How much his or her job loss influences fertility

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Bocconi

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Background

- Are labour market protection and mobility associated with fertility?
  - **Germany** provides more generous unemployment benefits and more comprehensive packages for family-work reconciliation.
  - **United Kingdom**'s job turnout is higher and unemployment duration is lower.
  - UK's total fertility rate has been higher than Germany's in the last three decades
    - ★ Immigration
    - ★ Culture
    - ★ Labour market institutions
    - ★ Family-work reconciliation
    - ★ Other

Context

Labour market institutions

United Kingdom

Internal labour market access

Vocational skills acquired through work experience and firm-specific

Higher turnover $\Rightarrow$ stronger incentive to job resumption

Flat-rate unemployment benefits

Low flat-rate benefits (6-month insurance;up to 34% replacement).

Means-tested benefits (e.g., jobseeker allowance, tax exemptions etc...)

Germany

Occupational labour market access

Strong links between education and employment (vocational studies)

Lower turnover and longer u/e duration (at least 1 year for 50% of workers)

Proportional unemployment benefits

Fairly generous unemployment benefits (12-month insurance;up to 60% replacement).

Market reforms "Hartz" (2003-05)

Context

Family-work reconciliation

United Kingdom

Limited Parental leave

Flat-rate 39-week paid maternal leave (from 2007, 26 weeks from 2003, 18 weeks from 1992)

Take-up of the 2-week paid paternity leave (2003)

Mainly private childcare

Part-time childcare for all 4-yo (1998) extended to 3-yo by 2010, and mainly state-funded for low-income families

Germany

More generous parental benefits

Flat-rate maternity leave benefits, with a maximum leave duration of three years (since 1992).

Parental leave can be shared between partners.

Full-time public childcare

Childcare guaranteed to virtually all children aged 3 and older since 1996.

Background

- Are labour market protection and mobility associated with fertility?
  - **Germany** provides more generous unemployment benefits and more comprehensive packages for family-work reconciliation.
  - **United Kingdom**'s job turnout is higher and unemployment duration is lower.
  - UK's total fertility rate has been higher than Germany's in the last three decades

- *Macro/micro-level* evidence puzzle?
  - *Macro*: $\Uparrow$ Unemployment $\rightarrow\Downarrow$ fertility (e.g., Adserá 2011).
  - *Micro*: $\Uparrow$ Unemployment $\rightarrow\Downarrow$ fertility for *men* (not for women); heterogeneity (type of LM uncertainty, country context, etc.; e.g., Alderotti et al. 2022).
    - ⋆ Mostly individual-based evidence (individual u/e; individual fertility).
    - ⋆ But partners' characteristics matter; and fertility is the outcome of a intra-household bargaining process (e.g., Lundberg & Pollack 1993, Doepke & Tertilt 2018).

Motivation

Are we correctly identifying the relationship between job loss and childbearing?

- We should account for **partners' characteristics**, which influence the decision to have a baby.
  - By analysing couples' fertility and exploring heterogeneity across *types of couples*
- We should better account for the possible **self-selection** within unemployment and fertility.
  - By addressing a possibly quasi exogenous source of job separation

Motivation

Are we correctly identifying the relationship between job loss and childbearing?

- E.g., Couples might leverage one partner's unemployment to "ease" the reconciliation between work and childbearing.
  - We should address whether job separation is *voluntary* or *involuntary*
  - A job loss
    - ★ is a *non-voluntary* job separation (plant closure, mass layoff / redundancy, dismissal)
    - ★ can represent a shock ($\rightarrow$ *out of a couple's control*) that can generate economic uncertainty (Baumann, 2016) and change default intra-household bargaining.
    - ★ $\neq$ unemployment
    - ★ $\neq$ time-limited employment

Research goals

1. What's the impact of job loss on the risk of birth in the short and medium term (within 5 years)?
   - By the gender of the coresident (cohabiting or married) partner hit by a job displacement

2. What's the impact of a job loss on birth risk across subgroups of couples?
   - partners' share of income
   - couple's income level
   - birth order
   - woman's age

