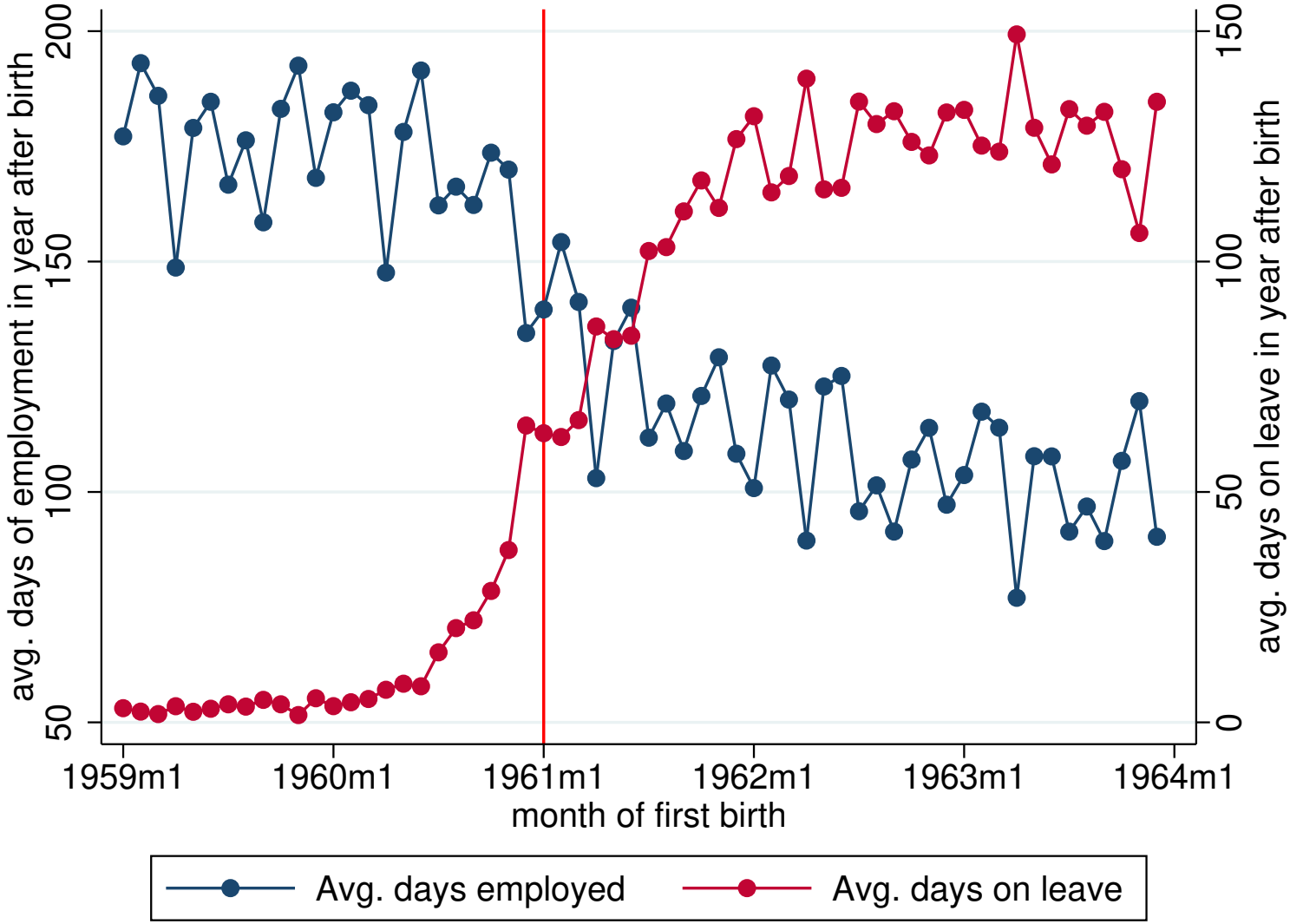
Back

1990 Reform: Dynamic Effects - 1 Child Only

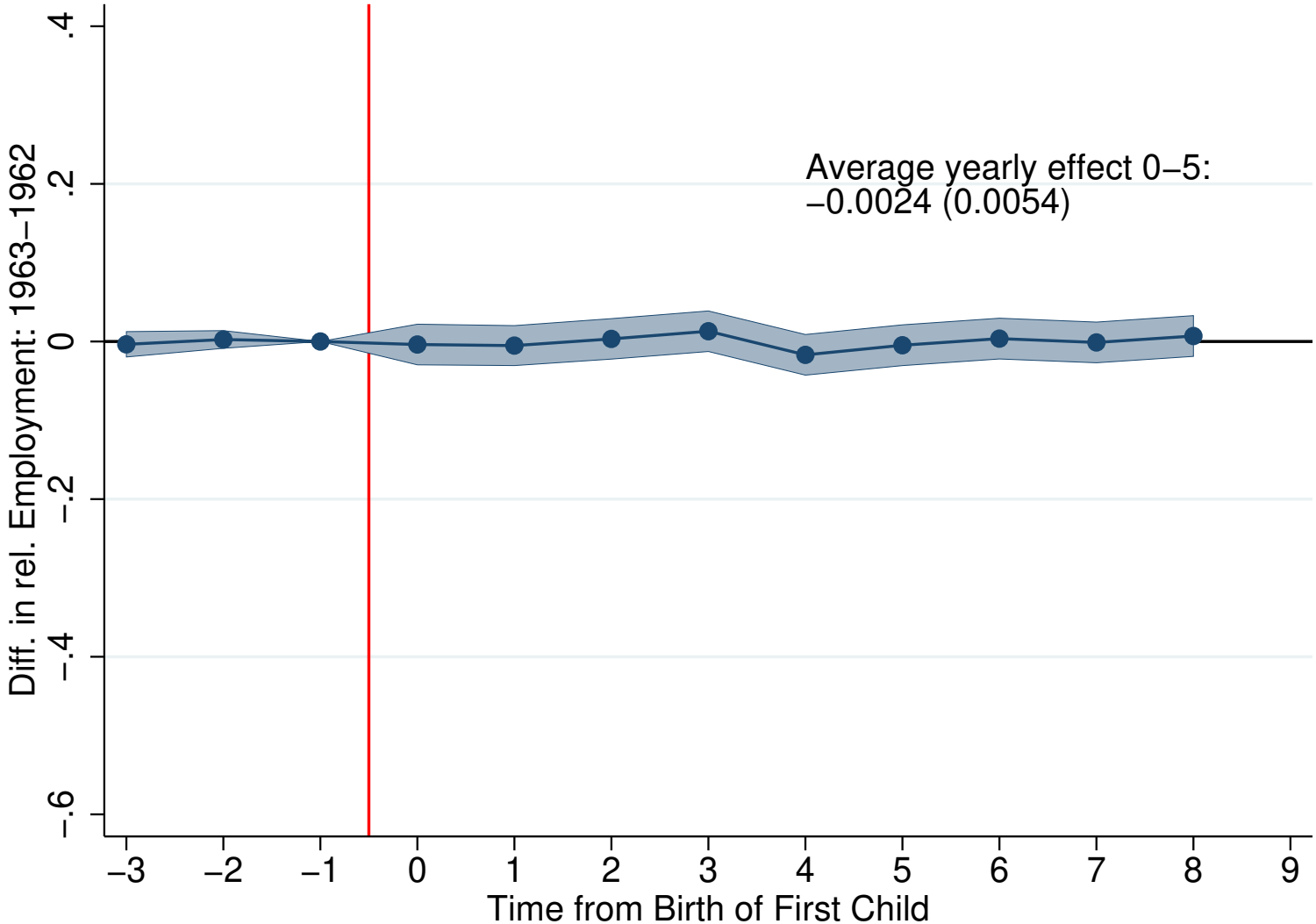


Back

