Children and Relationship Quality

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Motivation: *"Non-resting mums"*, by Moderna de Pueblo

Full story

My husband is asking why don't we have another child. But what does he mean by "we"? He barely takes care of the one "we" already have

"I do everything myself...When he comes from work, he says he's too tired to help me out"

1. Motivation

- ▷ *Having children changes **women's** lives*: career decisions, home production...
  [Kleven et al. (2019); Goldin (2021)]
- ▷ *Relationship Quality:* non-pecuniary gains from being in a couple
  - Influence marital decisions, parental investments in child education...
- ▷ Explain unexpected consequences of some pro-fertility policies
  [Farré and González (2019); Avdic and Karimi (2018)]

2. This paper

Research question

Study the impact of first child birth on couple's relationship quality

- Novel measure of Relationship Quality (RQ)
- Dynamic DiD around first child birth

First child birth significantly and persistently reduces RQ

Mechanism

Children as a shock to home production → time rearrangements

Increase in housework, internalized by women, and specialization for all couples

Larger changes in time arrangement = Larger impact on RQ

Use expansion of state-funded childcare to establish a causal link *Preliminary!*

3. Data and measure

Target population: individuals in cohabiting relationships that become parents

Data source: household panel data from Understanding Society (UKHLS) spanning periods 2009-2022

Partner Questionnaire to both cohabiting partners **individually**:

(a) Subjective assessment	(b) Couple time use
How often do you... ?	*How often do you... ?*
consider splitting	work together on a project
regret getting married	stimulating exchange of ideas
quarrel	calmly discuss something
get on each others nerves	kiss partner
What is the... ?	*Do you and your partner... ?*
degree of happiness w/ couple	engage in outside interests

Measure: **factor analysis to construct RQ** Distribution Determinants

- Standardized and increasing

Validity exercises: Infromativeness Interpersonal Comparability

5. Methodology

I. Impact of first child birth on RQ

- Dynamic DiD: Two-Way Fixed Effects specification:

$$y_{i,t} = \alpha_i + \mu_t + \sum_j \{j = t - G_i\}\delta_j + u_{i,t}$$

  - δ_j: ATT's paramenters
  - Use estimator proposed by Callaway and Sant'Anna (2021)

- Assumptions for causality:
  - **No anticipation effects**

    No abrupt changes in RQ preceding first child birth

    ◂ RQ moments ◂ RQ mean: by age

  - **Conditional parallel trends**

    RQ of parents would have evolved the same in the absence of treatment

    ◂ Age and tenure profiles ◂ Fertility treatment ◂ Treatment cohort

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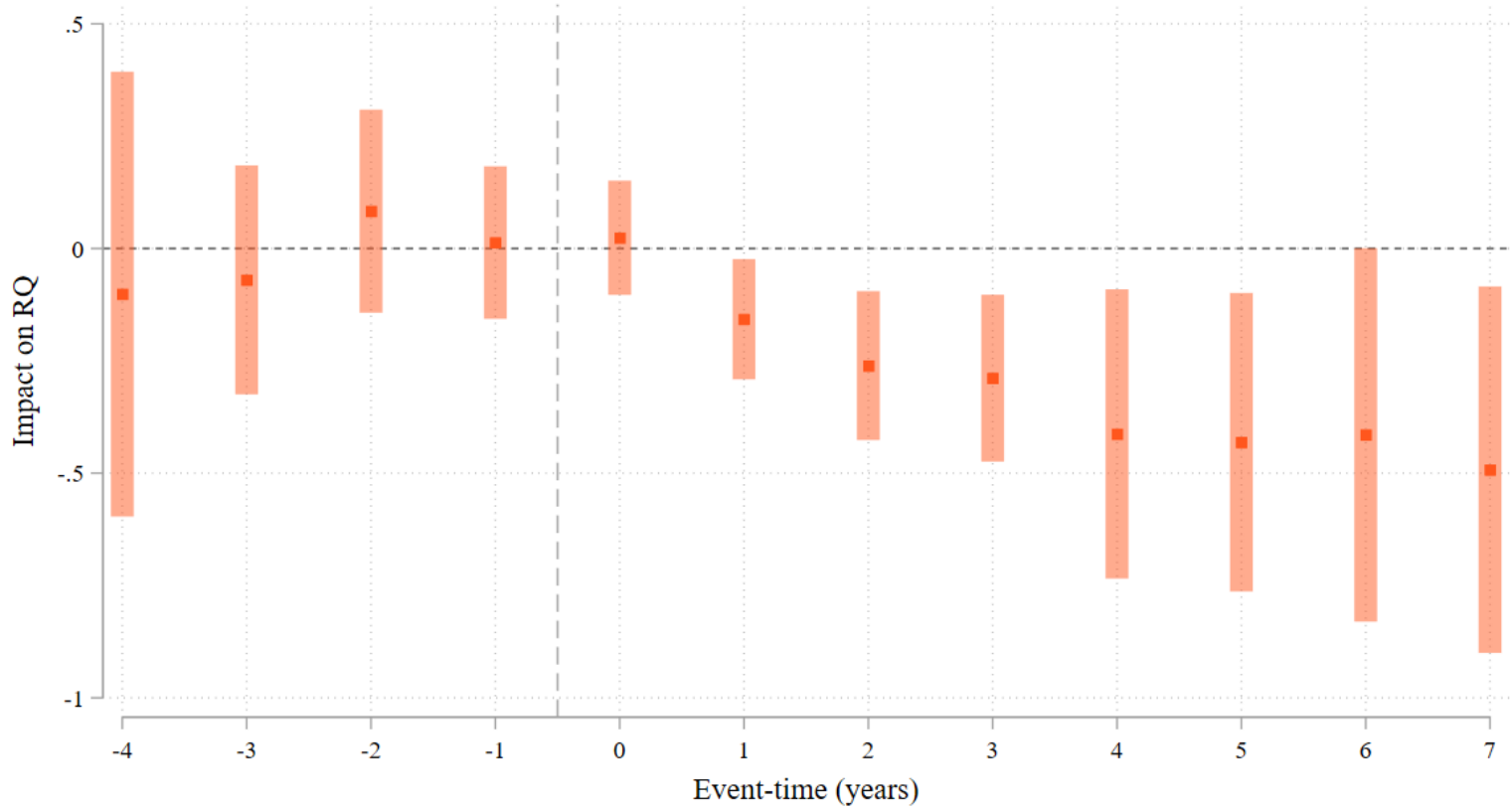
Notation: i individual, t wave.

6. Main result

A top 10% couple in the RQ ranking becomes a median couple after child birth



Related results: Gender differences ◂ General well-being Happiness with relationship

6. Main result: robustness checks

▷ **Main specification**

- OLS estimator
- Age and Relationship tenure as time FEs
- Child penalty specification [Kleven et al. (2019)]

◂ TWFE age ◂ TWFE tenure No Controls

▷ **Measure of RQ**

- Removing Couple time use items
- Building RQ with parent scores
- Item by item
- Measures from psychology

◂ Subjective RQ Parent RQ Each item RDAS

▷ **Sample selection**

- For first born boys and girls
- Only couples that do not split
- Total amount of kids in fertility cycle

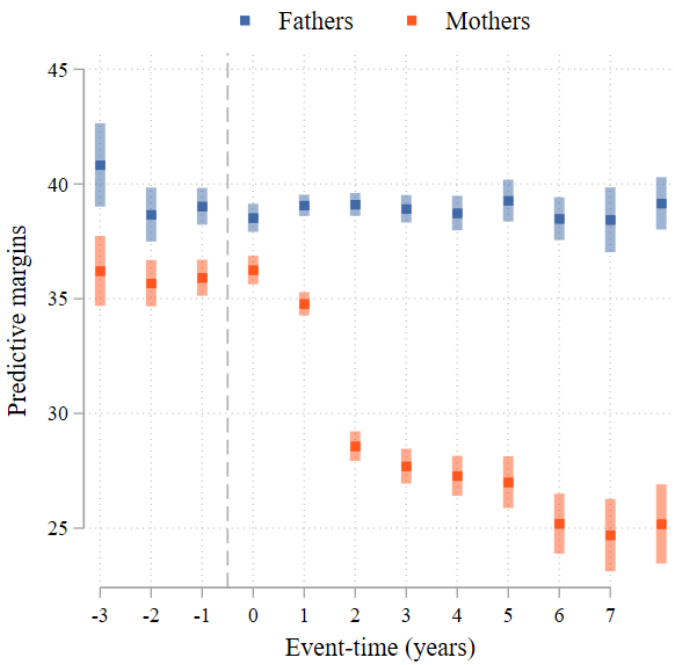
Boy # Girl No splitting Total fertility

7. Mechanism: children as time shock

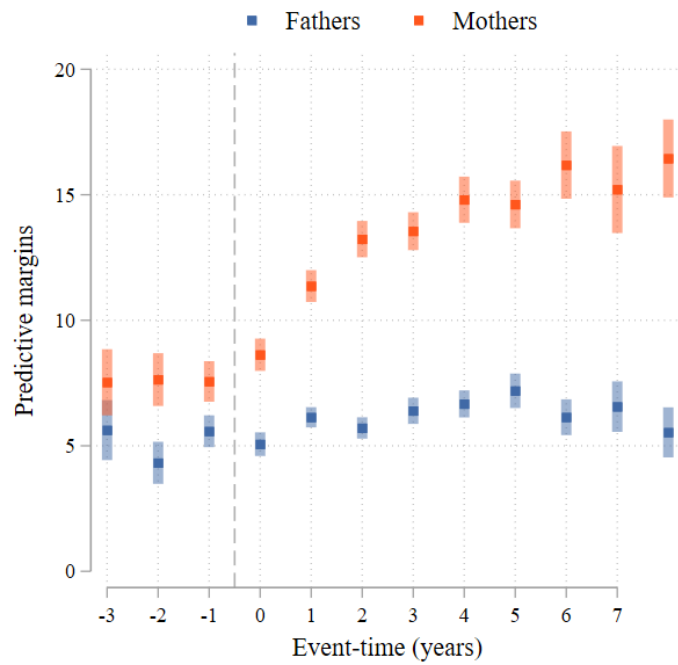
Related results

- *Women specialize in housework production, regardless of pre-birth arrangements*
- *Couples experiencing largest time changes suffer the most*

(a) Paid work hours



(b) Unpaid housework hours



Related results: By pre-birth arrangement | DiD | Classification | ◂ Couples stats

8. A childcare expansion: shock to parental time use

Institutional context: state-funded childcare in England

- English local authorities (LAs) provide free childcare to 3 (since 2004) and 4 (since 2001) year olds
  - Universal, 15 hours a week for 38 weeks a year
- **September 2017:** expansion to 30 hours a week, for parents of 3- and 4-years olds:
  - Both work at least 16 hours weekly at minimum wage
  - Earn less than £100,000 yearly

Exploit spatial variation in policy roll-out:

[Blanden et al. (2014); Brewer et al. (2014)]

- LAs differ in capacity to meet new childcare demand

  → #3-and 4-years olds per childcare center in 2017

  ◂ Regional variation
  - >35 children: low capacity
  - 25-35 children: medium capacity
  - <25: high capacity

8. A childcare expansion: shock to parental time use

$$y_{ilt} = \beta_0 + \beta_1 1\{Elig\} + \beta_2 1\{Sept2017\} + \gamma_j D_{ilt} +$$
$$+ \underbrace{\delta_1 1\{Elig\} \times 1\{Sept2017\}}_{\text{IIT}} + \underbrace{\delta_j 1\{Elig\} \times 1\{Sept2017\} \times D^j_{ilt}}_{\text{Treatment intensity}} + \Gamma X_{it} + \alpha_t + u_{it}$$

$1\{Elig\}$: child aged 3-4 years old

D^j_{ilt}: type of LAs by adoption capacity

	(1) Childcare use	(2) Paid hours	(3) Housework hours	(4) RQ
Elig. × Sept 2017	-0.153*	-4.126	0.788	0.133
	(0.090)	(2.877)	(2.498)	(0.336)
Elig × Sept 2017 × Large capty.	0.279*	5.718	-3.657	-0.741
	(0.149)	(4.698)	(3.771)	(0.670)
Elig × Sept 2017 × Med. capty.	0.187	-1.116	-1.065	-0.454
	(0.138)	(5.496)	(3.738)	(0.567)
Controls	Yes	Yes	Yes	Yes
Observations	1,194	1,146	673	781

Standard errors in parentheses

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Conclusions

(1) **Having a child reduces RQ significant and persistently**

(2) **Parents change the way in which they use their time**

- Increase in housework
- Reallocation of paid and unpaid work $\rightarrow$ Suffer more for larger changes

Next steps: leverage quasi-random variation in parental time use using childcare expansion

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"Non-resting mums", by Moderna de Pueblo

Back to motivation

My husband says we should have another kid. But, we? He barely takes care of the one we have
My husband was like that before, but he's changed a lot in the last months...

"Non-resting mums", by Moderna de Pueblo

Now, some days a week, he plays with the child, puts him into bed, brings him to school, and even prepares the baby's meals...

Really? How did you do it?

"Non-resting mums", by Moderna de Pueblo

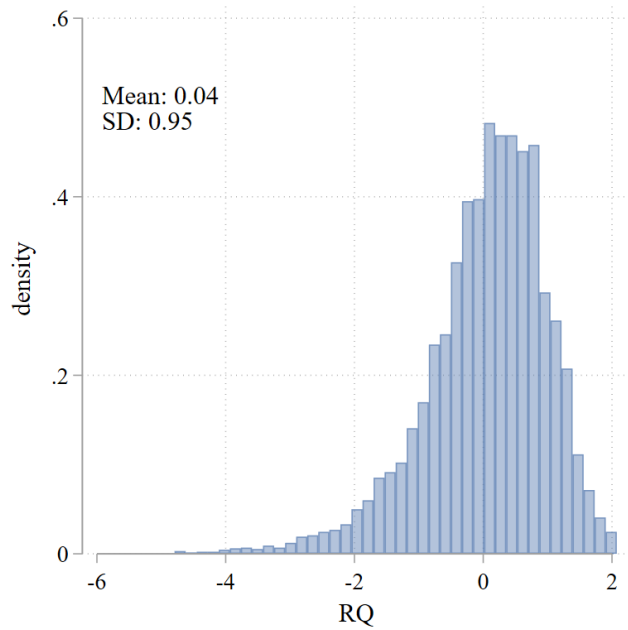
I got divorced! Now he cannot avoid childcare and housework at least some days a week... Finally, I can take some rest!