Contribution

- Couple's childbearing
- Job loss of both women and men
- Focus on couples' characteristics
- Long time-span (1991-2019)

Mechanisms

1. *Negative effect*
   - Job displacement $\rightarrow$ lower earnings $\rightarrow$ less economic resources to invest on a child's upbringing $\rightarrow \Downarrow$ probability of a birth
   - Job displacement $\rightarrow$ anxiety $\rightarrow$ uncertainty on future prospect $\rightarrow \Downarrow$ probability of a birth
   - Job displacement $\rightarrow \Uparrow$ risk of divorce/risk of disease $\rightarrow \Downarrow$ probability of a birth

2. *Positive effect*
   - Job displacement $\rightarrow$ lower earnings $\rightarrow \Downarrow$ opportunity cost of raising children $\rightarrow \Uparrow$ probability of a birth in the short term

Hypothesis 1a. Men's displacement has a *negative* effect.
Hypothesis 1b. Women's displacement has a *uncertain* effect.

Mechanisms

Heterogeneity

1. *Share of income*
   - **Hypothesis 2**. Male breadwinner & specialised couples are *more exposed* to the job loss of the main earner *wrt* dual earner ones.

2. *Couple's income level*
   - **Hypothesis 3**. Intermediate income couples could be *worse off* compared to the other couples.

3. *Birth order*
   - **Hypothesis 4**. The first birth might be *less responsive* to a job loss.

4. *Woman's age*
   - **Hypothesis 5**. Younger women (24-30) are *less likely* to be harmed by a job loss

Data

BHPS/UKHLS (UK) - SOEP (Germany)

- Unit of analysis: married and cohabiting couples
- Period: 1991 - 2019
- Age: 24-45 (women) - 24-50 (men)
- In the survey for at least 2 consecutive waves
- At least one partner with 1-year tenure (no agriculture sector)
- Our sample: 15,029 (Germany) and 15,932 (United Kingdom)

Methods

Treated couples

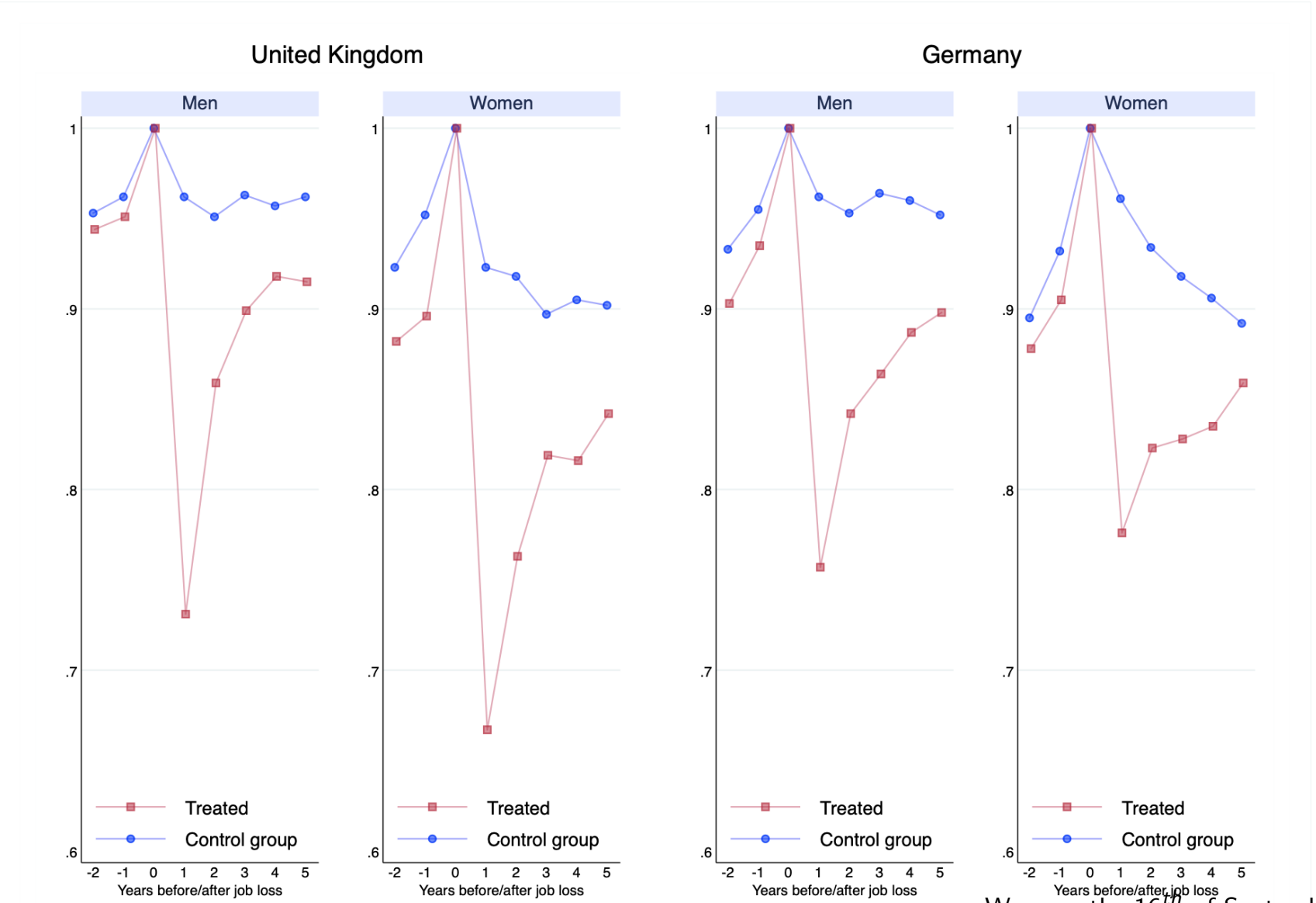
- At least one episode of *involuntary* job loss
  - dismissals & redundancies (United Kingdom): 4,186 episodes
  - firm closure & layoffs (Germany): 3,561 episodes