1961 Reform: Take-Up

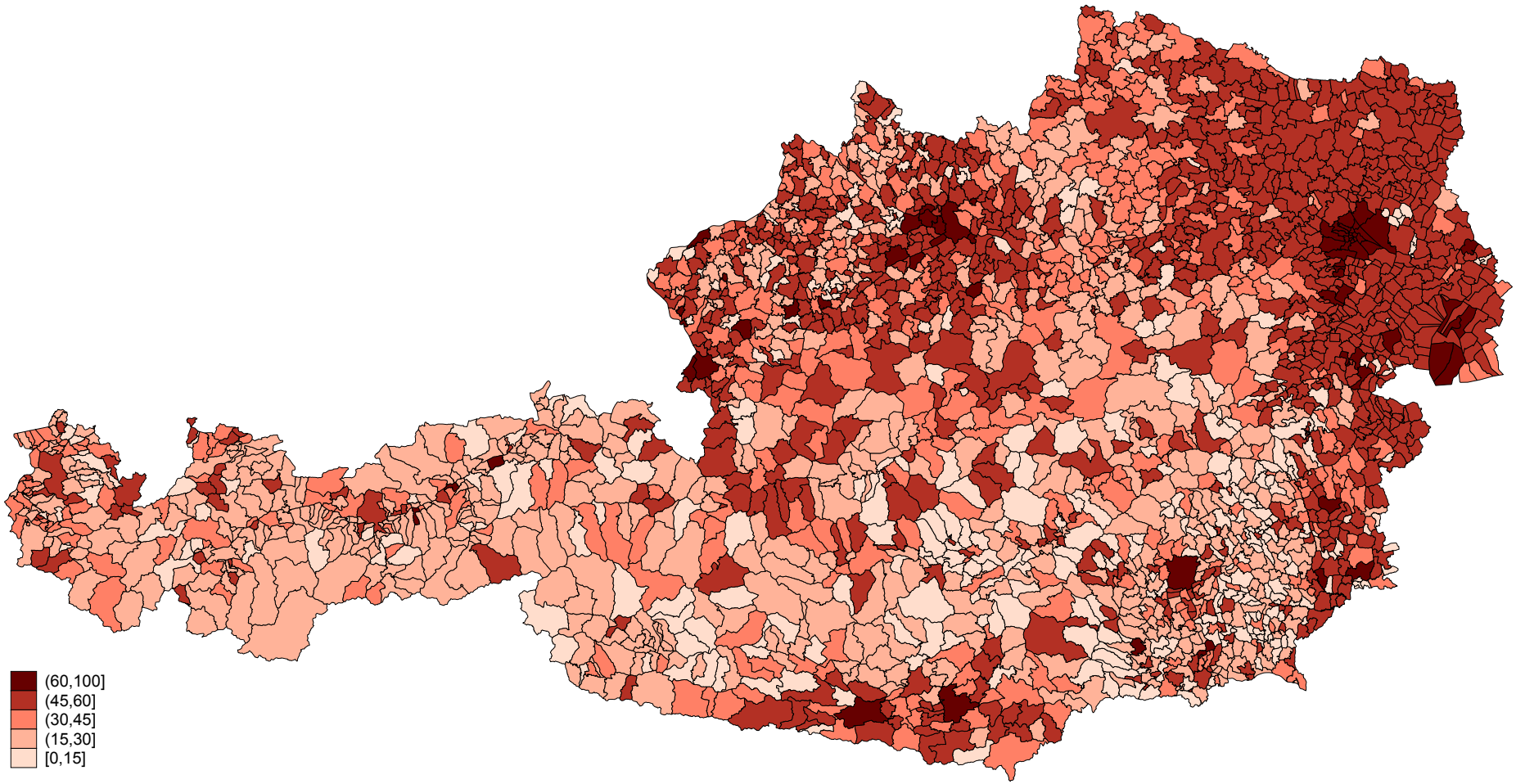


1961 Reform: Robustness to Trends

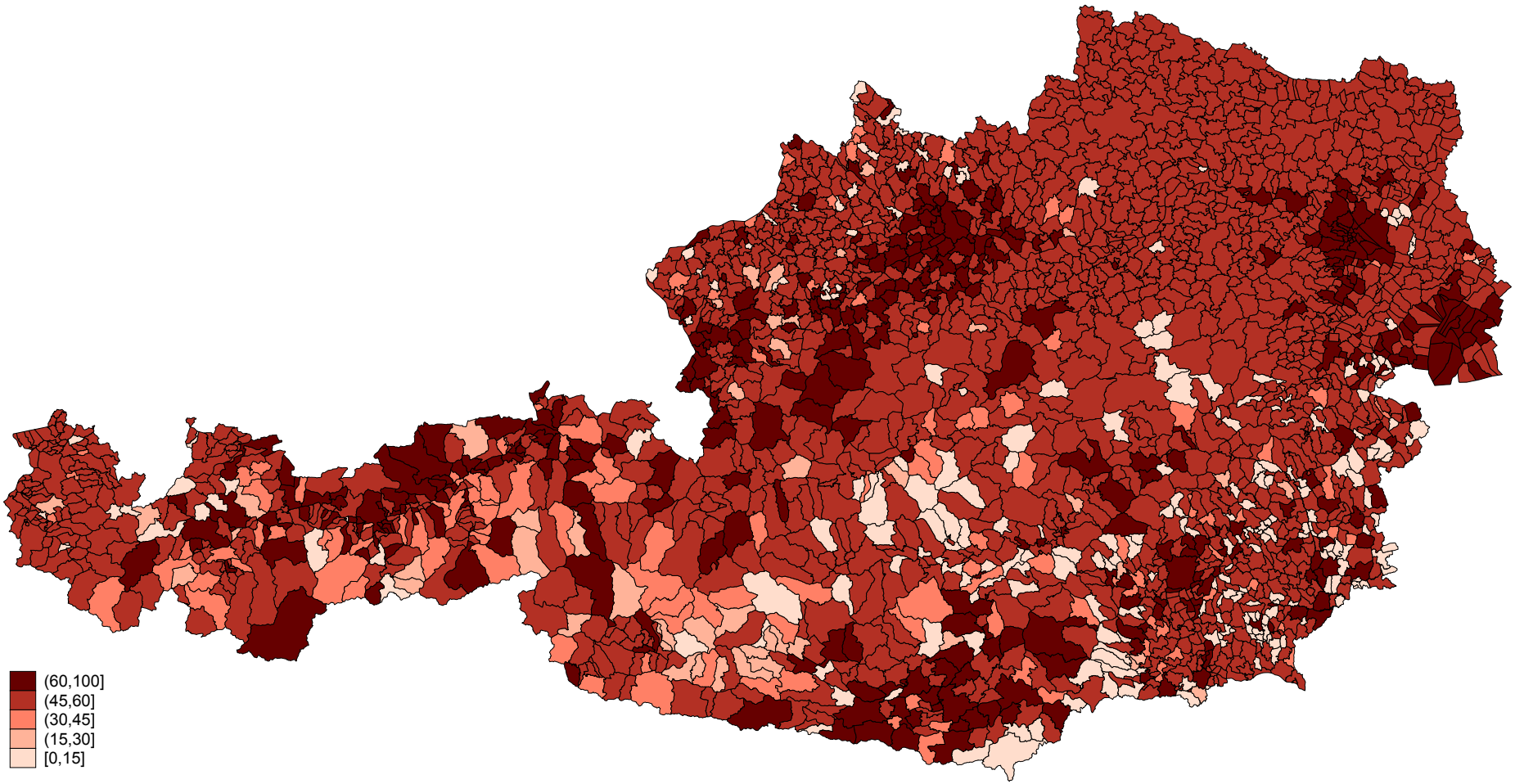


Back