Appendix

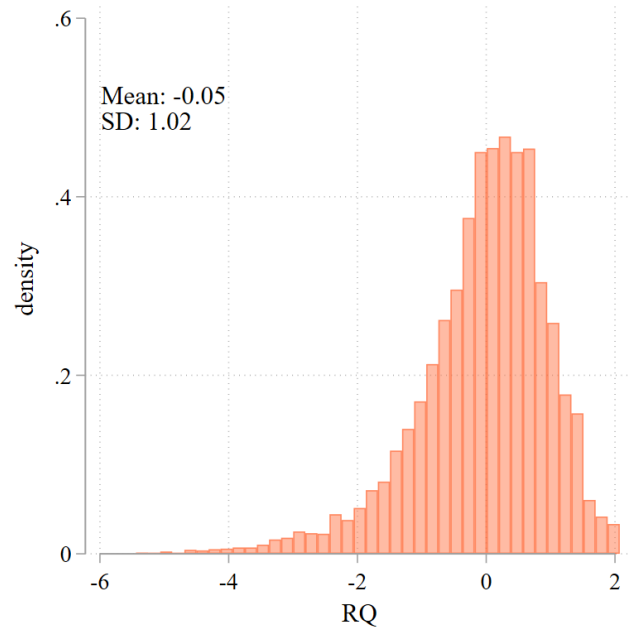
Distribution of RQ

◂ Back to measure ◂ Back to analysis

(a) Men



(b) Women



Validity: Informativeness

Behavior Prediction

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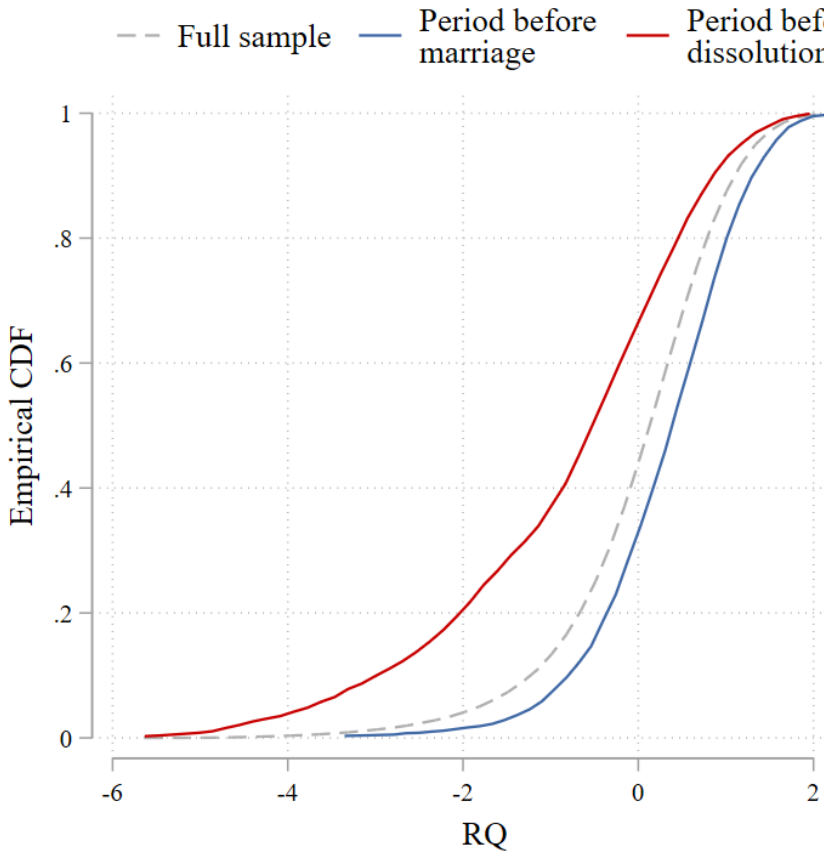
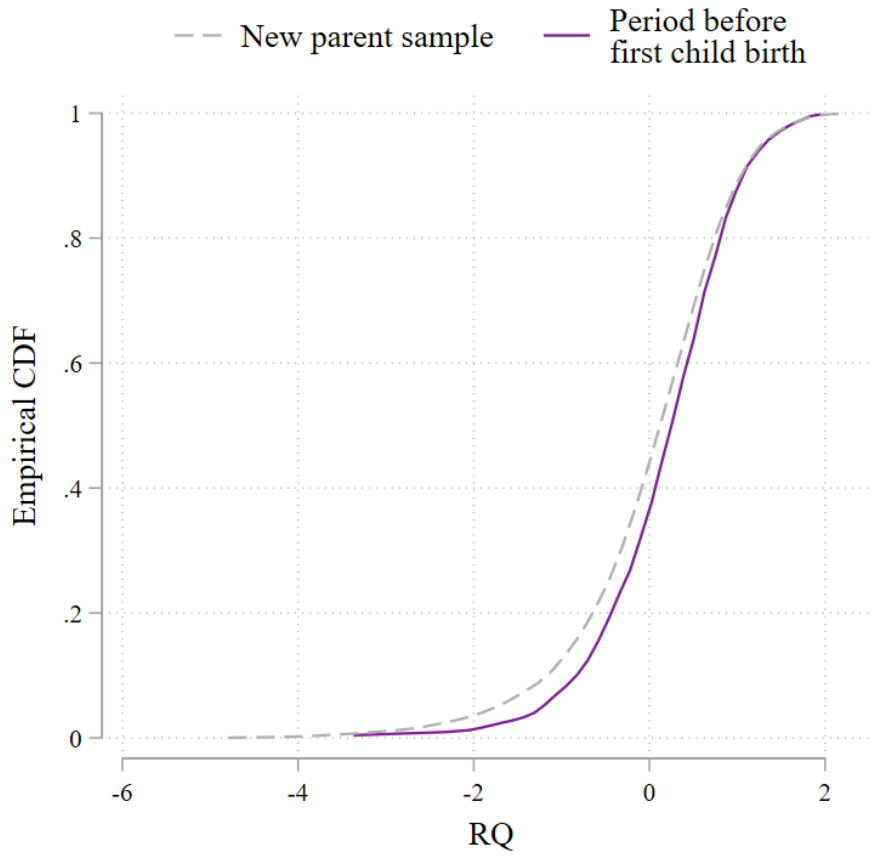
(a) Marital transitions



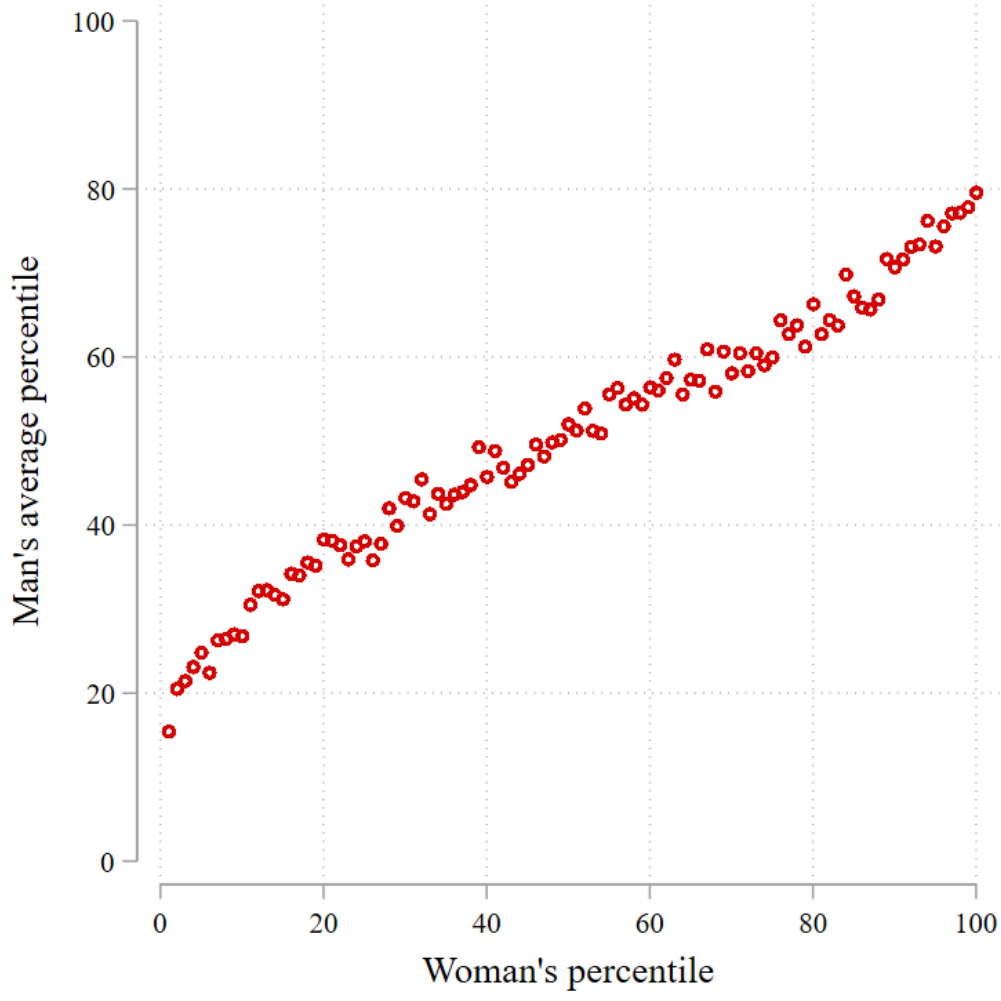
(b) Fertility decisions



Validity: Informativeness

Within Couple Correlation

Back



Impact of other variables

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	RQ
Panel A: Individual characteristics	
Women	-0.082***
	(0.021)
College educated	0.135***
	(0.031)
Employed	0.107**
	(0.041)
Gross monthly income	0.020
	(0.012)
In urban areas	-0.073*
	(0.031)
Panel B: Couple characteristics	
Married	0.241***
	(0.037)
Controls: Age + Tenure + Wave	

Evolution of RQ along age and relationship tenures

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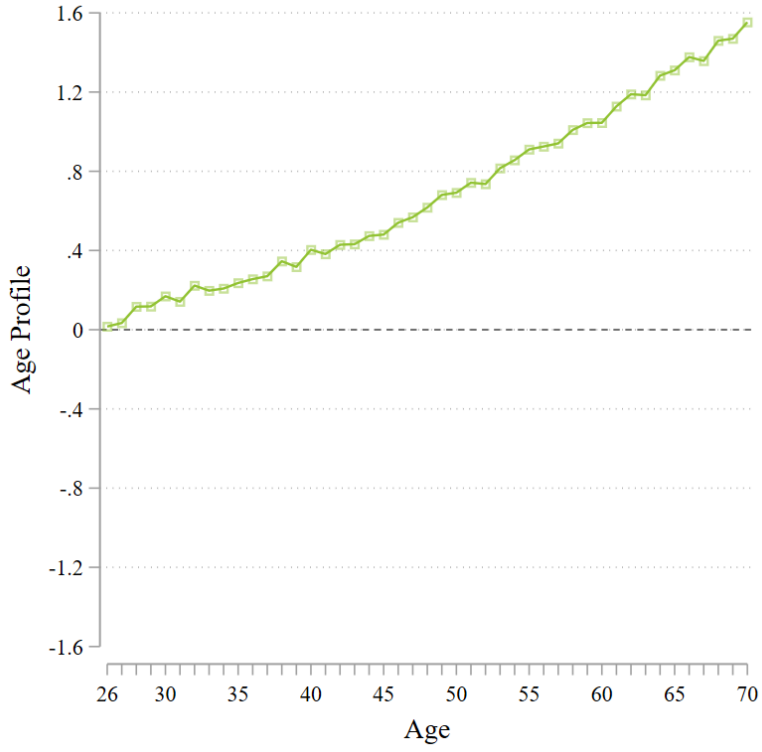
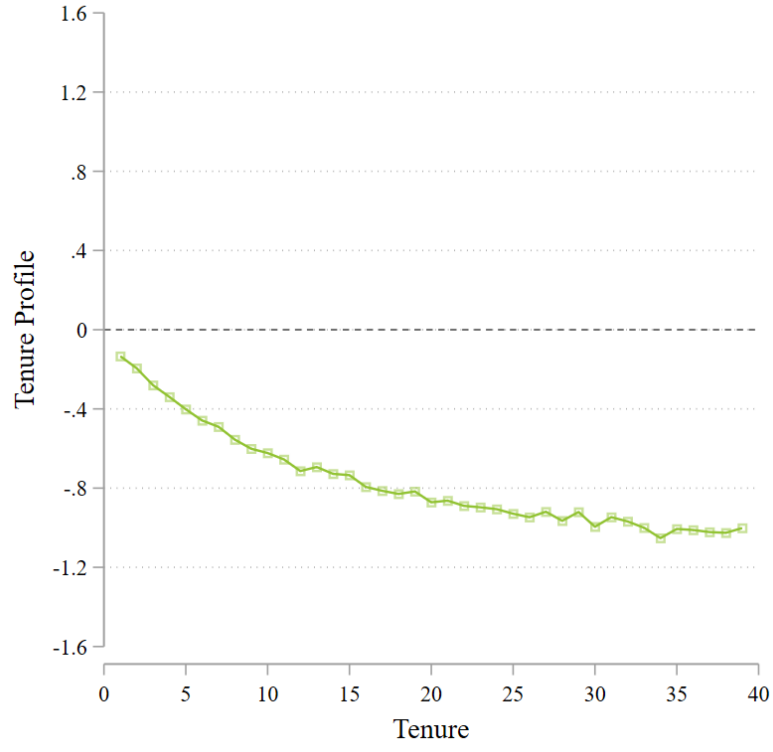
Estimate through Fixed Effects:

$$y_{ist} = \sum_a \{a = \text{age}_{is}\}\alpha_a + \sum_d \{d = \text{tenure}_{is}\}\gamma_d + \sum_w \{w = s\}\psi_t + \mathbf{X}_{is}\beta + v_{ist}$$

(a) Life-cycle: α_a

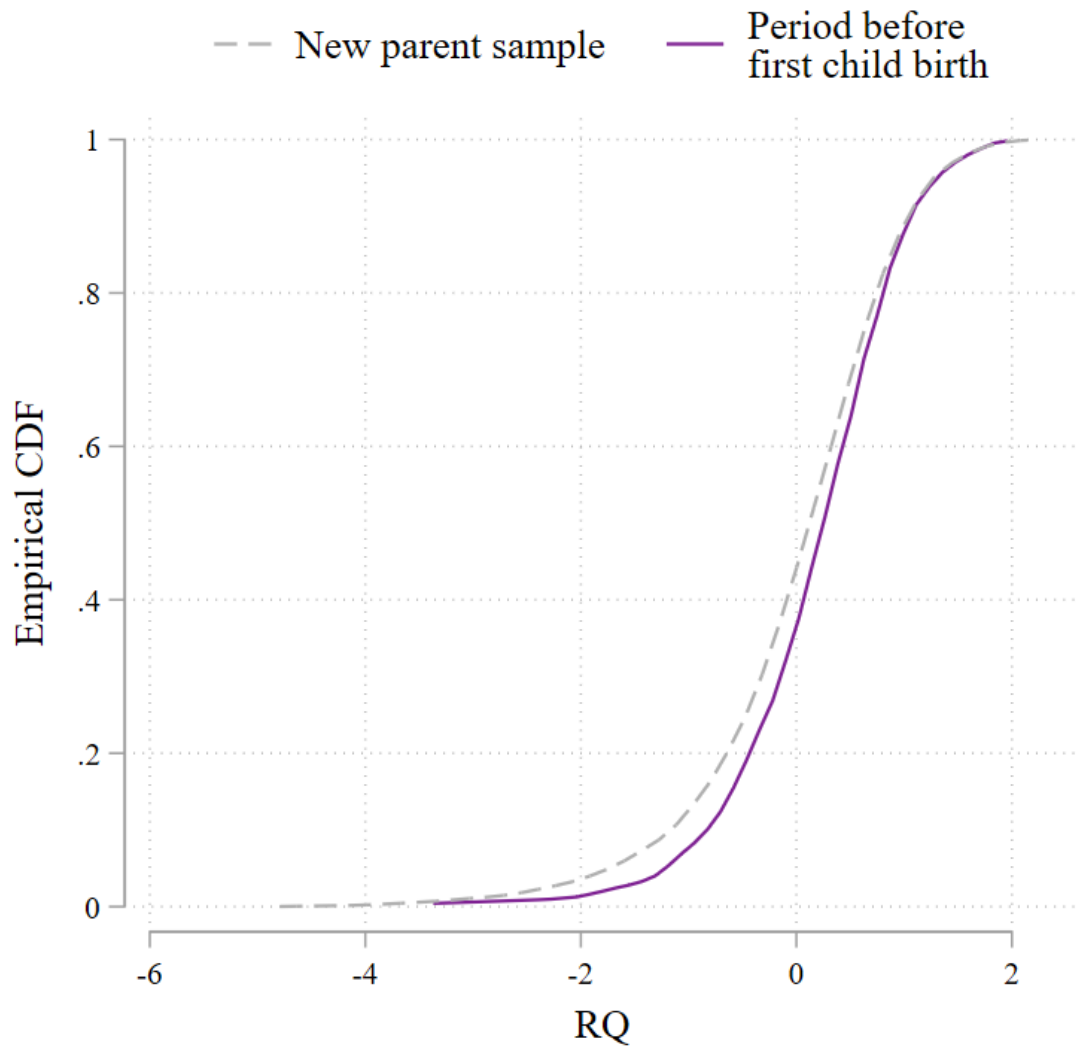


(b) Relationship cycle: δ_d



Distribution before child

Back



Sociodemographic characteristics before and after first child birth

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	Before child birth		After child birth	
	Women	Men	Women	Men
Sociodemographic characteristics				
Age	28.18	30.72	35.50	38.03
	(4.825)	(5.884)	(6.738)	(7.322)
College (%)	27.80	26.32	26.63	22.82
	(44.84)	(44.07)	(44.22)	(41.98)
Weekly working hours	26.49	41.94	15.17	40.28
	(13.72)	(11.38)	(14.55)	(11.78)
Weekly housework hours	12.31	3.391	18.50	4.199
	(6.797)	(2.950)	(9.860)	(3.671)
Gross individual earnings	1001.6	1973.7	992.2	2901.4
	(757.6)	(1349.7)	(1021.3)	(2167.6)
Well-being	2.022	2.070	2.005	2.028
	(0.672)	(0.555)	(0.616)	(0.524)
Relationship characteristics				
RQ	0.642	0.543	-0.280	-0.0809
	(0.654)	(0.753)	(0.961)	(0.914)
Subjective RQ	0.260	0.241	-0.135	-0.0508
	(0.924)	(0.790)	(0.900)	(0.938)
Couple time RQ	0.733	0.603	-0.221	-0.0101
	(0.703)	(0.791)	(0.883)	(0.809)
Observations	717	728	2033	2022

Standard errors in parentheses.