Control couples

- *No* episode of job loss during the survey years
- Up to *one year before* and *three years after* any episode of job loss

Descriptive Results

Employment shares. Treated vs Controls.



Methods

- Linear Probability model
- Inverse Probability Weighting
  - To tackle selection into unemployment $\Rightarrow \downarrow$ *bias*
    1. Construct the weights to estimate a logit model of the probability of being hit by an involuntary unemployment $\rightarrow$ get a propensity score for the treatment
    2. Assign different weights to treated and the controls (inverted probability of being unemployed)

Variables

- Dependent variable
  - A dichotomous variable indicating the birth in a *given year* and in *each of the following 4 years*
- Explanatory variable
  - A binary indicator of job loss
- Controls
  - Partners' age (linear & quadratic)
  - Partners' education
  - Shared children (0,1,2+)
  - Children from previous unions
  - Married/cohabiting
  - Job class (5 cat., 1-yr lag)
  - Union duration (UK only)
  - Tenure in years
  - HH income (1-yr lag)
  - Year FE
  - Unemp. rate in NUTS-1

Results

Cumulative probability of birth after a job loss.

United Kingdom

	Women's job loss					Men's job loss				
	LPM		IPW			LPM		IPW		
Years	β	*sd*	β	*sd*	*N*	β	*sd*	β	*sd*	*N*
1	-0.03***	0.01	-0.03***	0.01	69,687	-0.02***	0.01	-0.02***	0.01	84,103
2	-0.03***	0.01	-0.03***	0.01	63,312	-0.02***	0.01	-0.02***	0.01	76,409
3	-0.04***	0.01	-0.05***	0.01	57,565	-0.02†	0.01	-0.03***	0.01	69,473
4	-0.04***	0.01	-0.05***	0.01	52,314	-0.01	0.01	-0.02†	0.01	63,137
5	-0.03**	0.01	-0.04***	0.01	47,514	-0.01	0.01	-0.02†	0.01	57,343