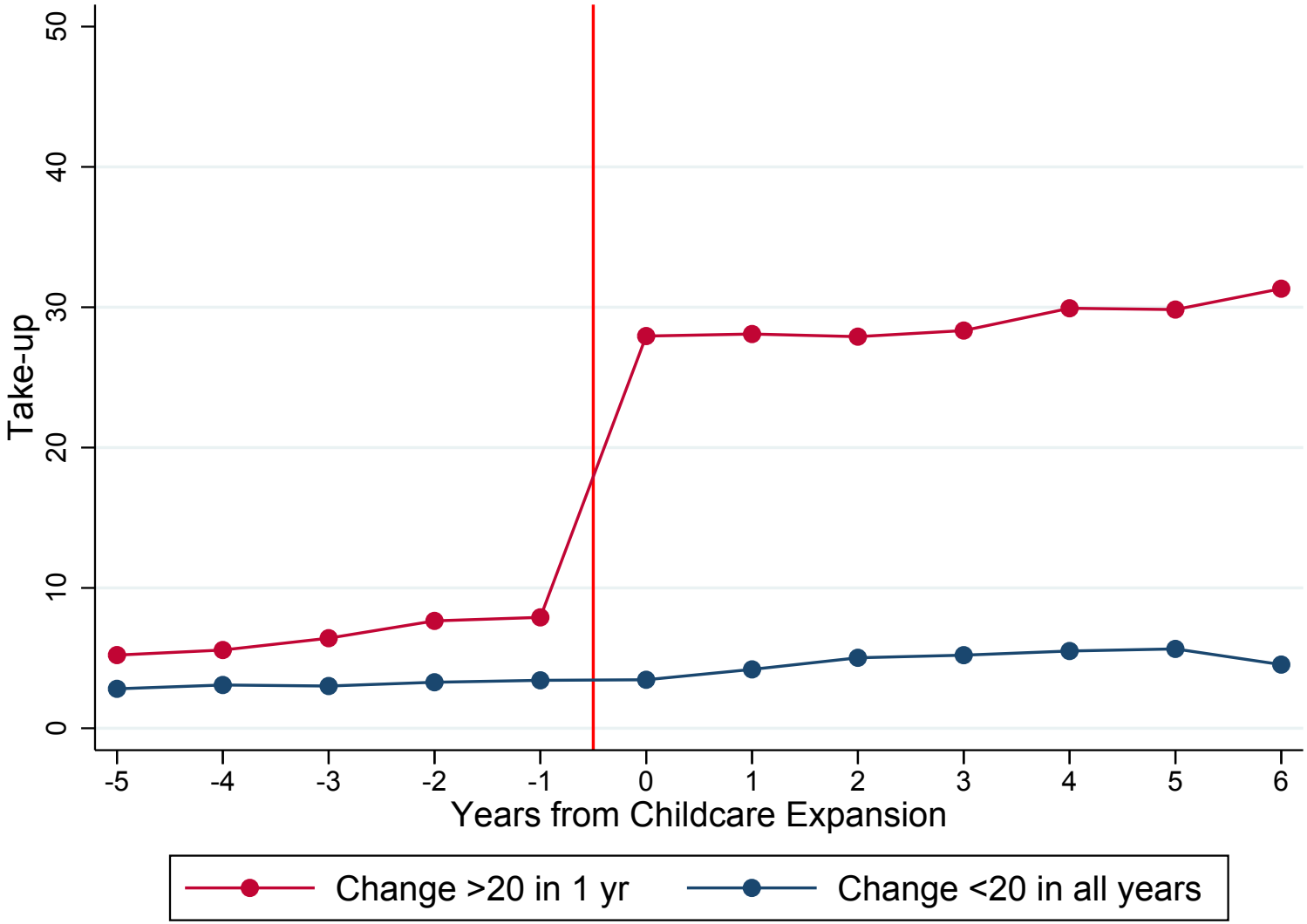
Spatial pattern of index 1-5 - 2000



Spatial pattern of index 1-5 - 2010

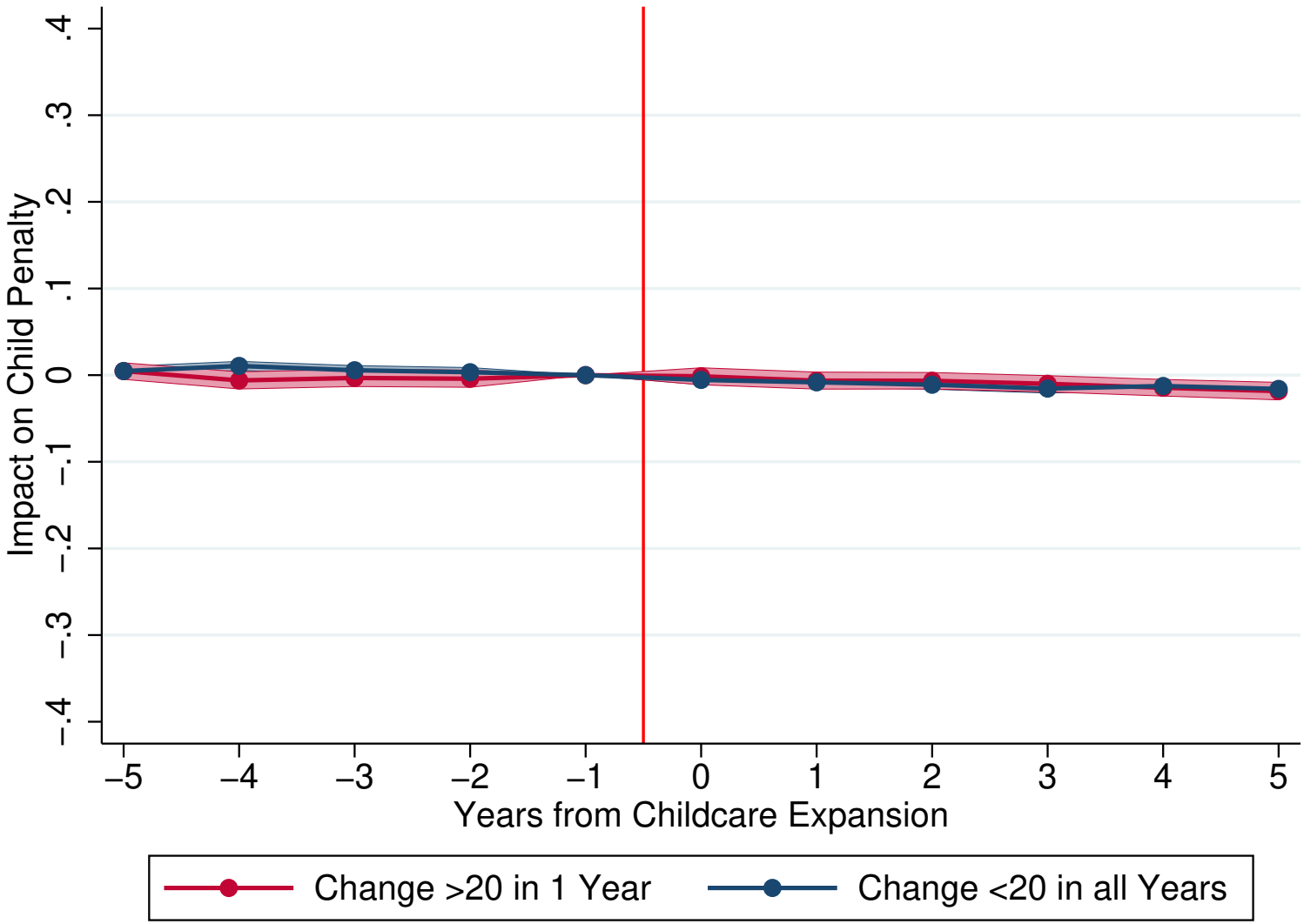