Note: Sociodemographic and relationship characteristics of women and men before and after first child birth. Average values the four (eight) periods before (after) the first child birth. Standard errors in parenthesis.

Marginal effects by gender

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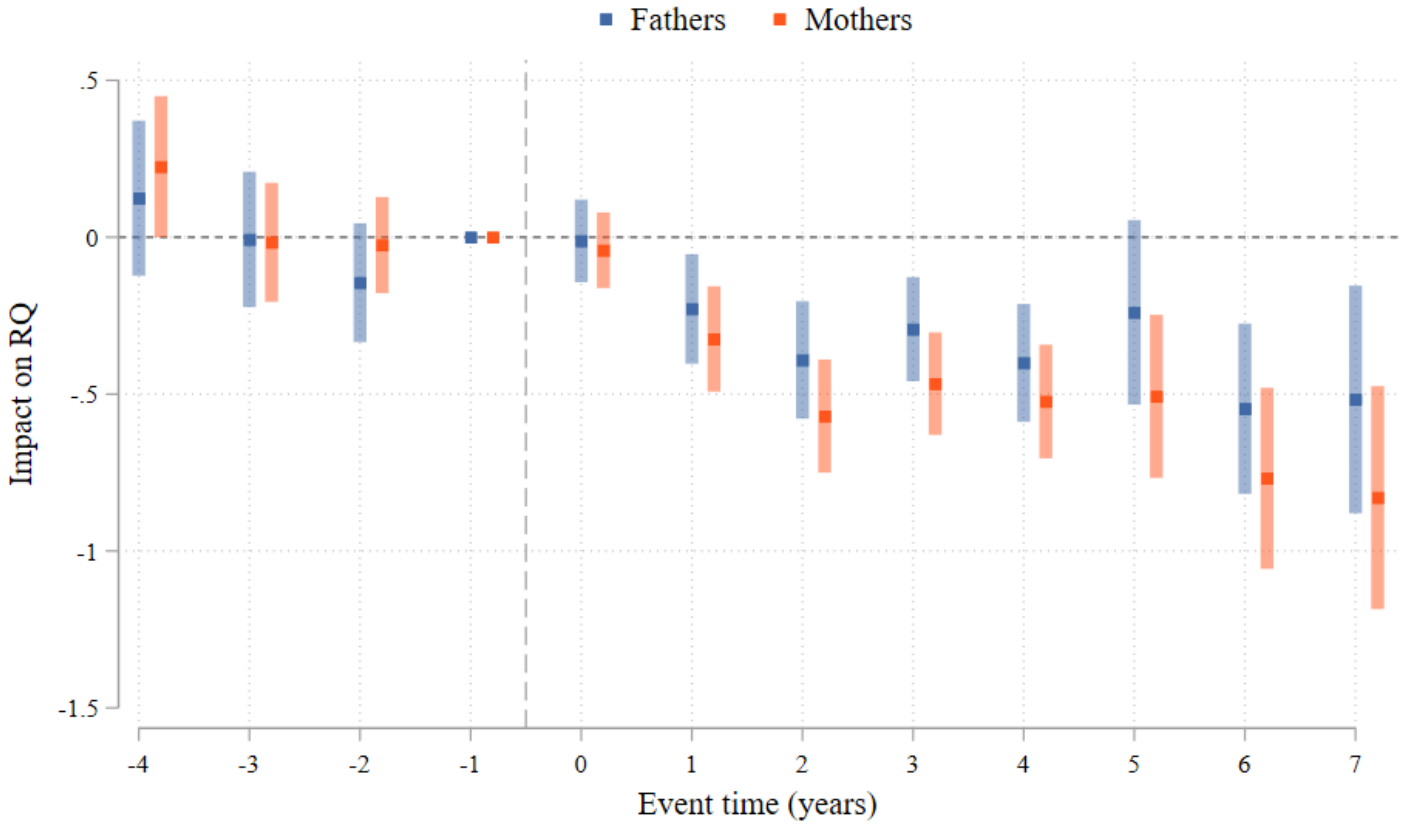
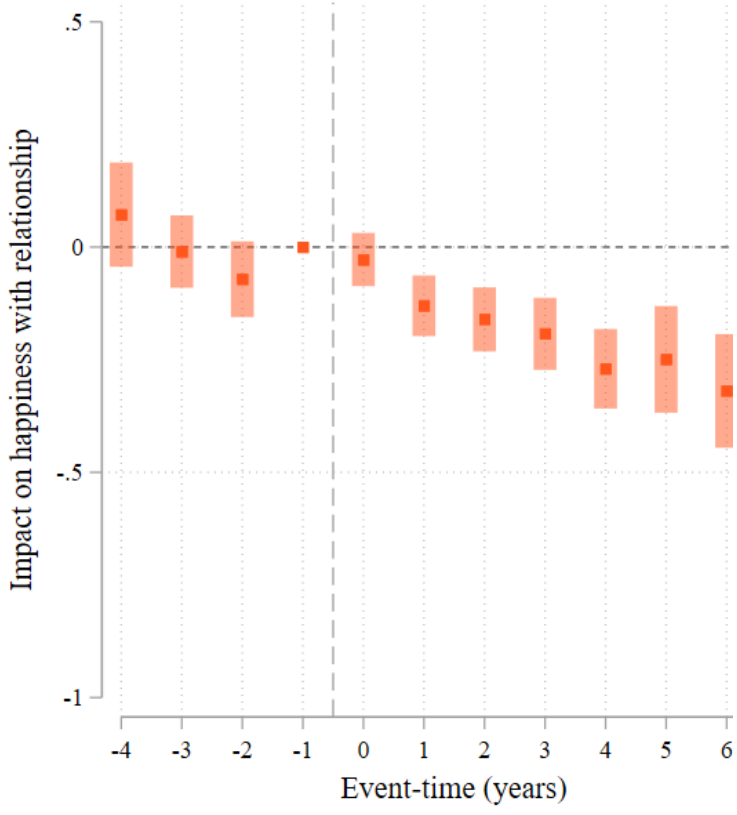


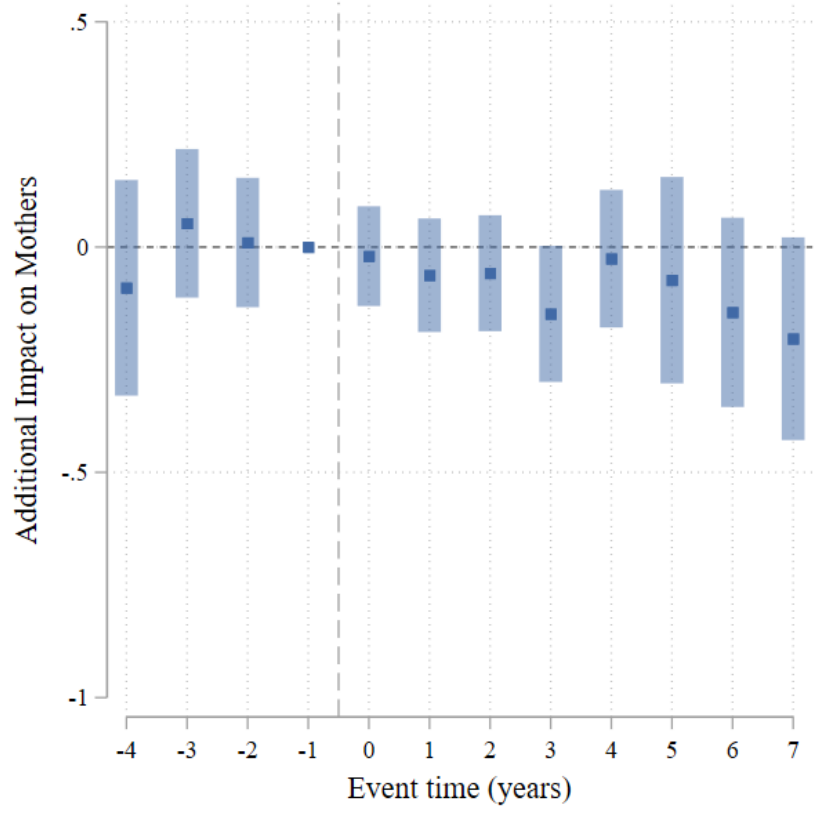
Happiness with the relationship

Back

(a) Baseline specification



(b) Gender differences

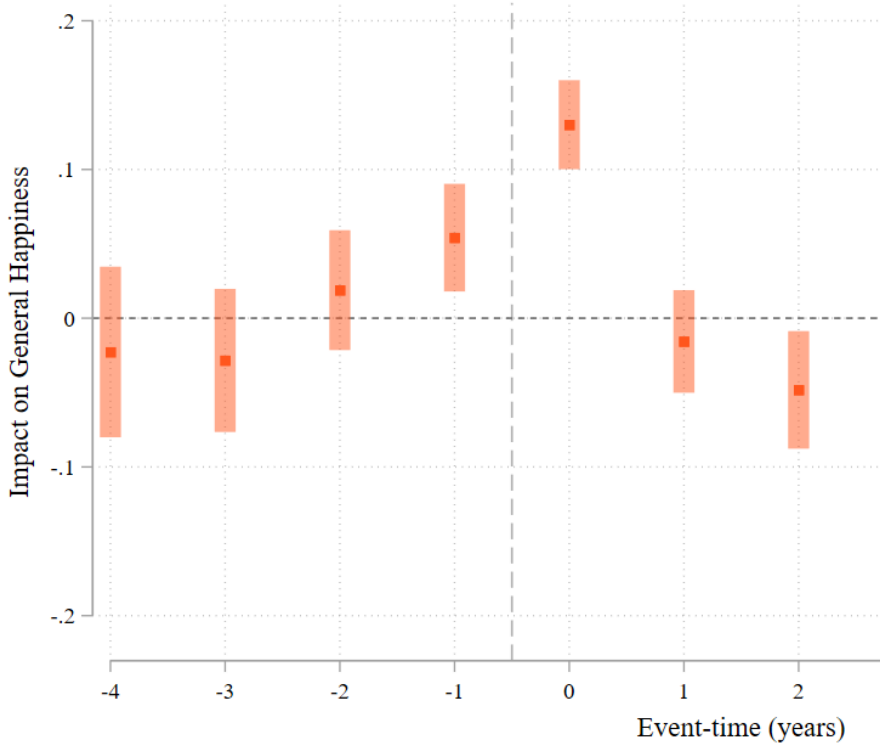


Impact on general happiness

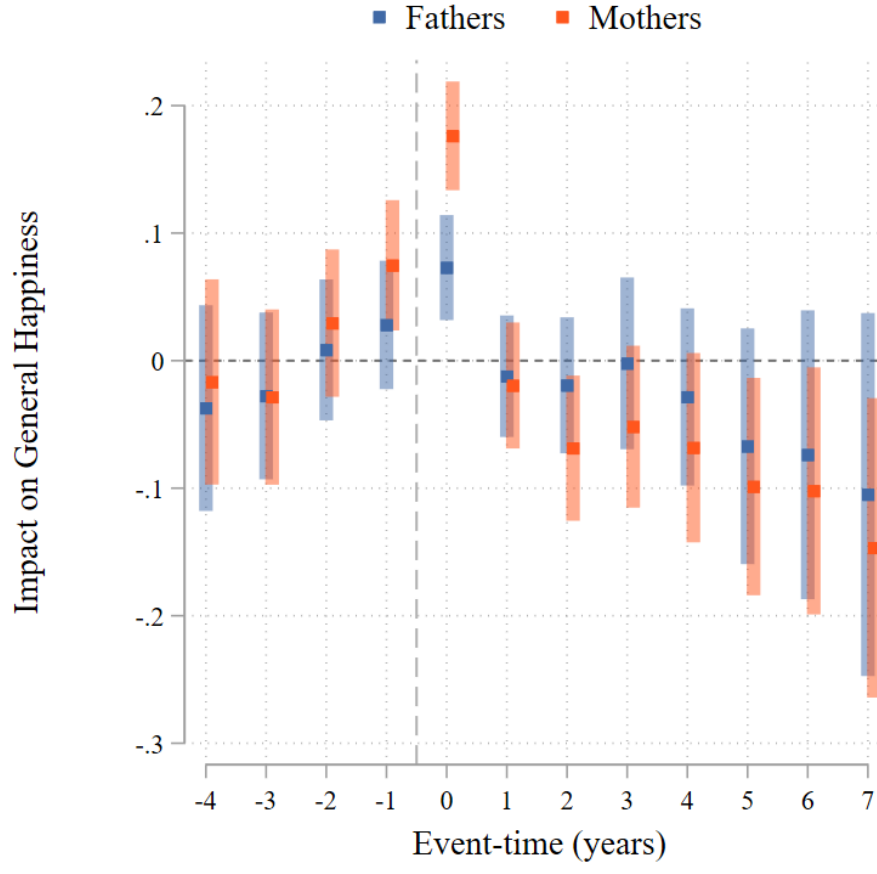
Back

"Have you recently been feeling reasonably happy, all things considered?"