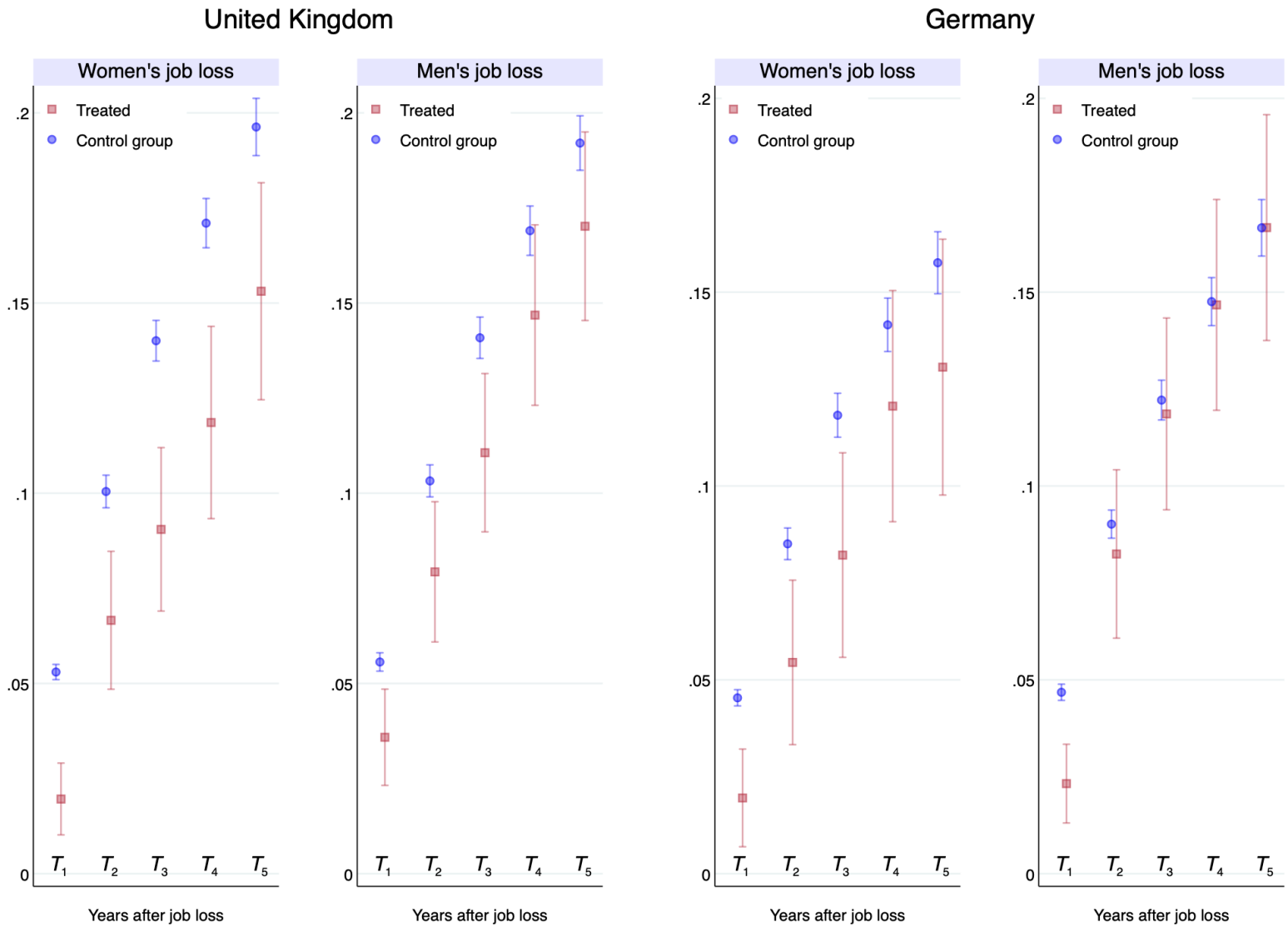
Germany

	Women's job loss					Men's job loss				
	LPM		IPW			LPM		IPW		
Years	β	*sd*	β	*sd*	*N*	β	*sd*	β	*sd*	*N*
1	-0.02***	0.01	-0.03***	0.01	62,526	-0.02***	0.01	-0.02***	0.01	76,900
2	-0.02***	0.01	-0.03***	0.01	57,181	-0.01†	0.01	-0.01	0.01	70,128
3	-0.04***	0.01	-0.04***	0.01	52,334	-0.01	0.01	0.00	0.01	64,062
4	-0.03**	0.01	-0.02	0.01	47,874	-0.01	0.01	0.00	0.01	58,448
5	-0.03**	0.01	-0.03	0.01	43,768	-0.01	0.01	0.00	0.01	53,332