Event study: Index 1-2, take up

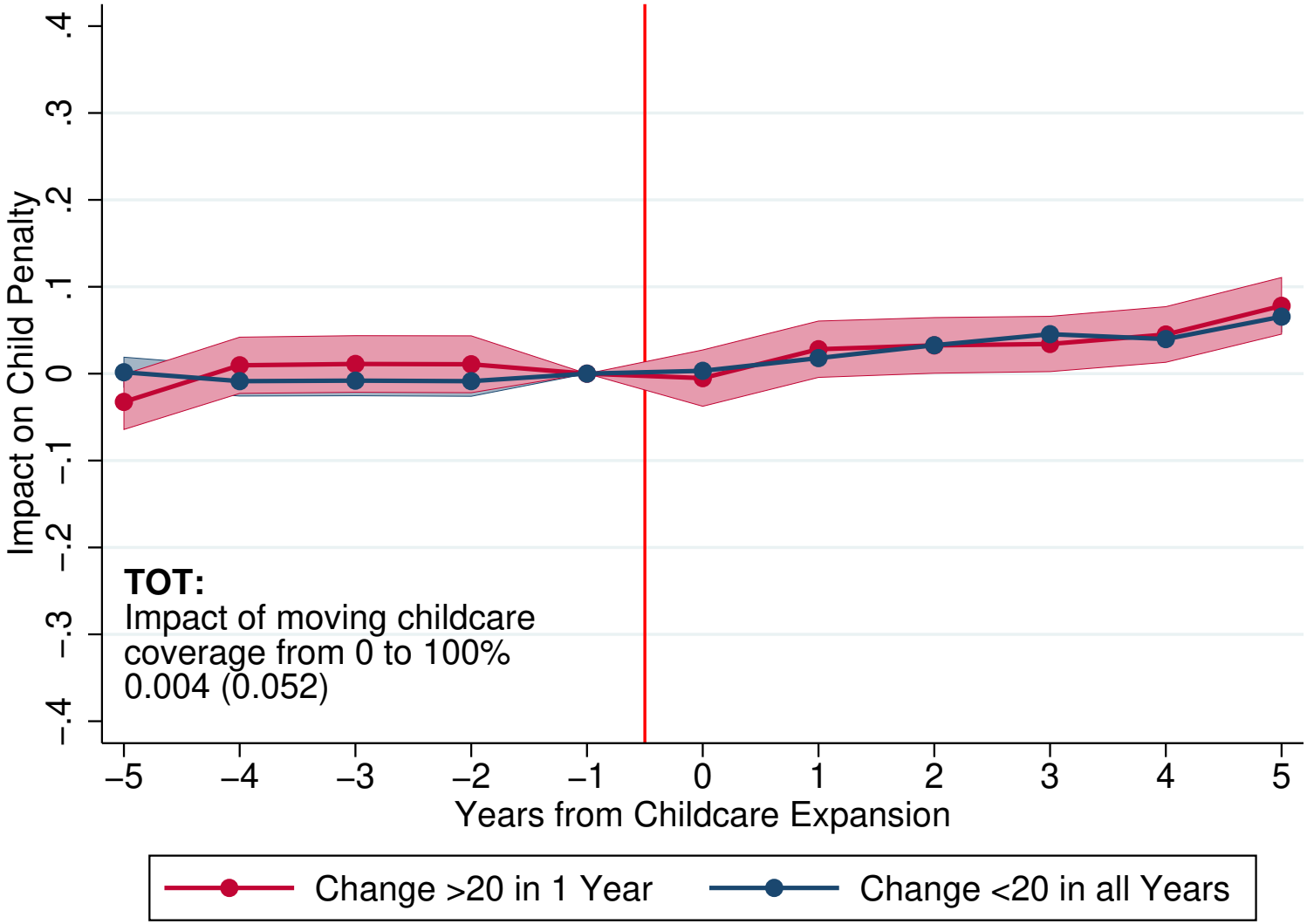


Back

Event study: Index 1-2 employment placebo (1 year before event)