Pooled sample

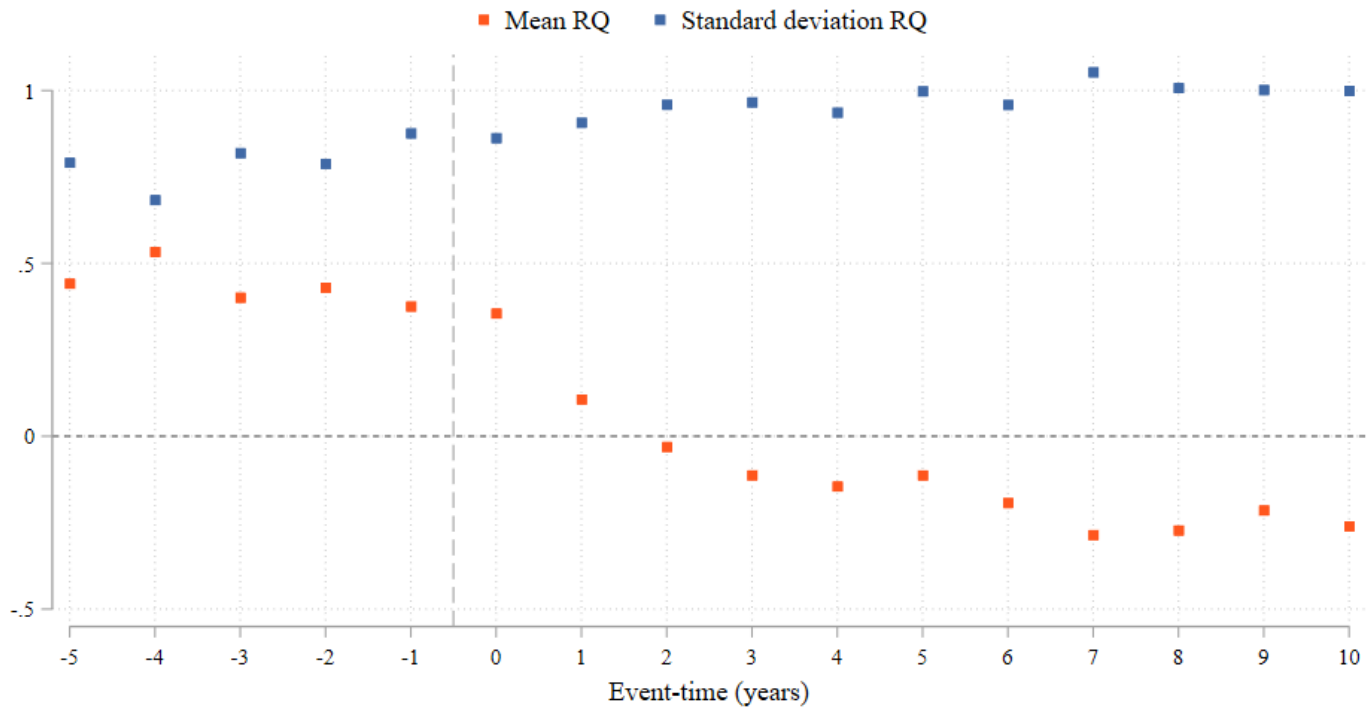


Marginal effects by gender



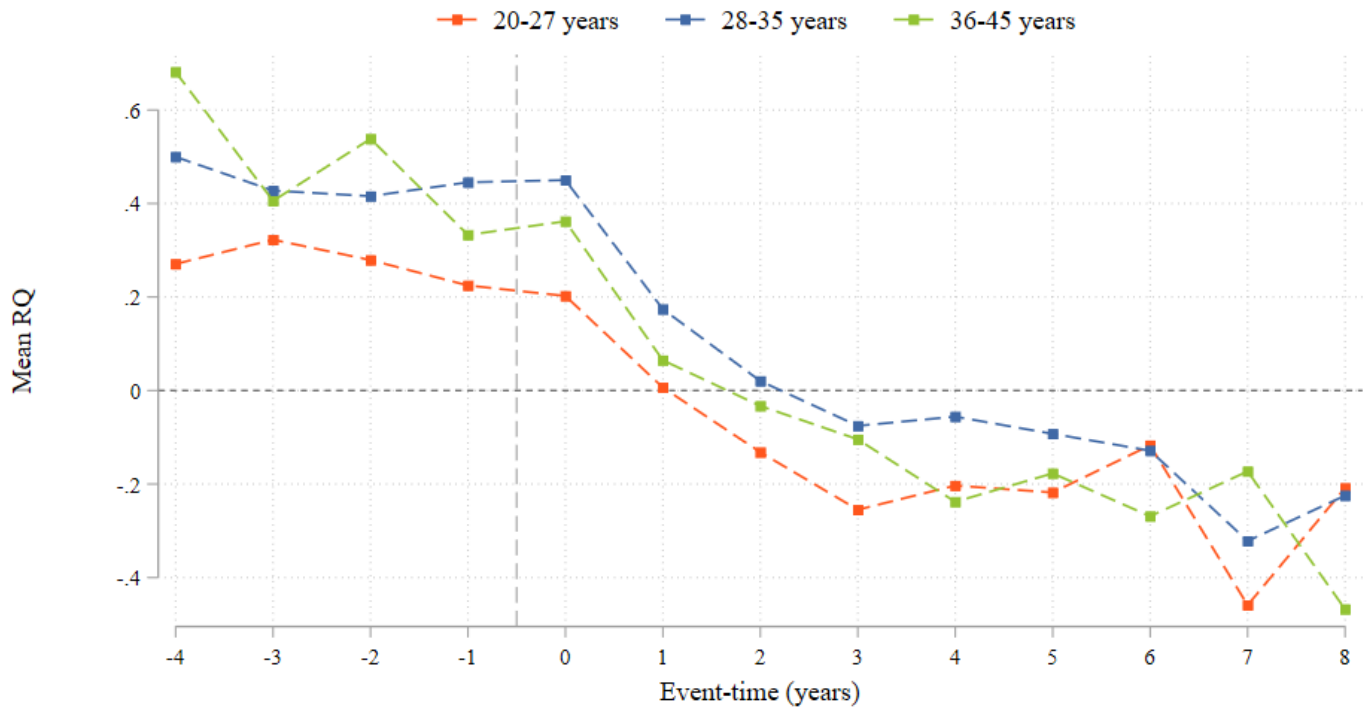
RQ moments by event time

Back



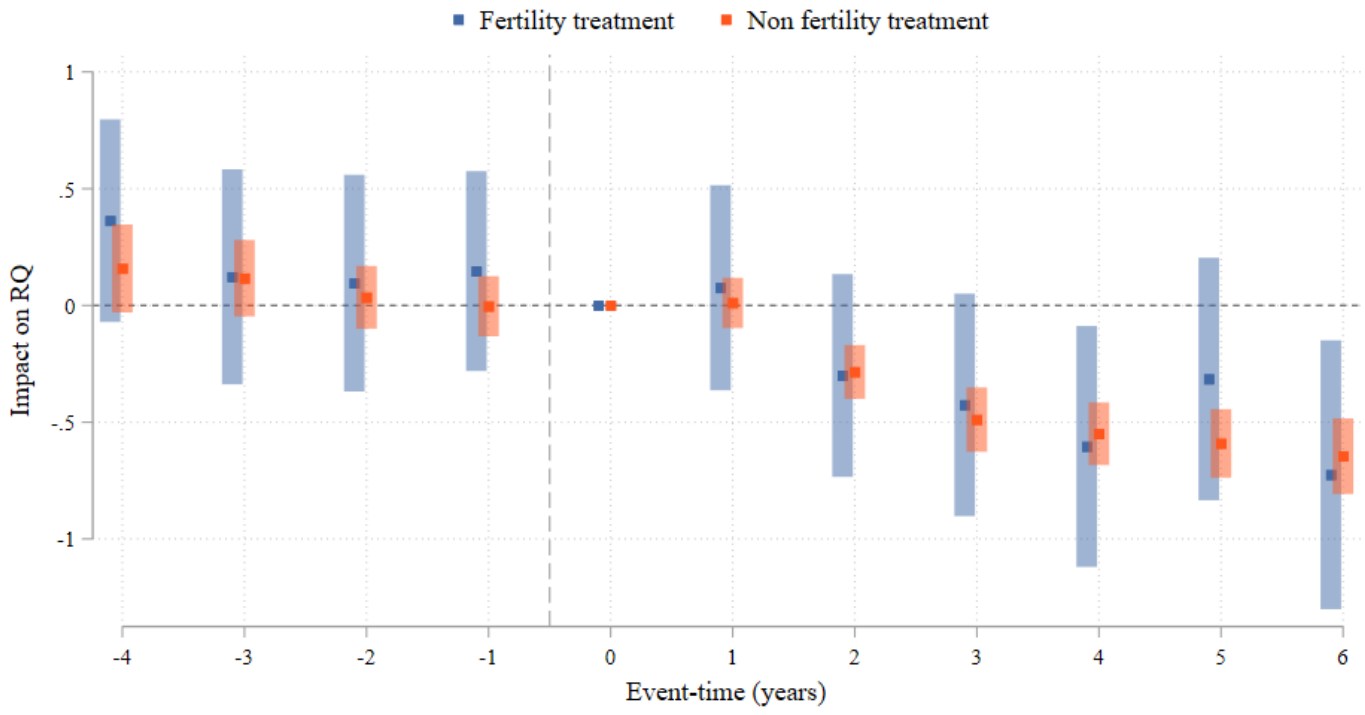
RQ mean by event time: *early* vs *late-treated*

Back



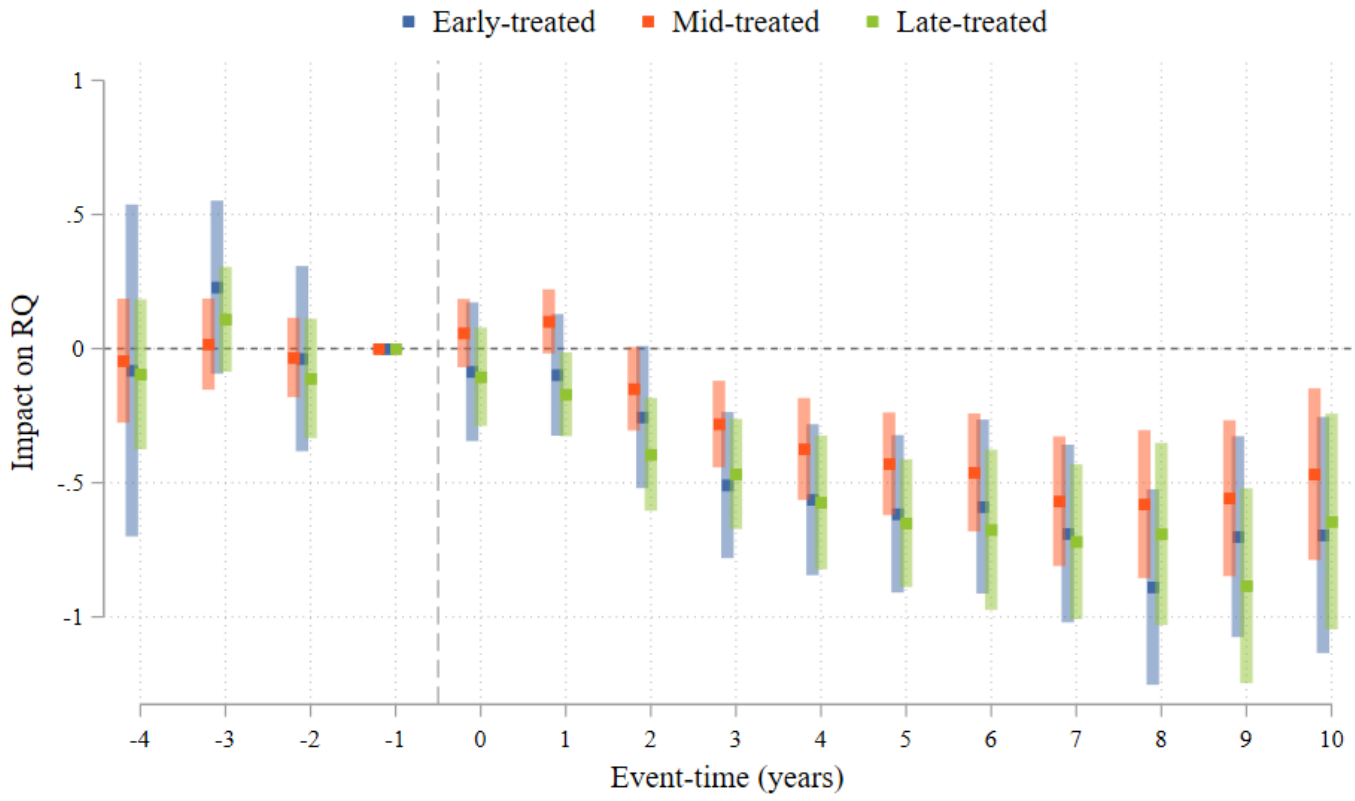
Used fertility treatment vs no

Back



By treatment cohort

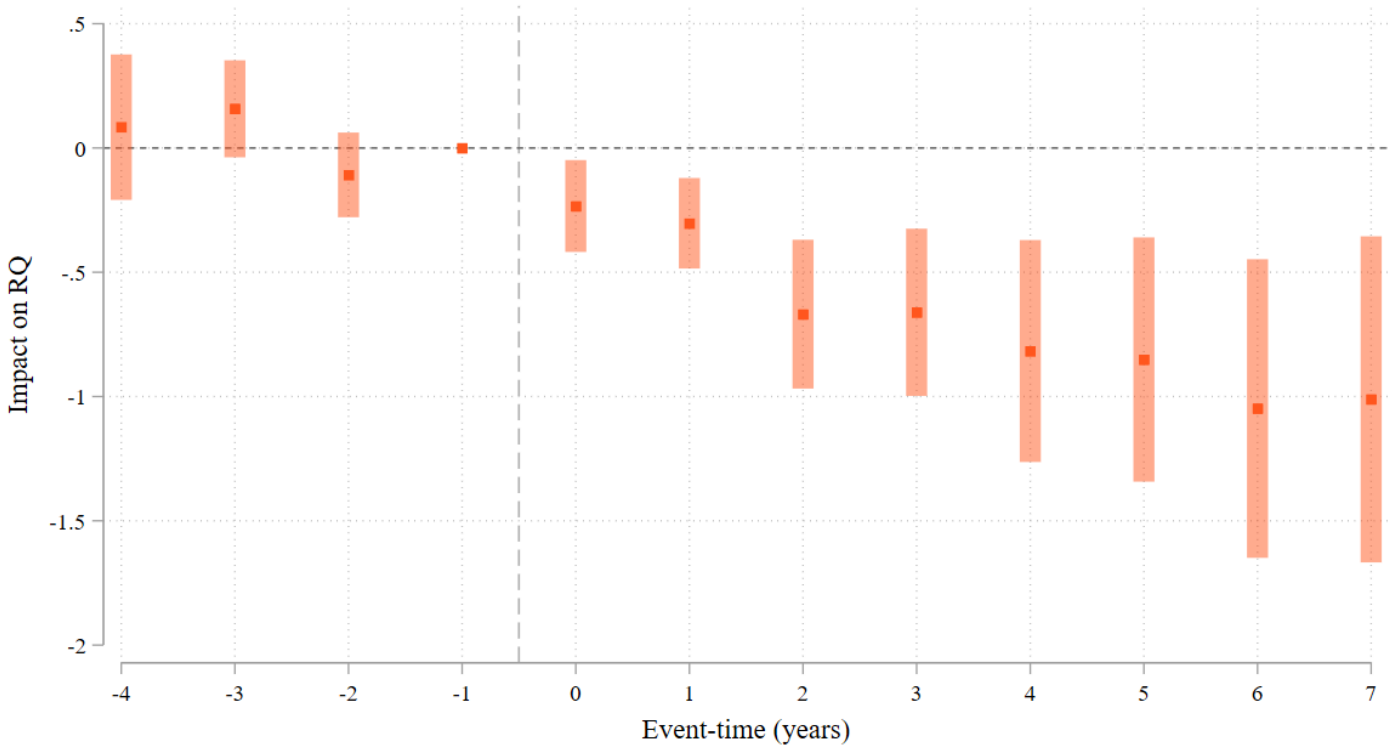
Back



Robustness: Kleven et al. (2019)