All controls included. Significance levels: † $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

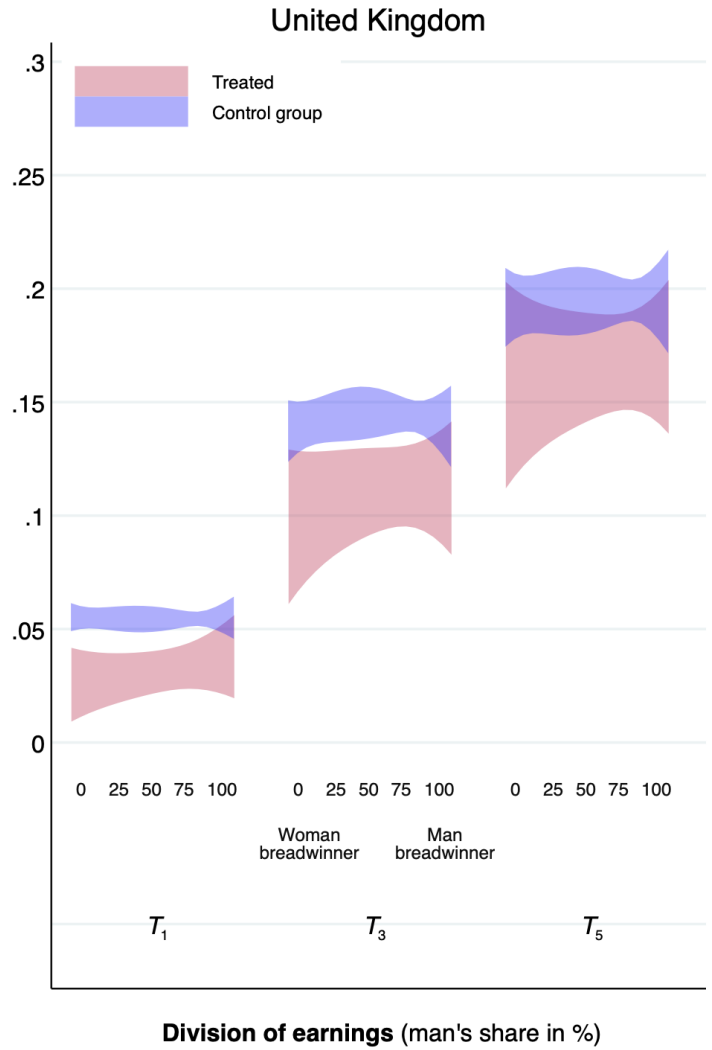
Results

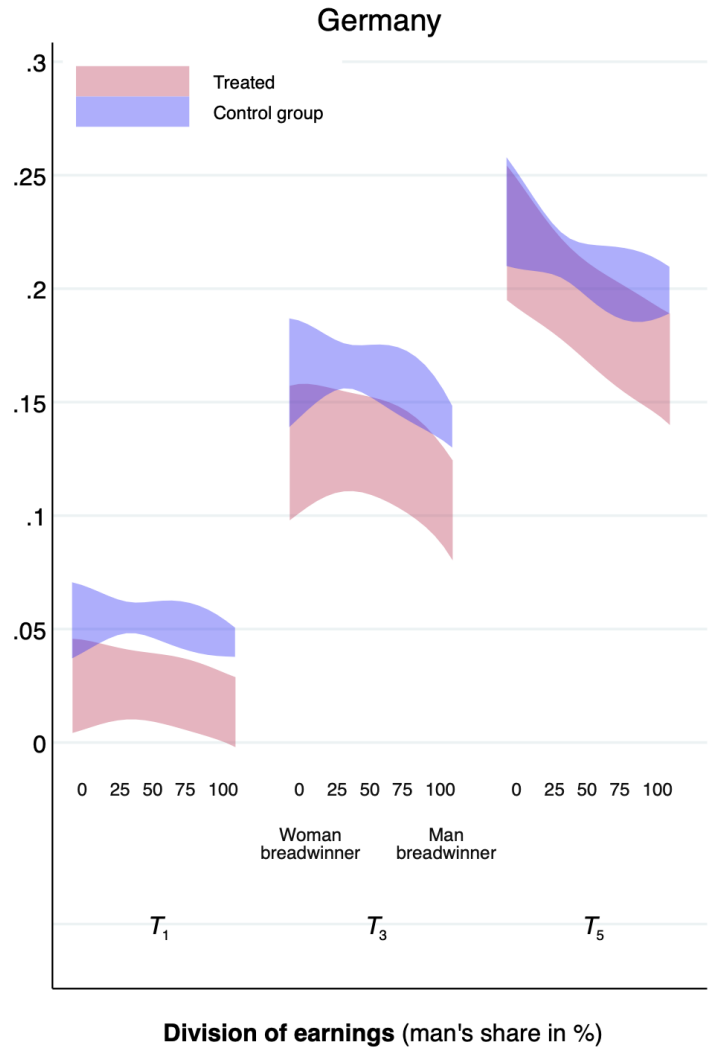