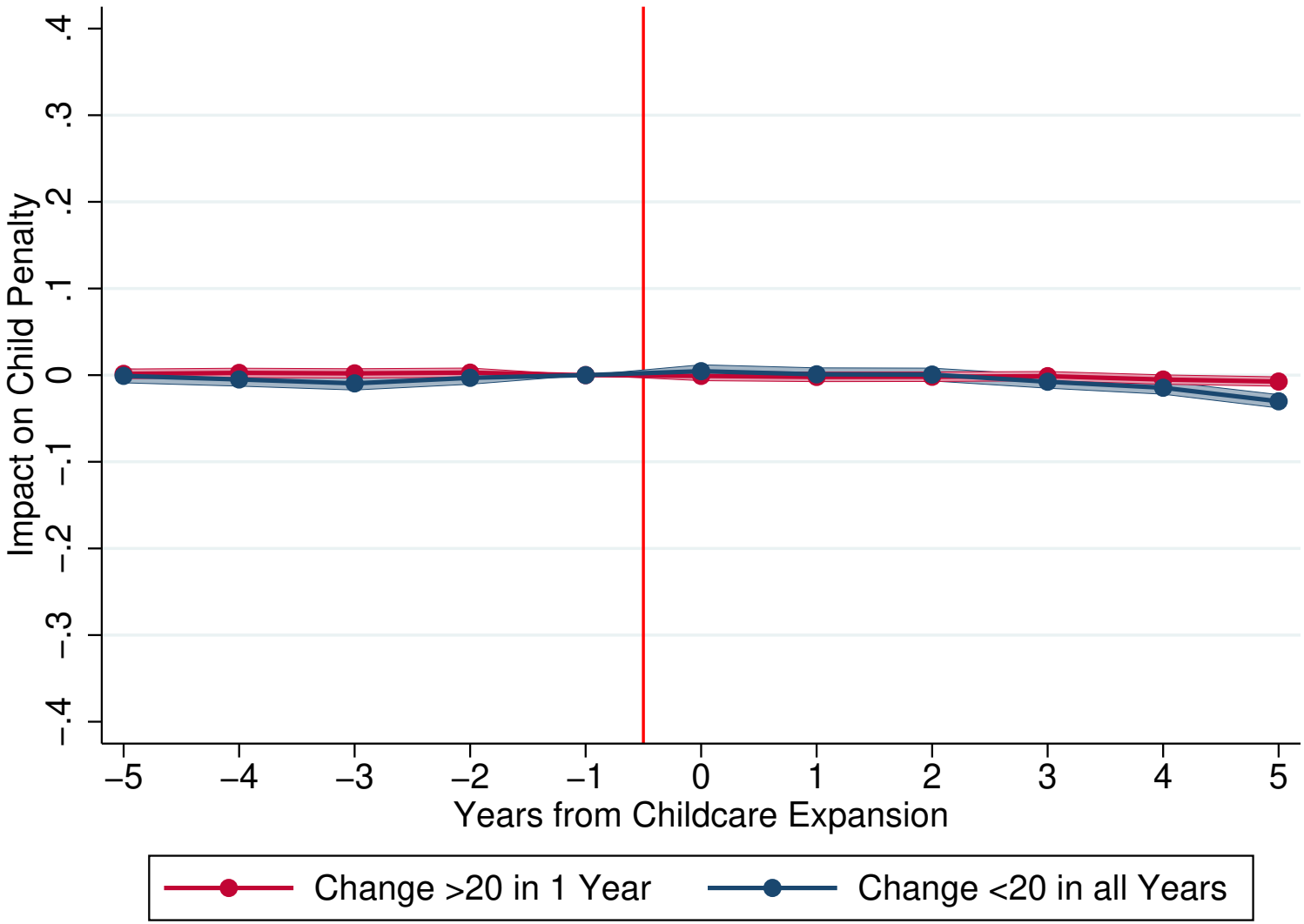


Event study: Index 1-2 cumulative employment 1-2

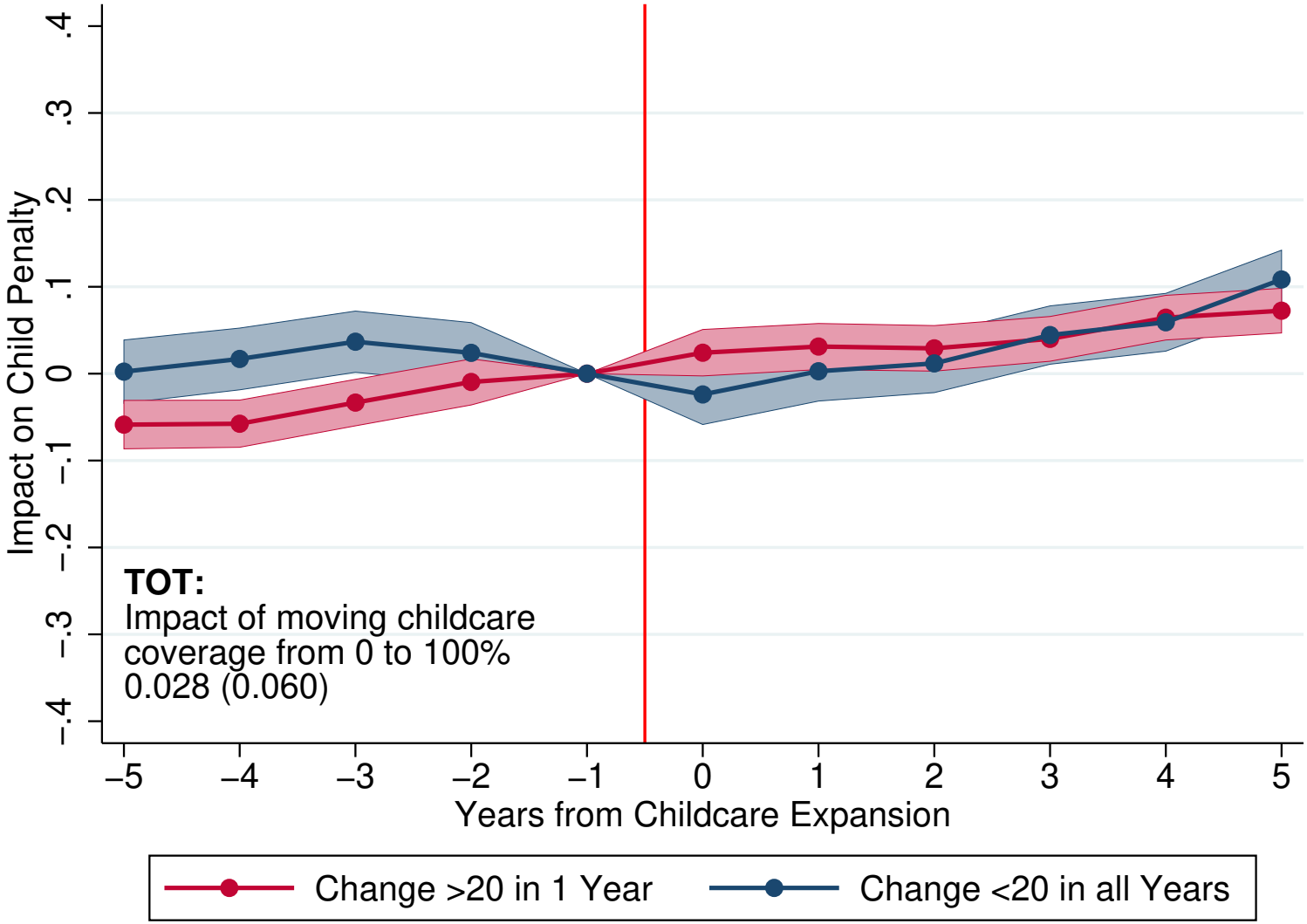