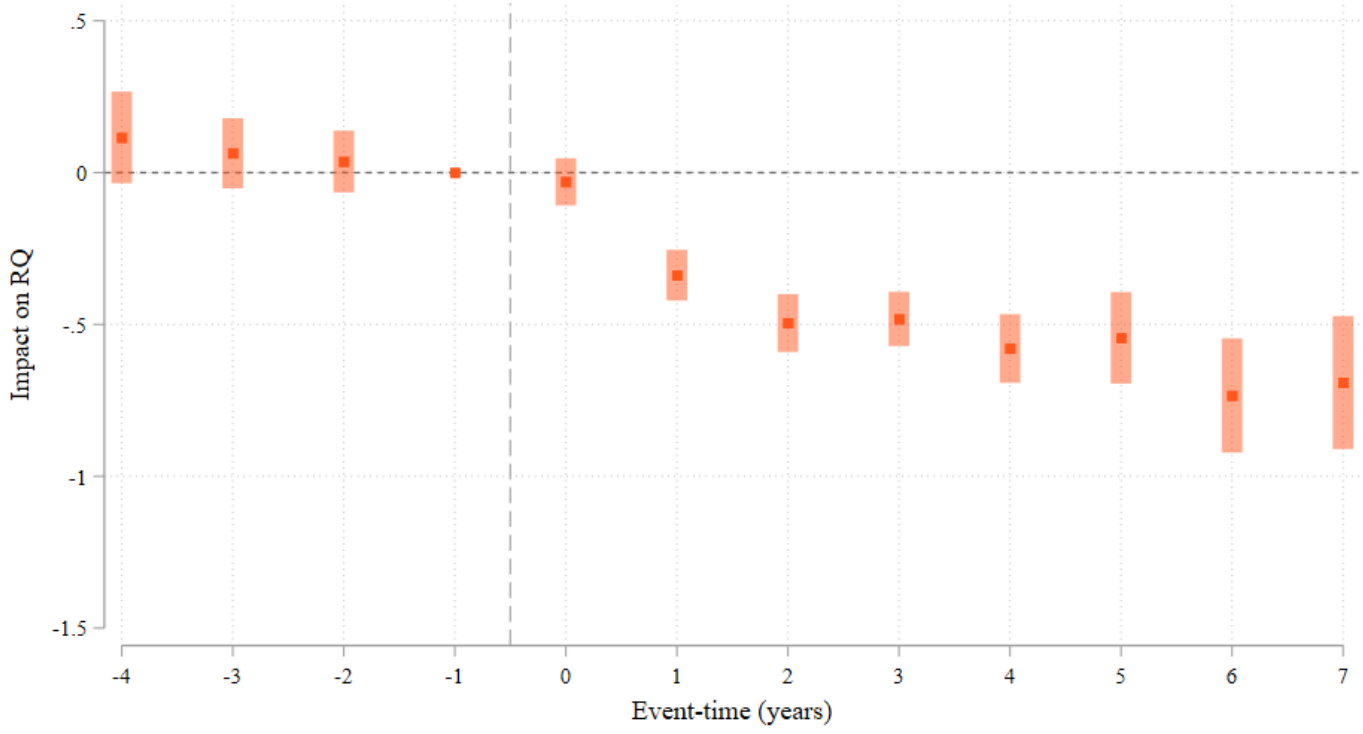
Back to results

$$y_{i,t} = \sum_{j \neq -1} \{j = t - G_i\}\delta_j + \sum_a \{a = \text{age}_{i,t}\}\alpha_a + \sum_d \{d = \text{tenure}_{i,t}\}\gamma_d + \sum_w \{w = \text{period}_t\}\psi_w + v_i$$



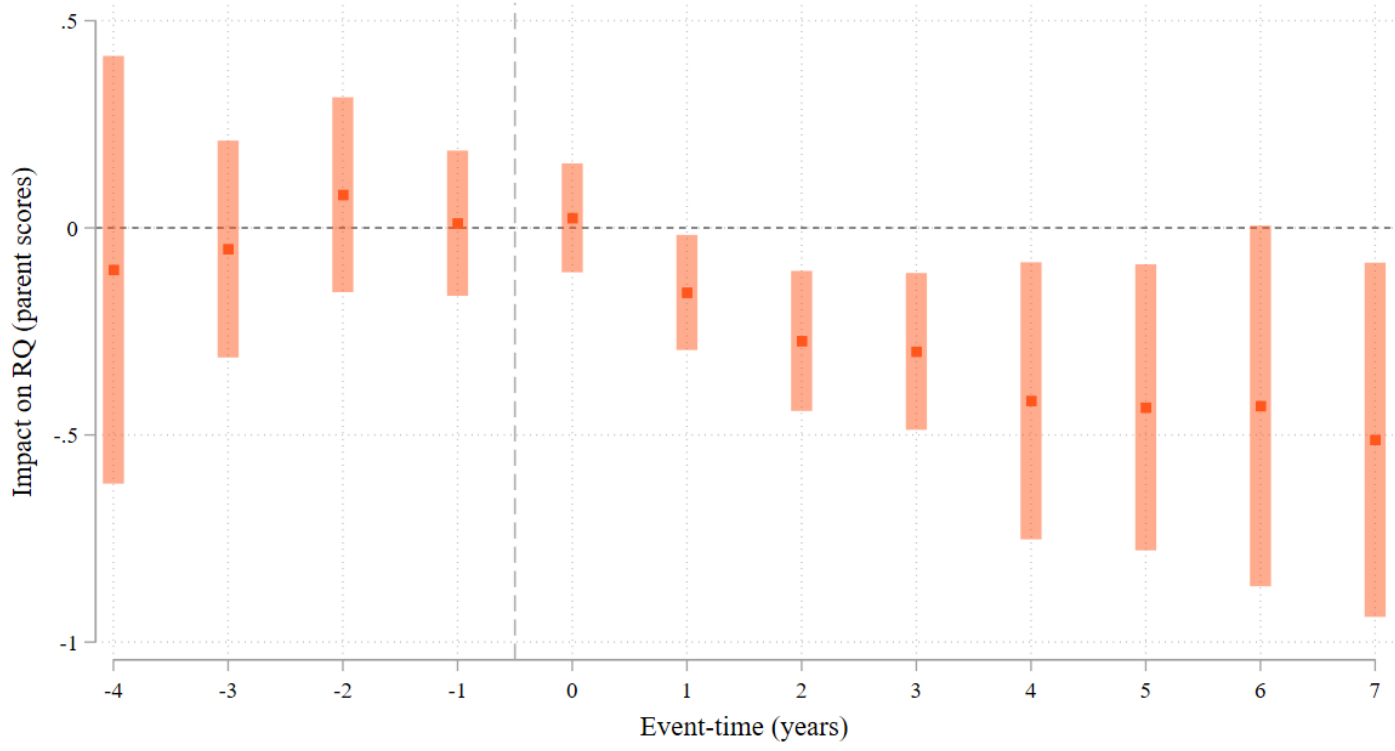
Robustness: Without controls

Back



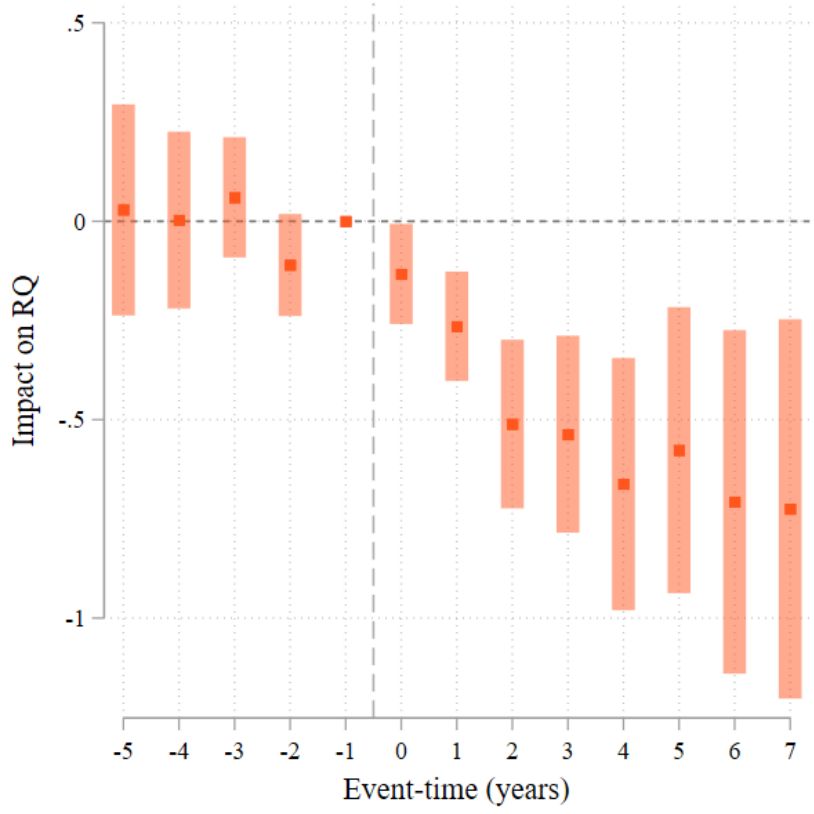
Robustness: Construct RQ using parent scores

Back to results



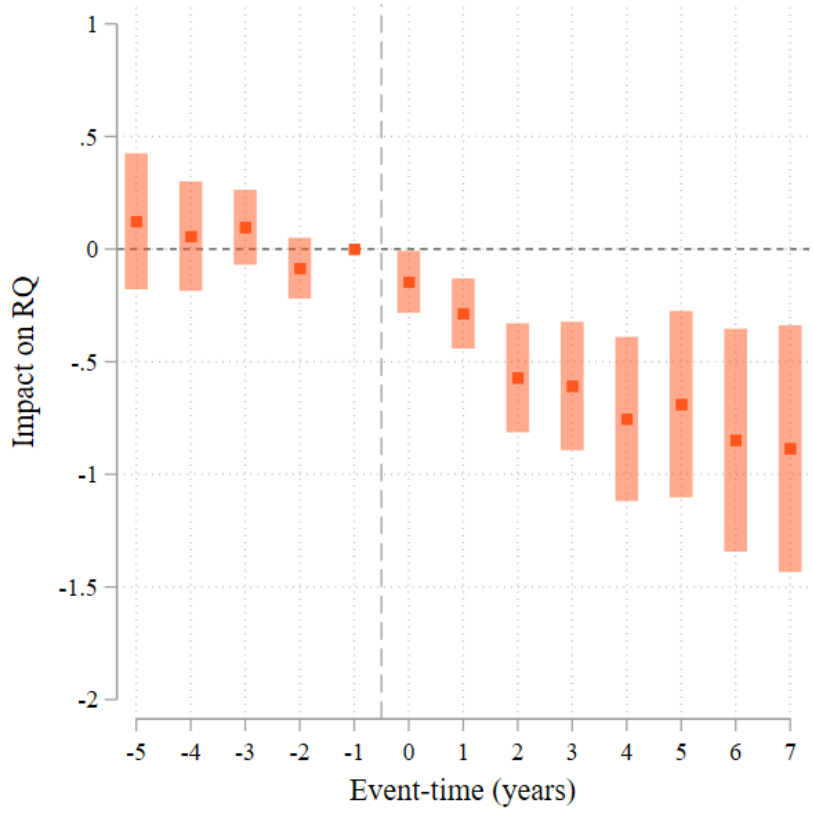
TWFE with age as time dimension

Back



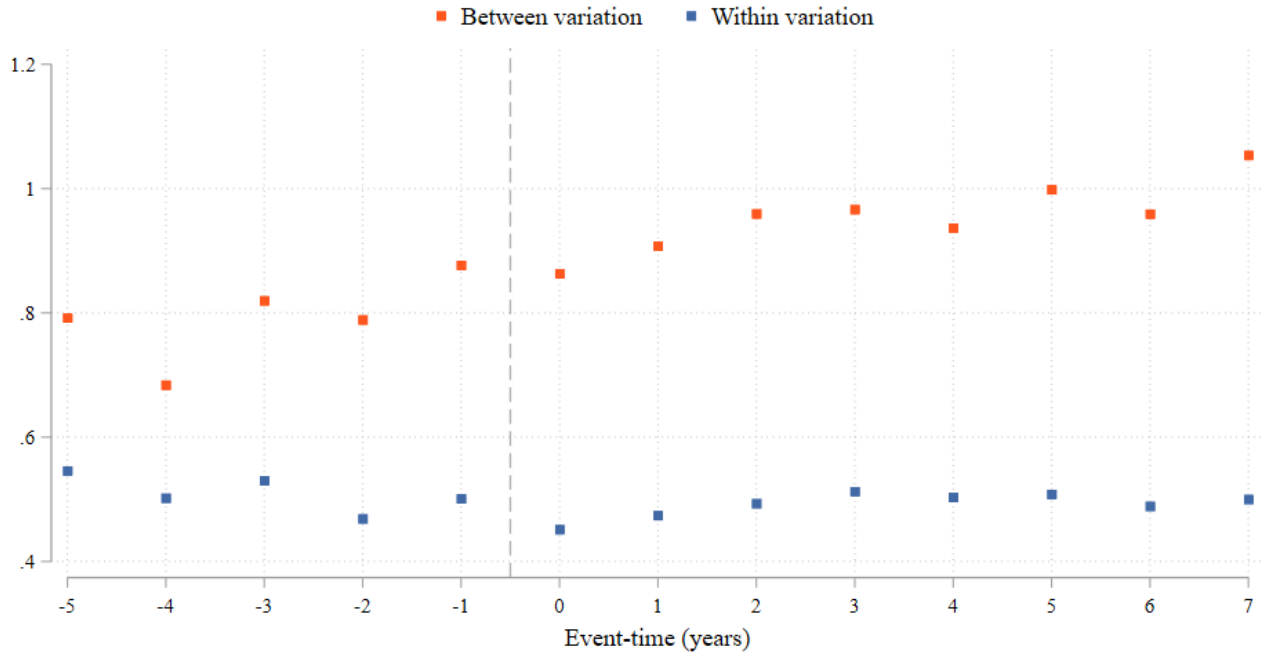
TWFE with tenure as time dimension

Back



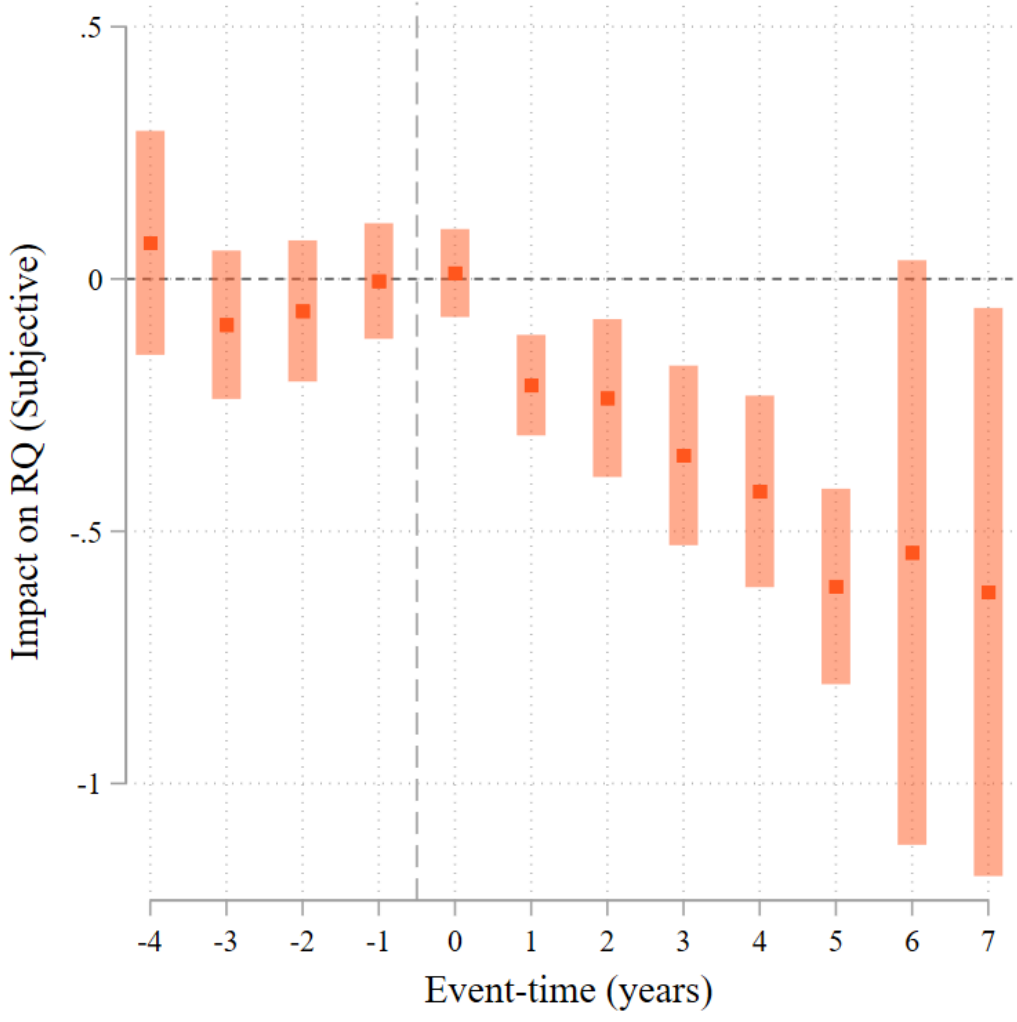
Between vs within individual variation

Back



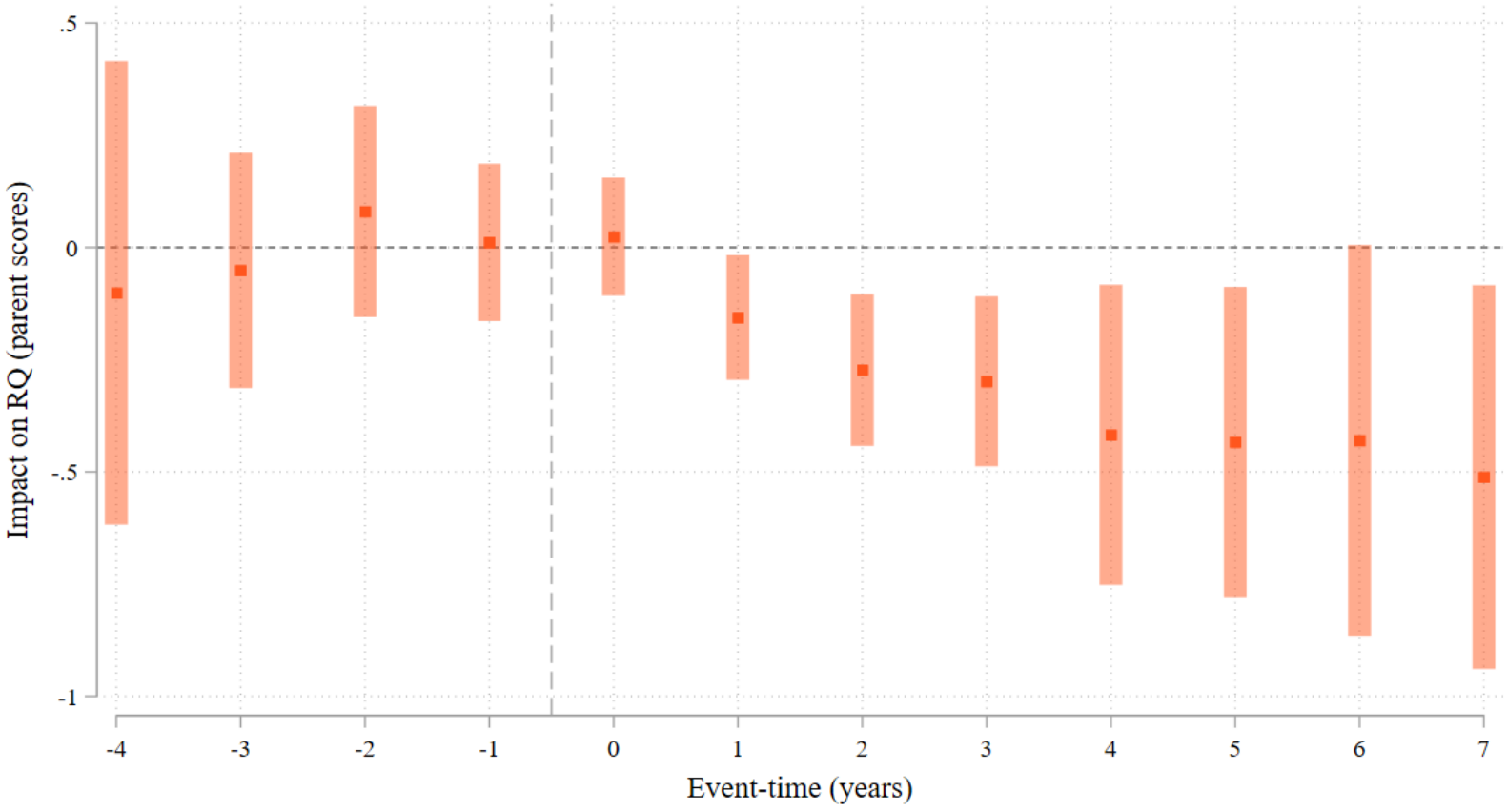
Robustness: Removing time

Back to results



Robustness: RQ using parent scores

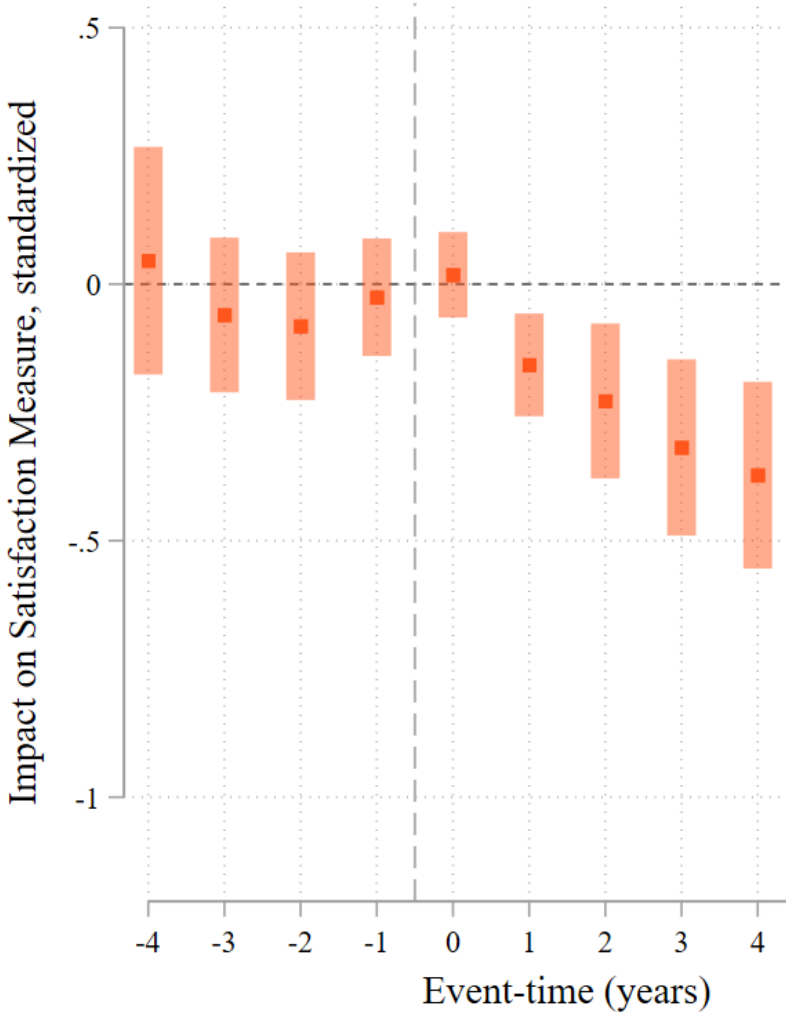
Back



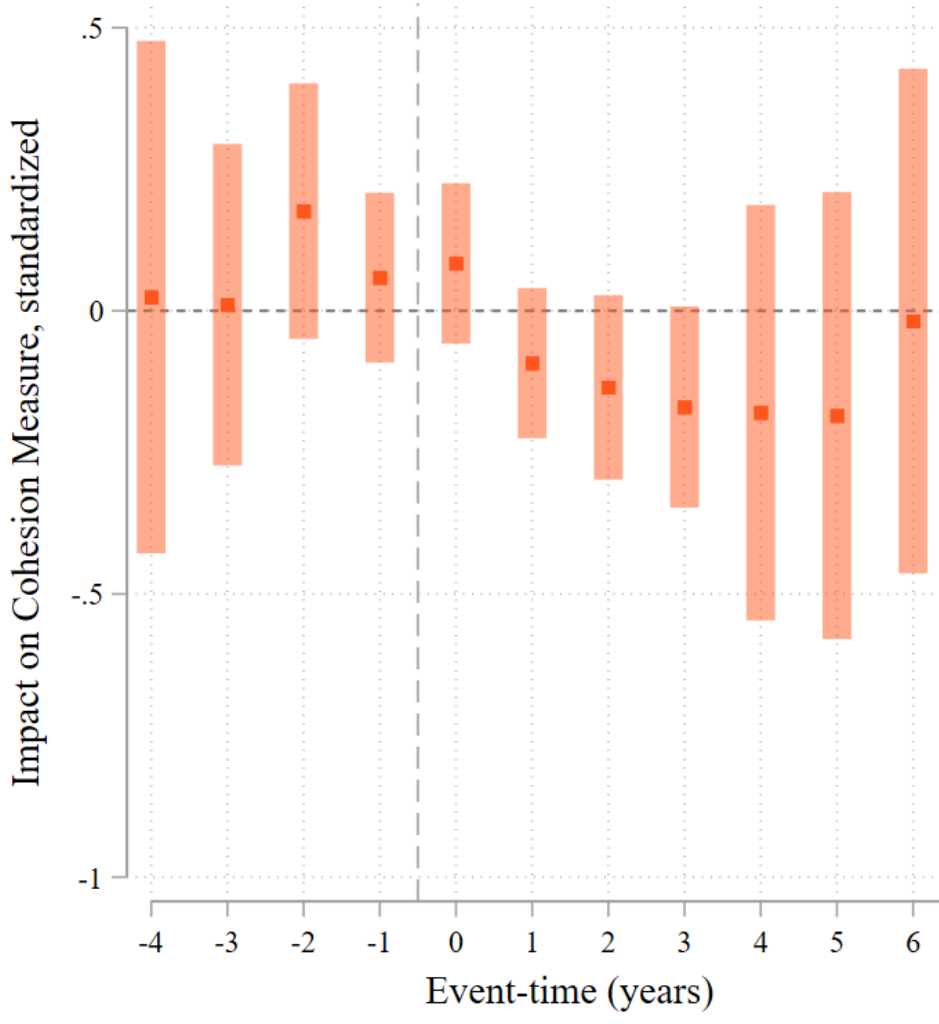
Robustness: Psychology measures

Back to results

(a) Satisfaction RDAS



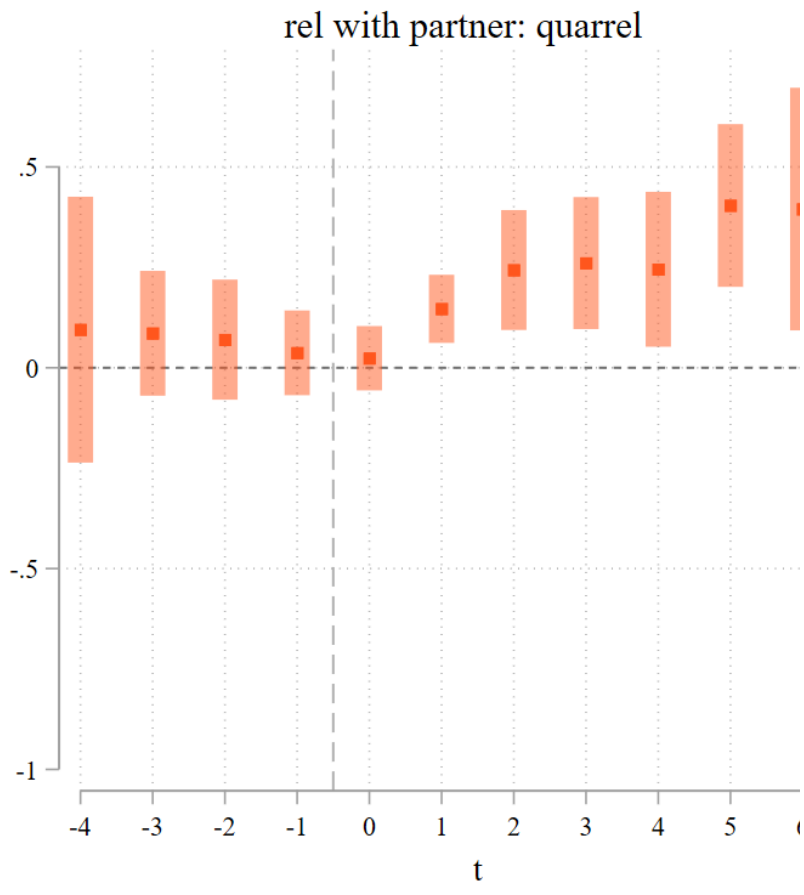
(b) Cohesion RDAS



Impact per item: Subjective assessment

Back

(a) consider splitting

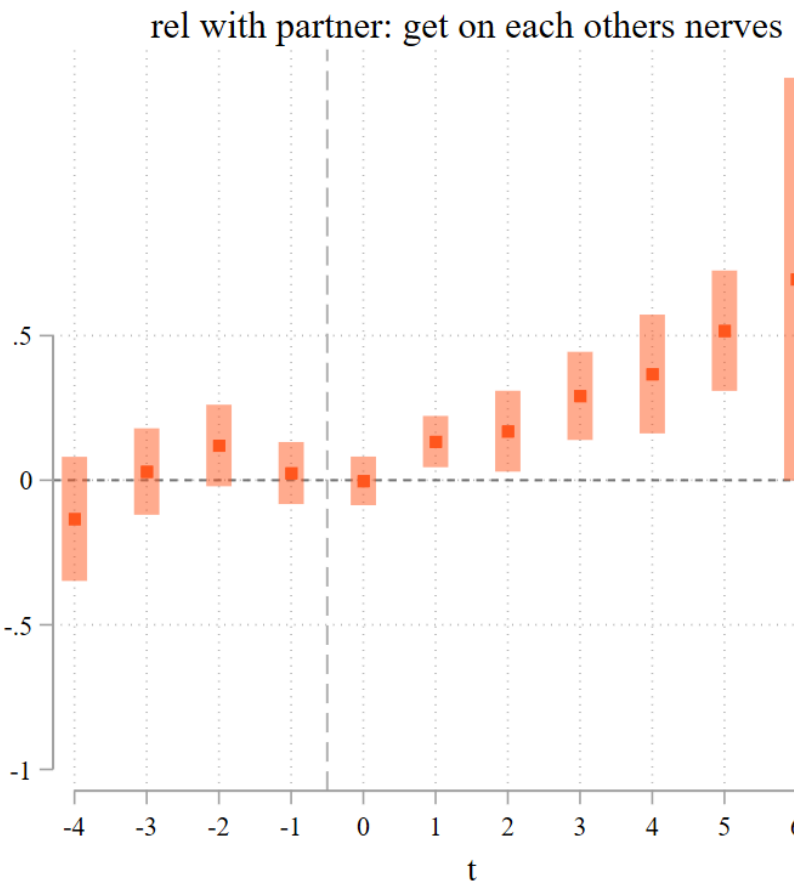