Back

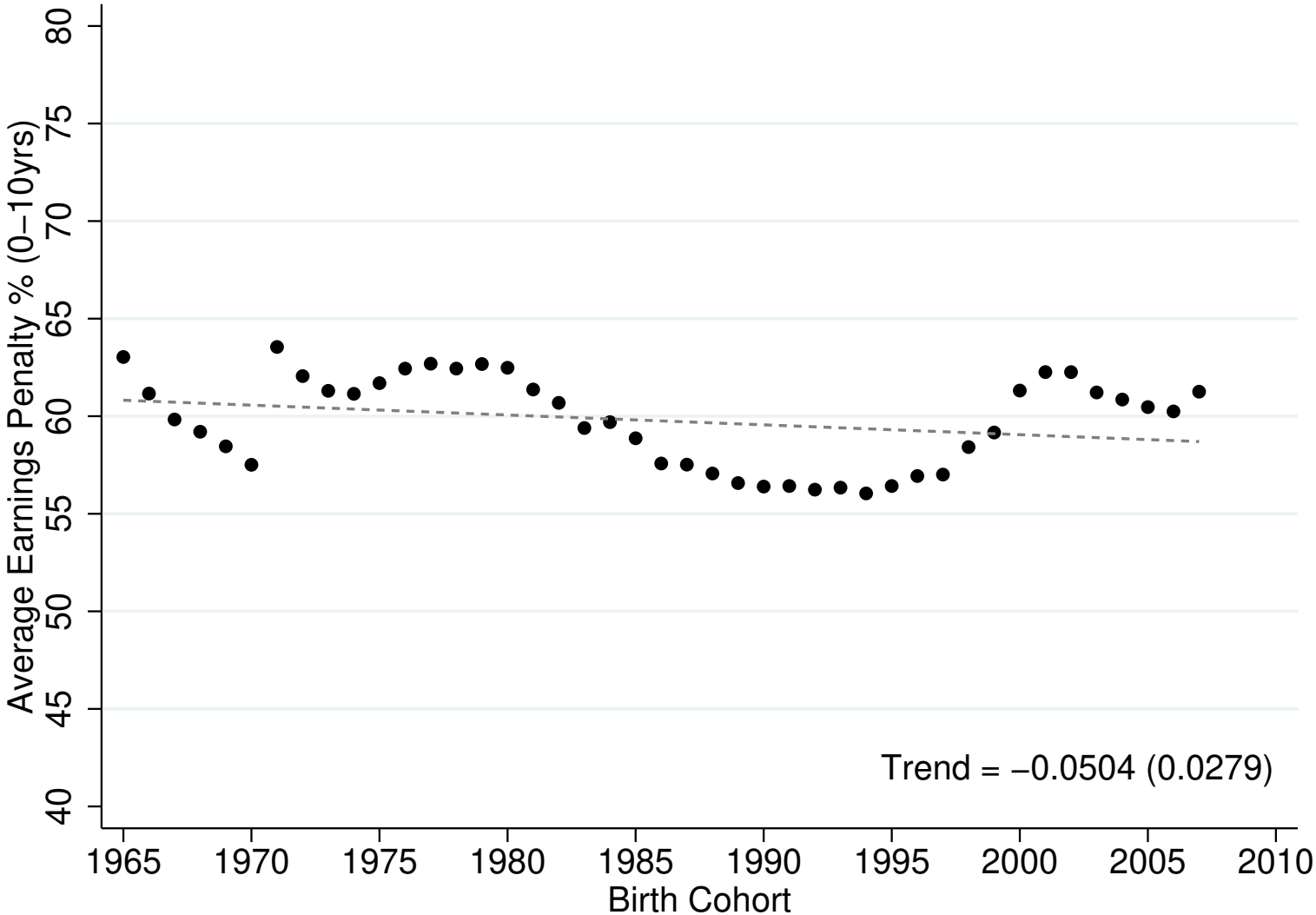
Event study: Index 3-5 employment placebo (1 year before event)