(b) regret getting married

Impact per item: Subjective assessment

Back

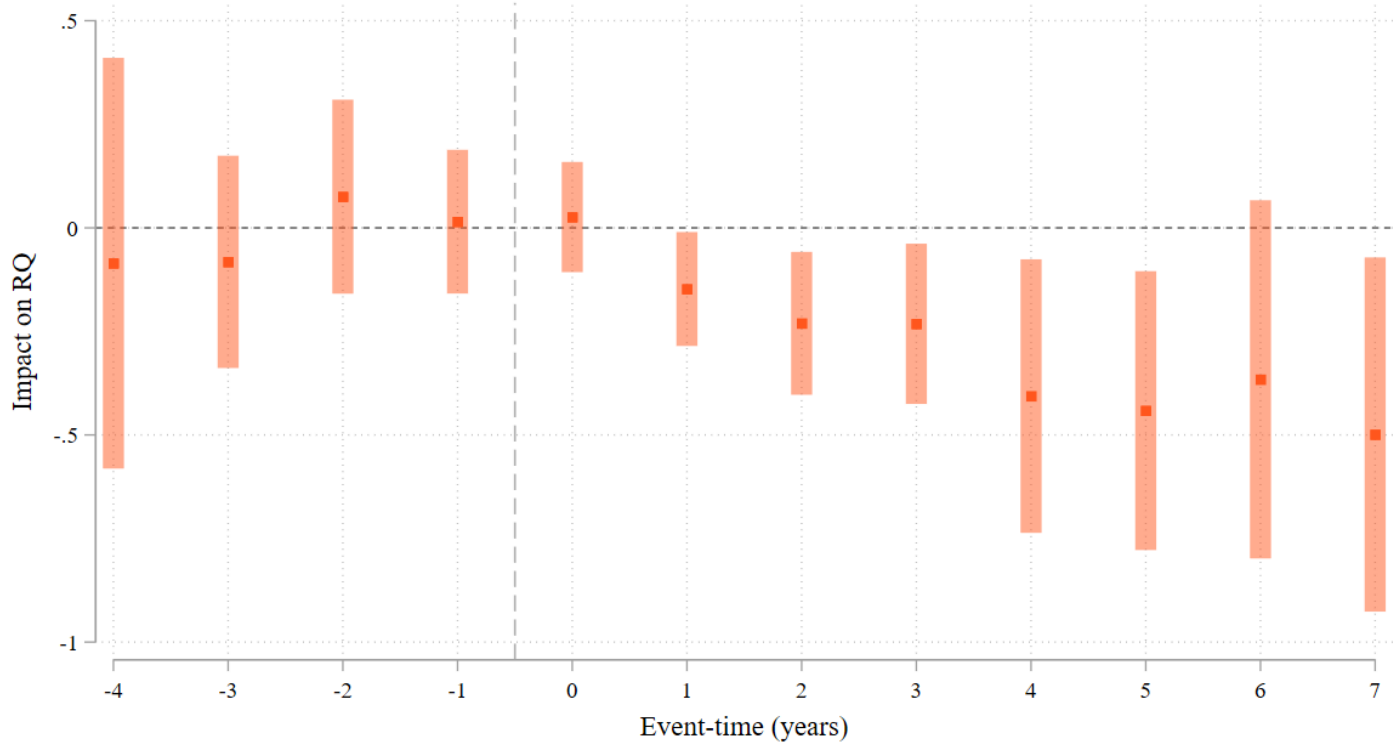
(a) get on each other's nerves



(b) quarrel

Robustness: Couples that don't split

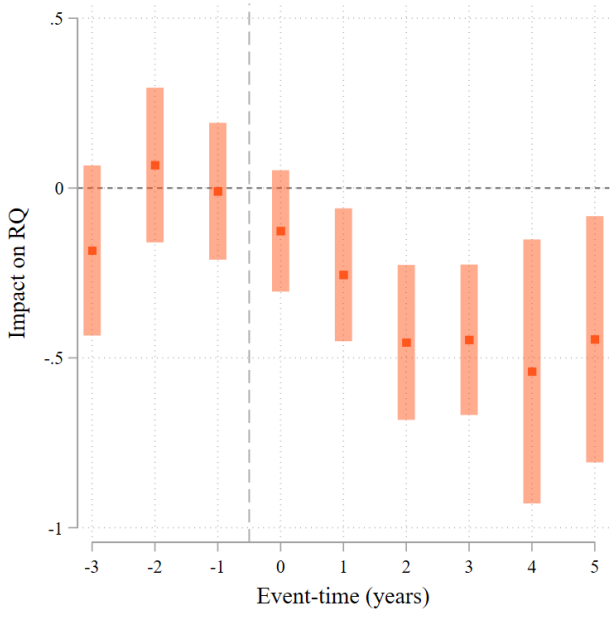
Back



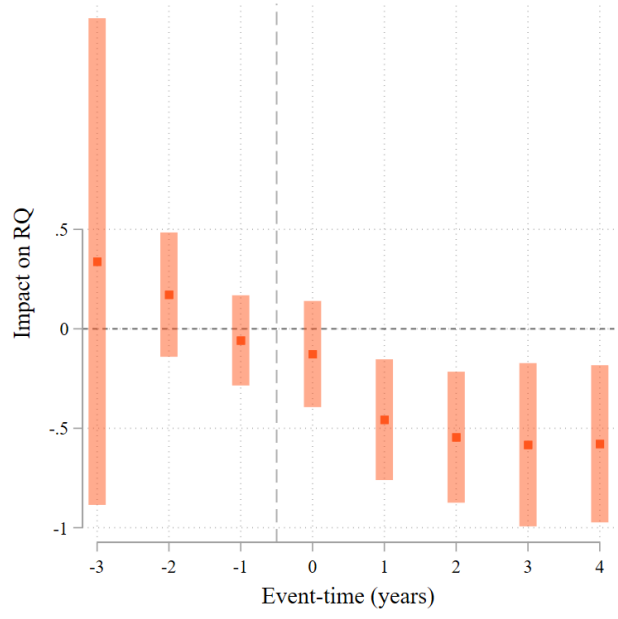
Robustness: Total number of children

Back

(a) one child

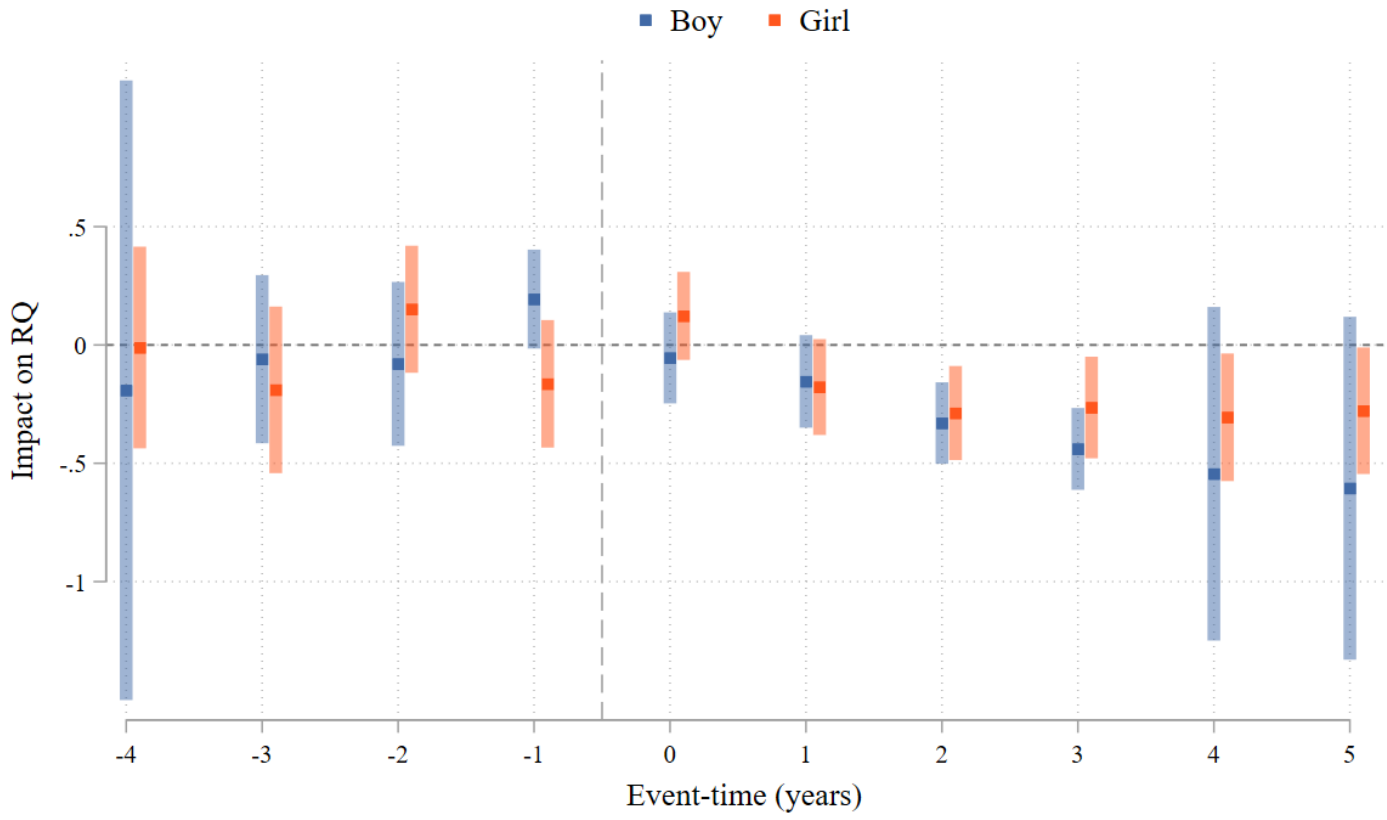


(b) two children



Robustness: Boys vs. girls

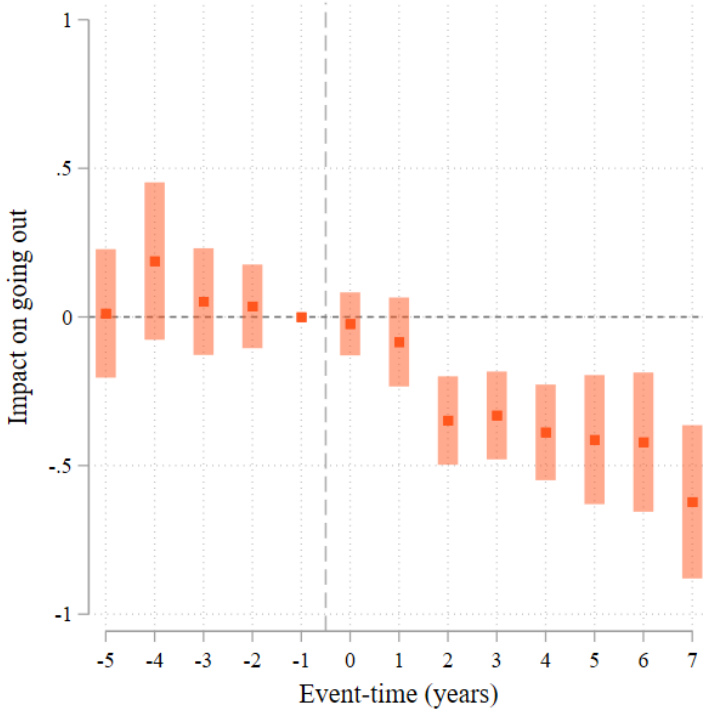
Back



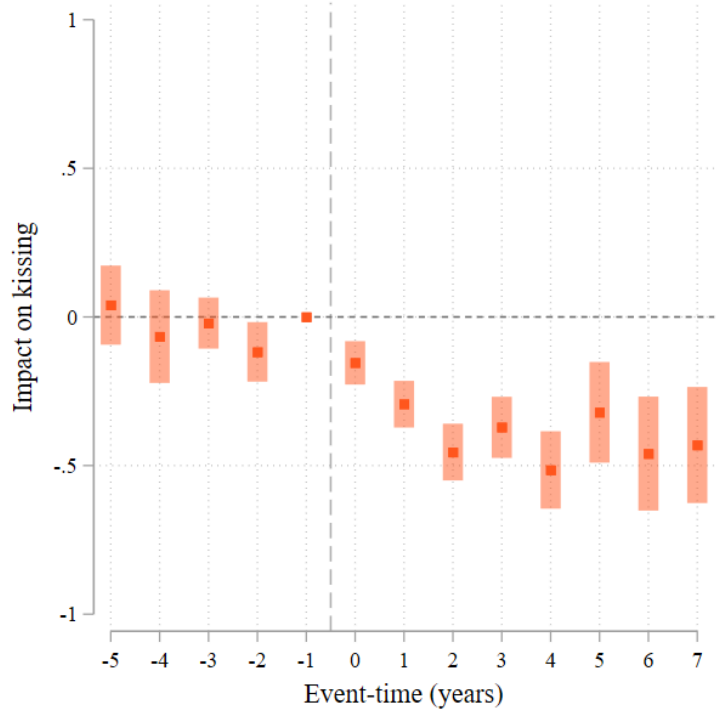
Couple time use (I)

Back

(a) going outside together



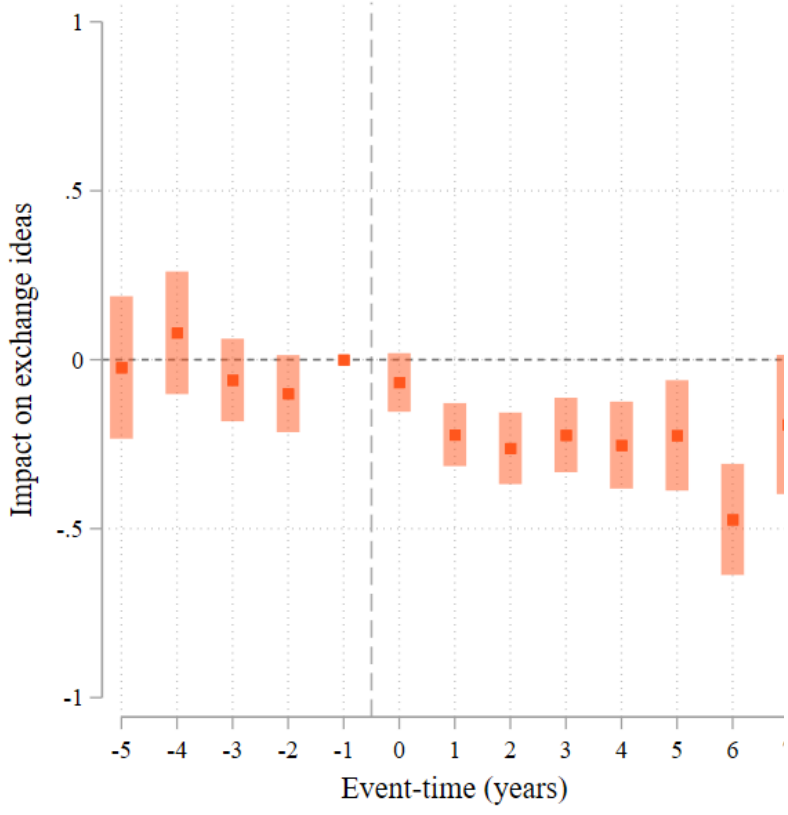
(b) kissing



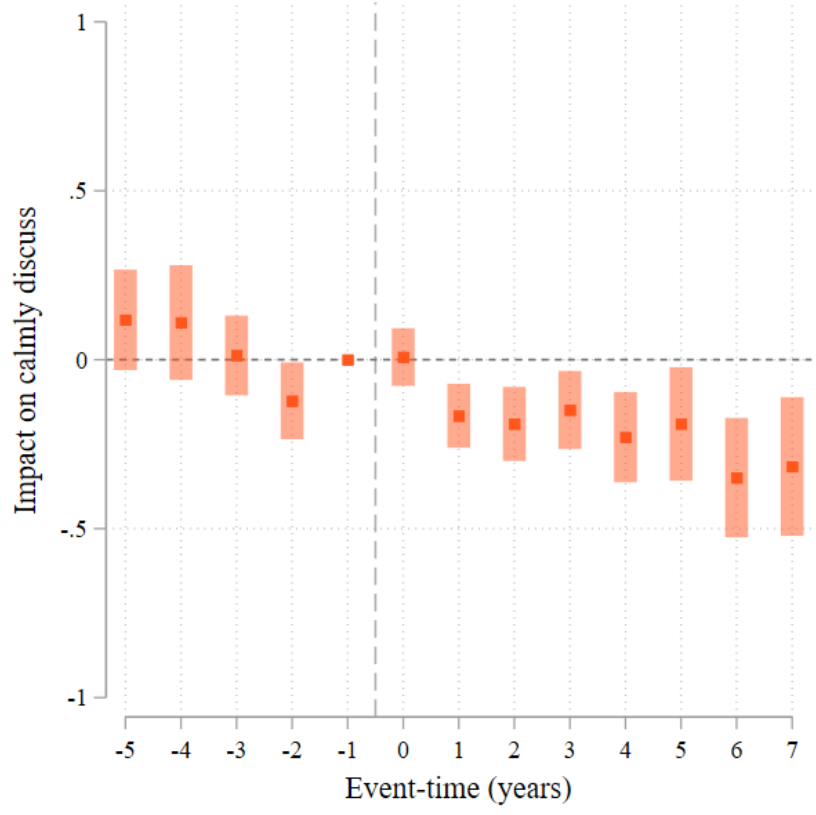
Couple time use (II)