Event study: Index 3-5 cumulative employment 3-5

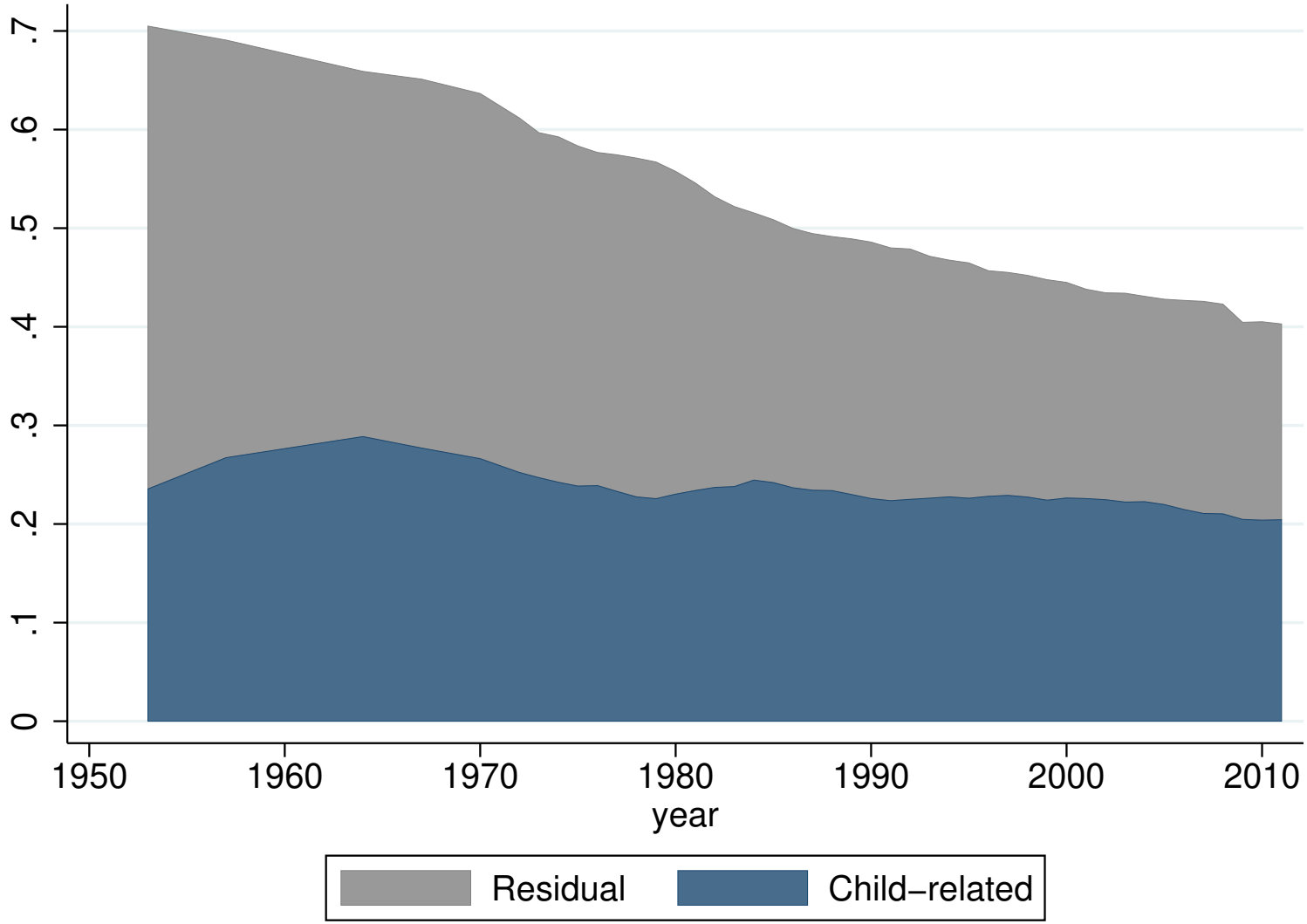


Child Penalty by 1st Birth Cohort 1965-2008



Back

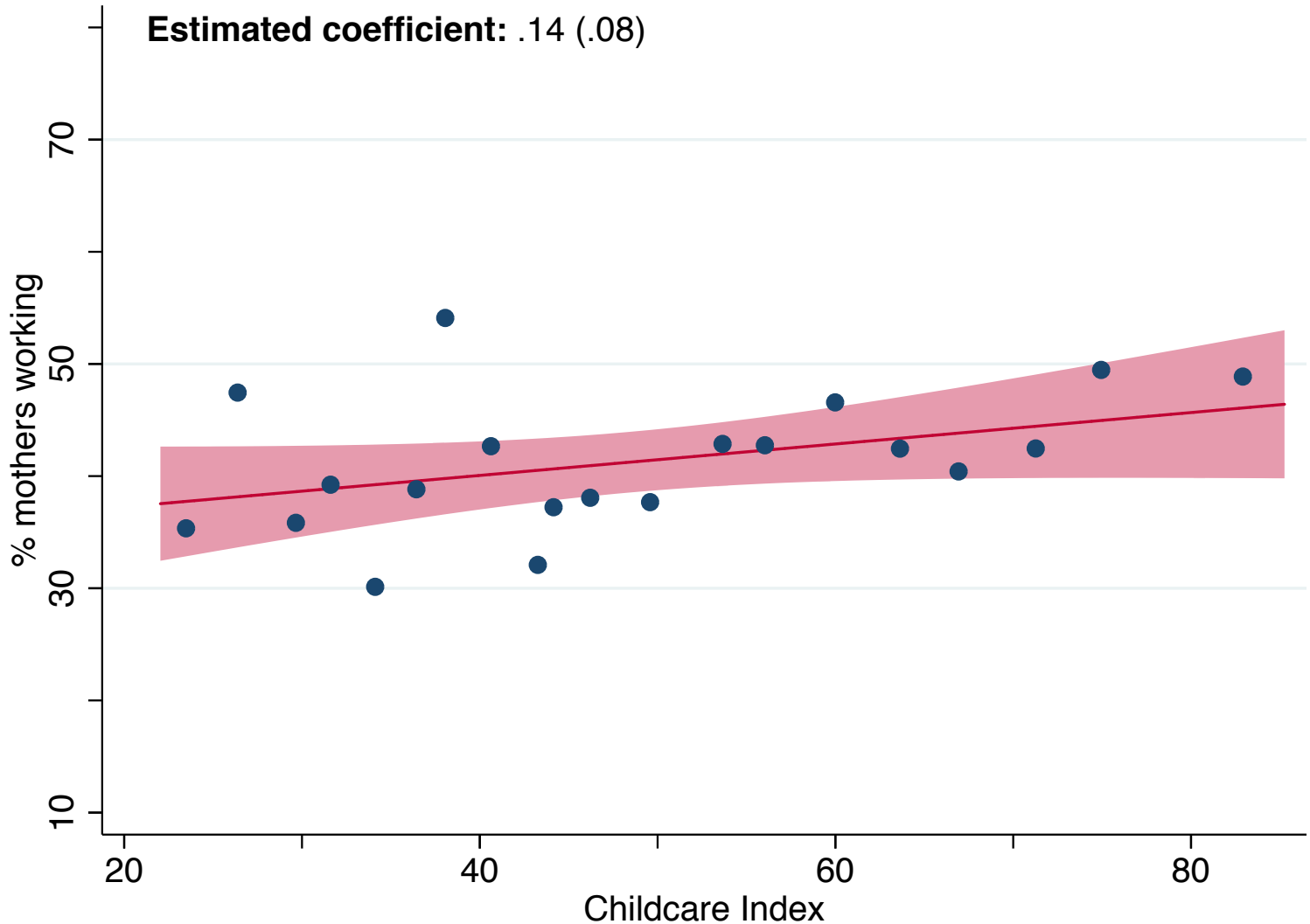
Gender Gap in Earnings 1955-2012



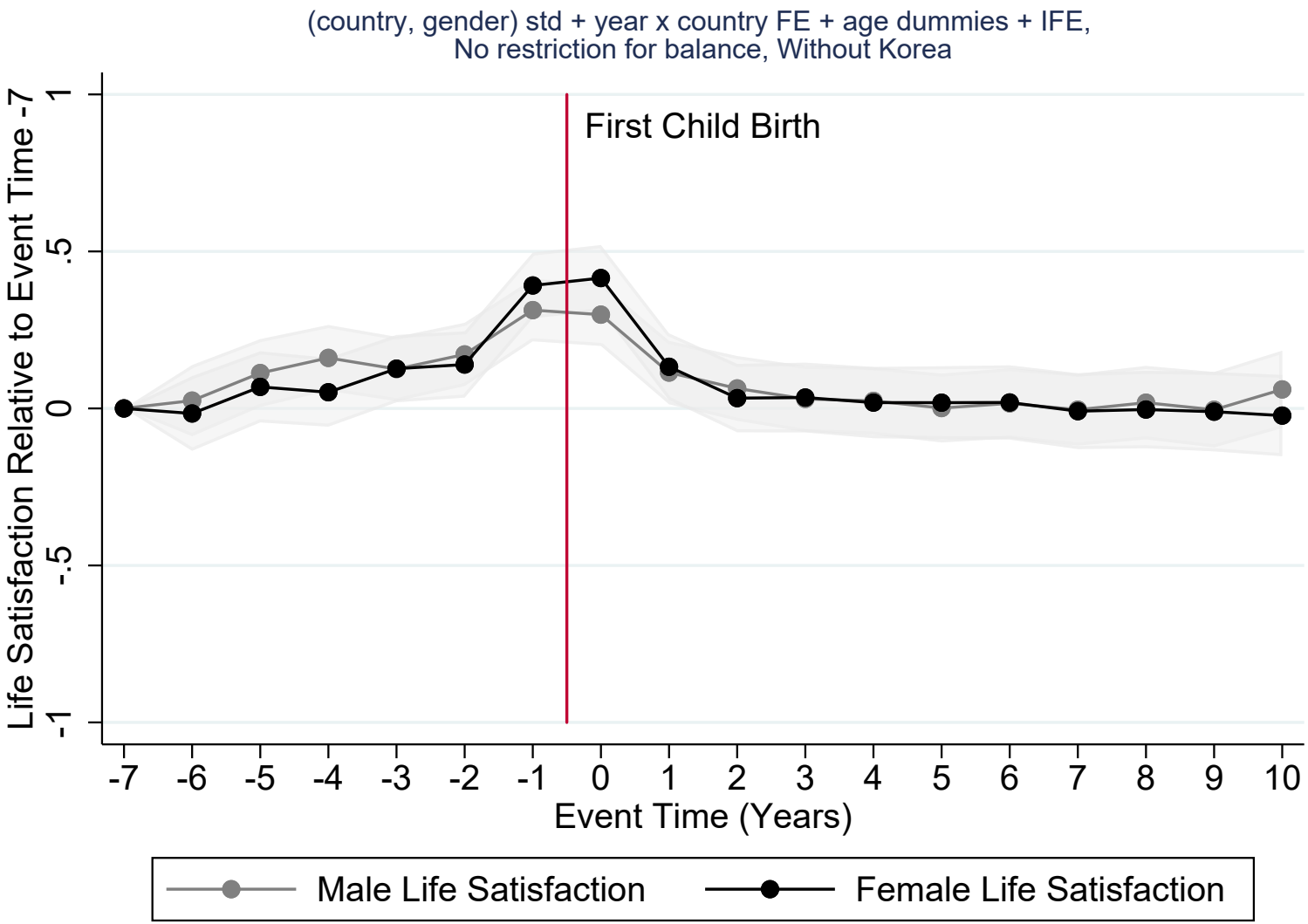
Back

Correlation Btw Child Care Index & Employment

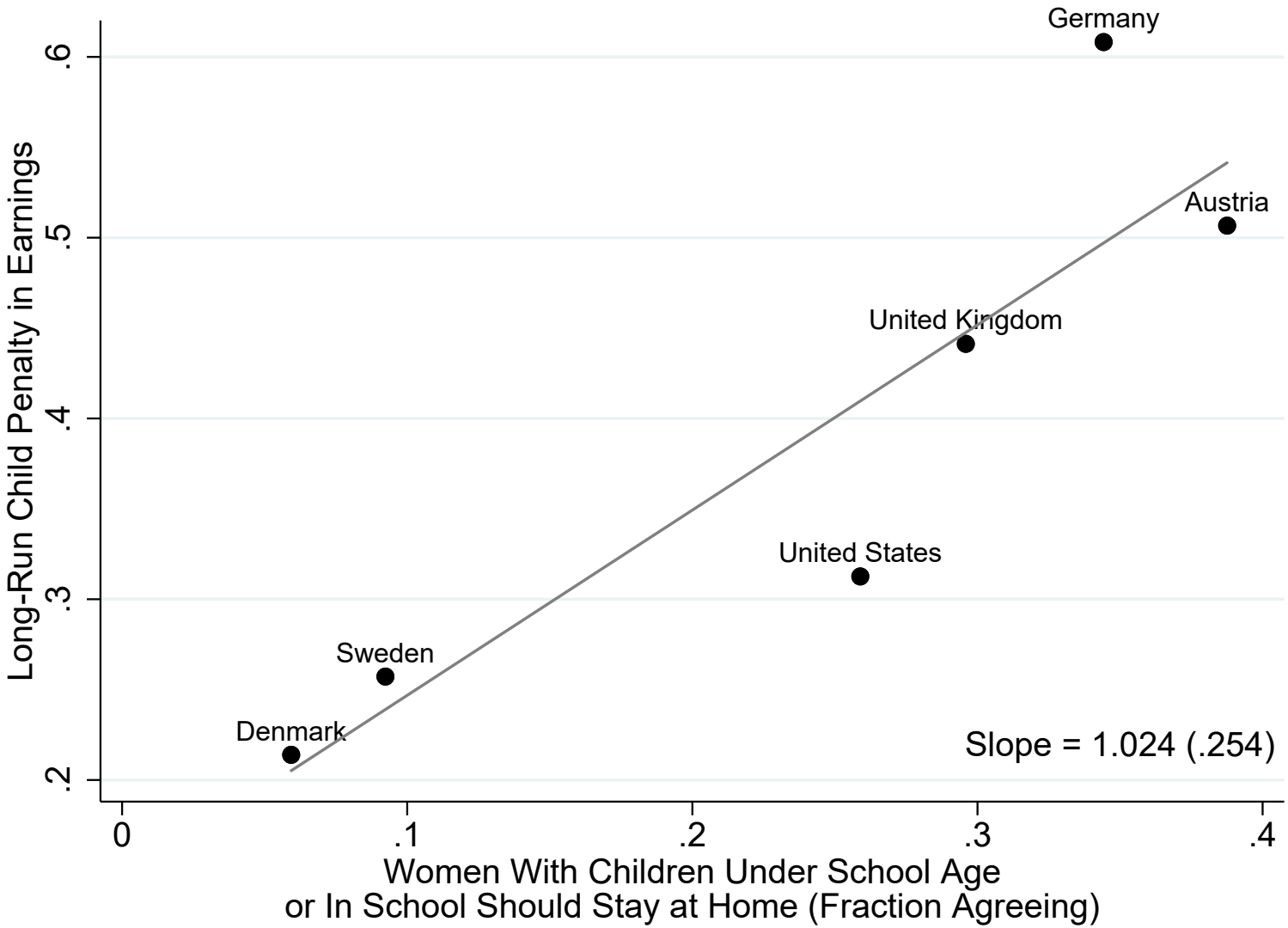
No Controls



Event Study of Life Satisfaction Around Child Birth



Correlation Btw Penalty and Elicited Gender Norm



Related Literature

- Literature on career costs of children
  - ...
- LIterature on labor supply responses to parental leave policies
  - Magne, etc.
- Literature on labor supply responses to child care
  - Macro effects: Child care expansions
  - Micro effects: eligibility variation
  - Mixed results. Mostly focus on contemporaneous labor supply