Back

(a) exchange of ideas



(b) calmly discuss something



Household classification

Compute gender splits for each type of work:

$$\text{woman's share} = \frac{\text{woman's hours}}{\text{man's hours} + \text{woman's hours}}$$

Classify couples by split before first child birth:

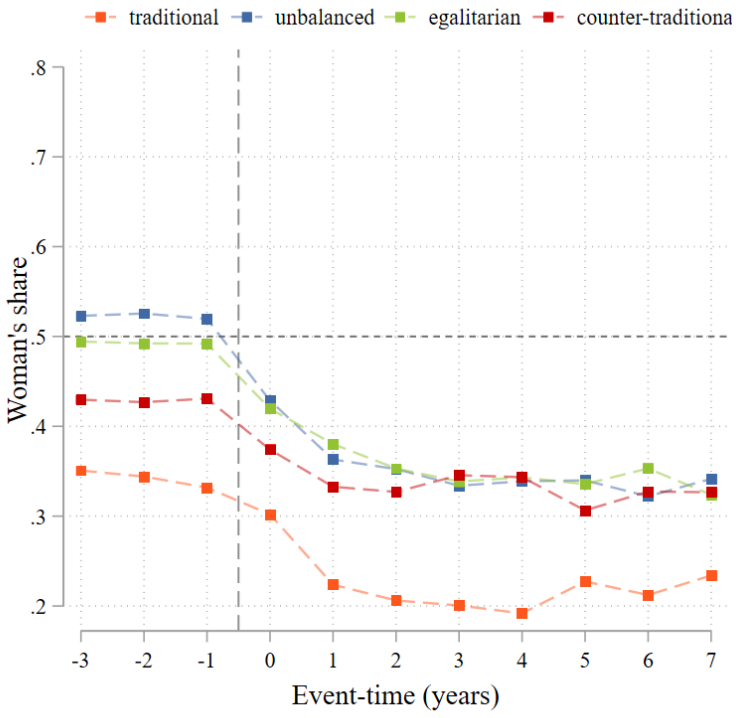
Summary before

- **Traditional**: women specialize in housework and men in paid work
- **Unbalanced**: women take a larger share of both
- **Egalitarian**: there is a 50-50 split of both among couple members
- **Counter-traditional**: men take a larger share of housework or of both types

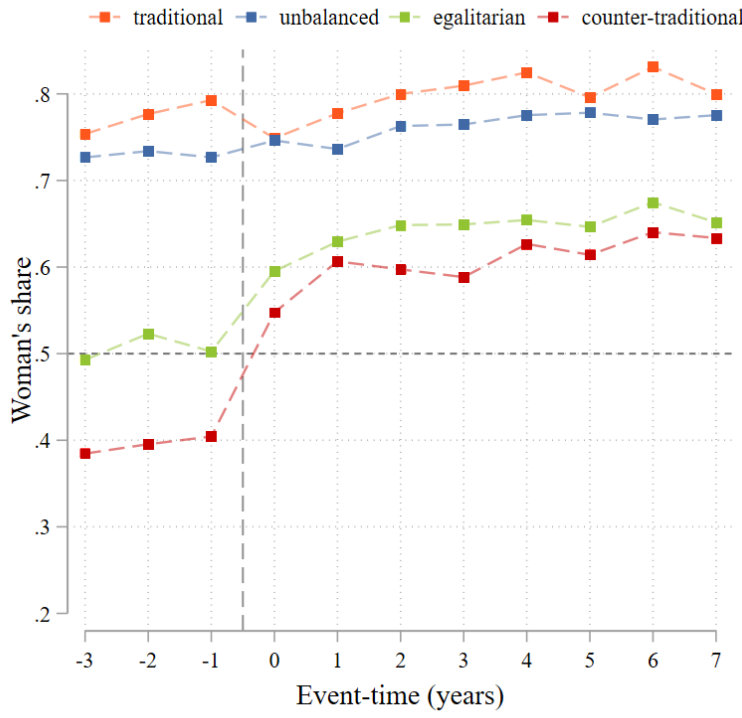
Convergence to a traditional household specialization

Back to mechanisms

(a) Paid work hours



(b) Unpaid housework hours



Summary statistics by couple type, before birth

Back to mechanisms

	Traditional	Burdened woman	Egalitarian	Counter-traditional
Age	29.72	30.12	30.04	29.88
	(5.593)	(5.294)	(4.865)	(5.123)
College educated (%)	32.34	39.89	46.93	47.45
	(46.80)	(48.98)	(49.92)	(49.95)
Employed (%)	87.67	94.24	96.80	93.59
	(32.89)	(23.30)	(17.59)	(24.51)
Gross monthly income	1627.1	1887.5	2068.0	2121.5
	(1351.3)	(1235.5)	(1152.2)	(1357.8)
Work hours (week)	36.26	37.23	37.94	37.53
	(11.45)	(6.266)	(4.523)	(8.499)
Housework hours (week)	7.770	6.921	6.983	7.012
	(6.694)	(5.370)	(3.811)	(4.230)
Tenure	4.160	4.045	4.055	4
	(3.555)	(3.305)	(2.770)	(2.771)
Married (%)	60.97	59.26	50	53.84
	(48.80)	(49.14)	(50.01)	(49.87)
RQ	0.300	0.428	0.513	0.489
	(1.018)	(0.788)	(0.635)	(0.777)
Observations	1363	3456	2098	1668

Summary statistics by couple type, after birth

Back to mechanisms

	Traditional	Burdened woman	Egalitarian	Counter-traditional
Age	37.89	38.27	38.47	37.18
	(7.571)	(7.320)	(7.104)	(7.349)
College educated (%)	27.47	36.03	44.18	39.85
	(44.64)	(48.01)	(49.67)	(48.97)
Employed (%)	76.06	84.26	86.11	82.90
	(42.68)	(36.42)	(34.59)	(37.66)
Gross monthly income	2058.2	2283.5	2546.5	2248.2
	(2018.0)	(1686.2)	(1867.9)	(1754.2)
Work hours (week)	33.86	33.45	33.81	34.05
	(12.73)	(10.18)	(9.180)	(11.85)
Housework hours (week)	11.55	10.56	10.38	9.865
	(10.27)	(9.631)	(7.520)	(7.737)
Tenure	12.25	11.93	11.61	10.58
	(6.733)	(6.337)	(5.947)	(5.683)
Married (%)	93.90	95.10	94.01	92.05
	(23.93)	(21.59)	(23.73)	(27.05)
RQ	-0.134	-0.0360	0.145	0.0284
	(0.958)	(0.879)	(0.824)	(0.962)
Observations	3559	7939	4391	3007

Appendix: DiD specification

Back

$$y_{it} = \alpha D_{it} + \sum_{j=1}^{4} \delta_j C_i^j + \sum_{j=1}^{4} \gamma_j D_{it} \times C_i^j + \mathbf{X}_{it}\beta + u_{it}$$

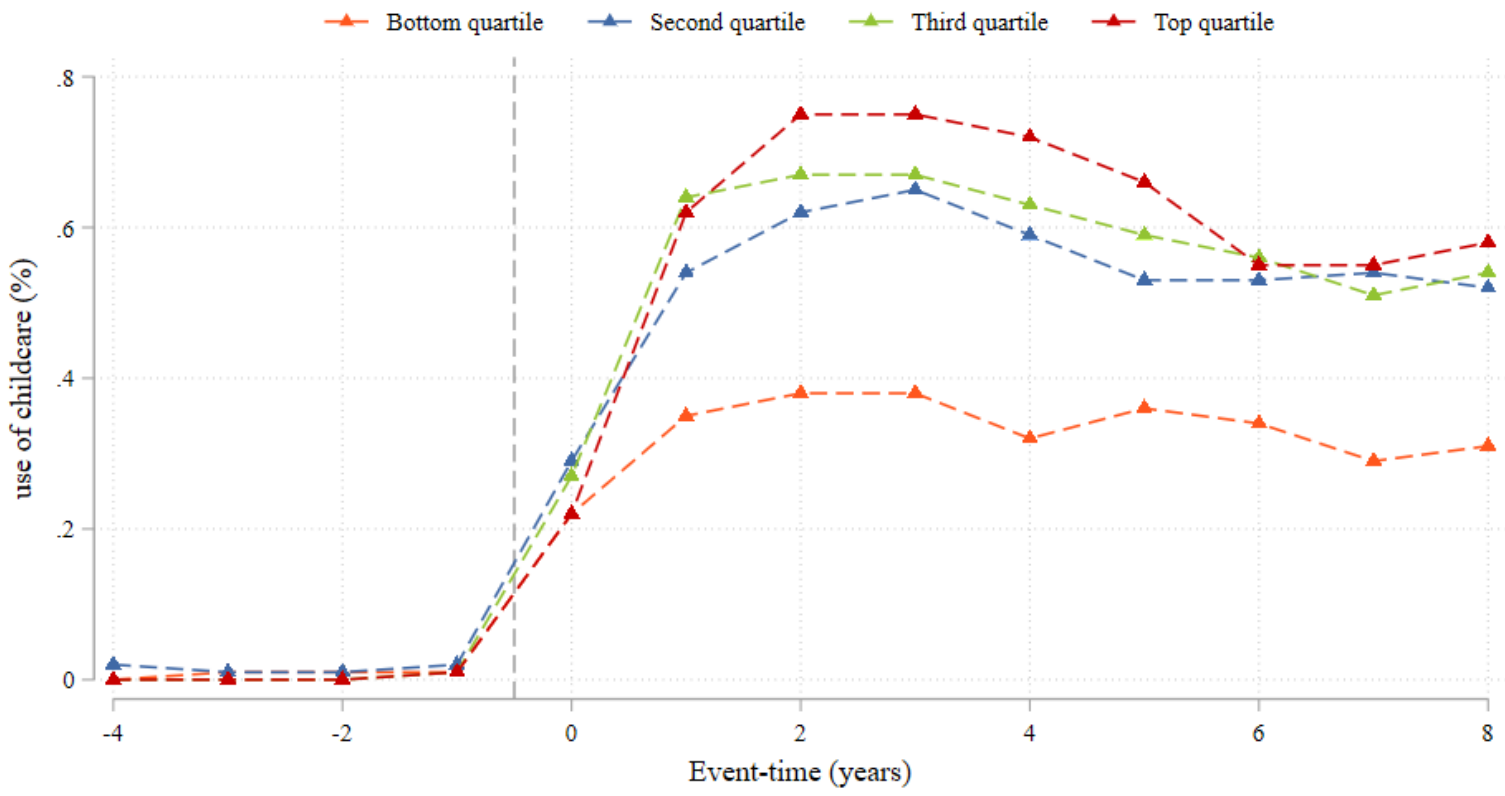
D_{it}: post-child birth dummy
C_i^j: type of pre-birth gender split

	Traditional	Unbalanced	Egalitarian	Counter-traditional
Baseline RQ	0.300 (1.018)	0.428 (0.788)	0.513 (0.635)	0.489 (0.777)
Impact	-0.149 (0.183)	-0.107 (0.092)	-0.218*** (0.078)	-0.353*** (0.097)
Observations	1363	3456	2098	1668

Estimated marginal effects of child birth for each type of couple

Childcare use across the income distribution

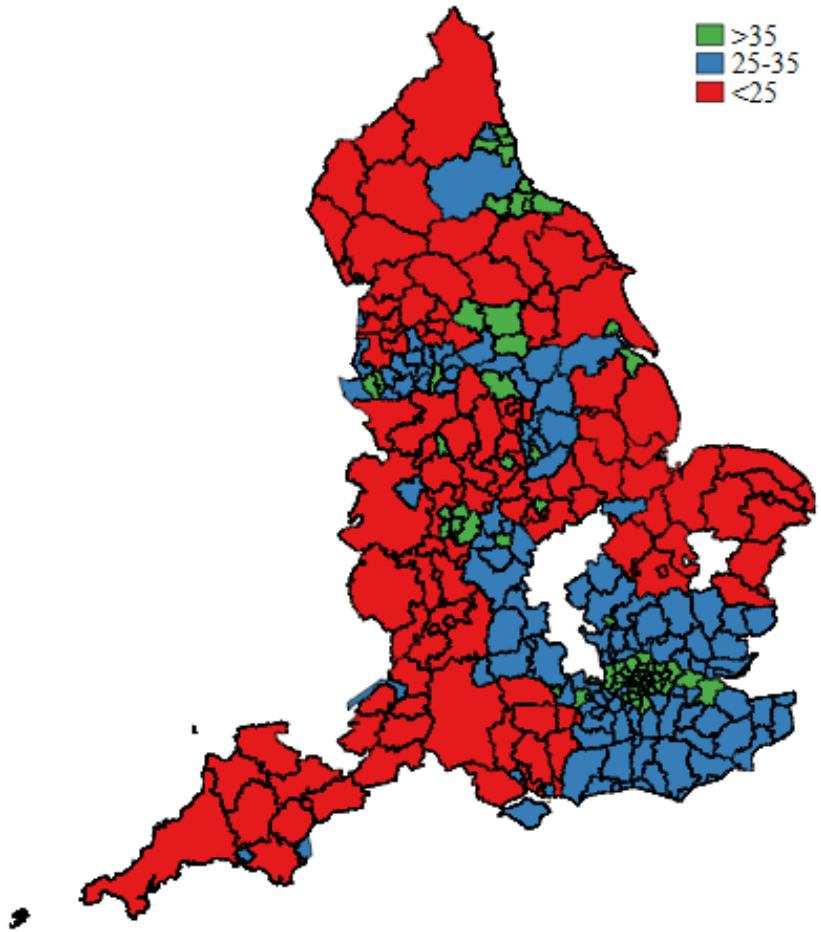
Back



Number of three-and four-years olds per childcare centre, 2017

Back to policy

Instrument take-up: number of eligible children per state-funded childcare center



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