Cumulative probability of a birth. Treated vs Controls. IPW.



Results

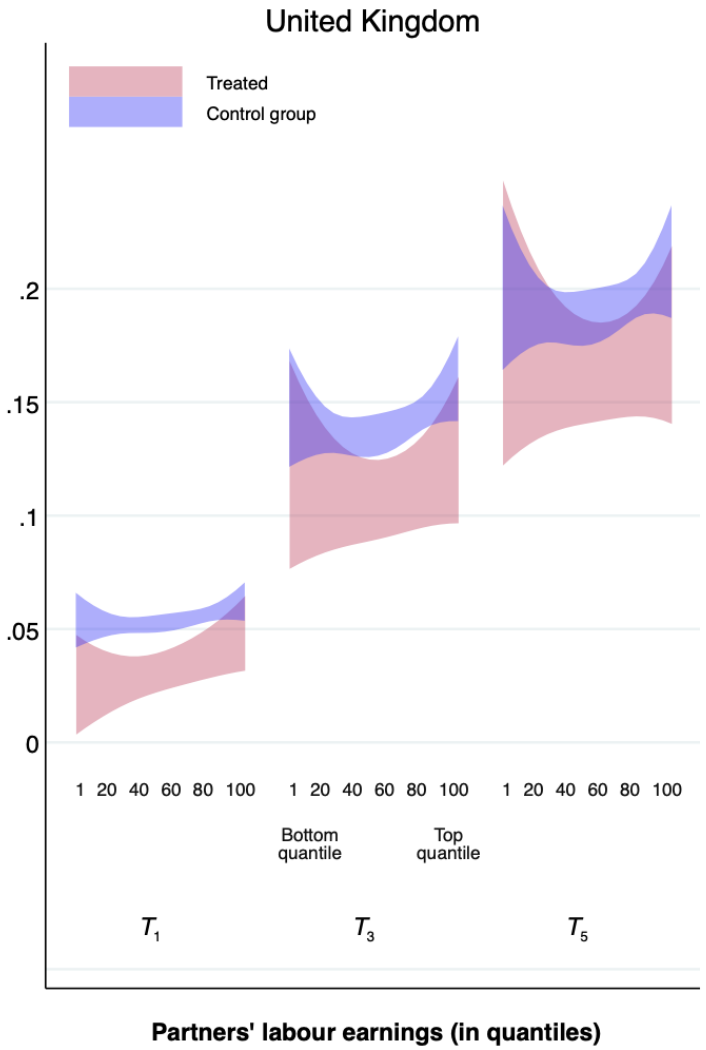
Cumulative probability of a birth, by partners' income shares.

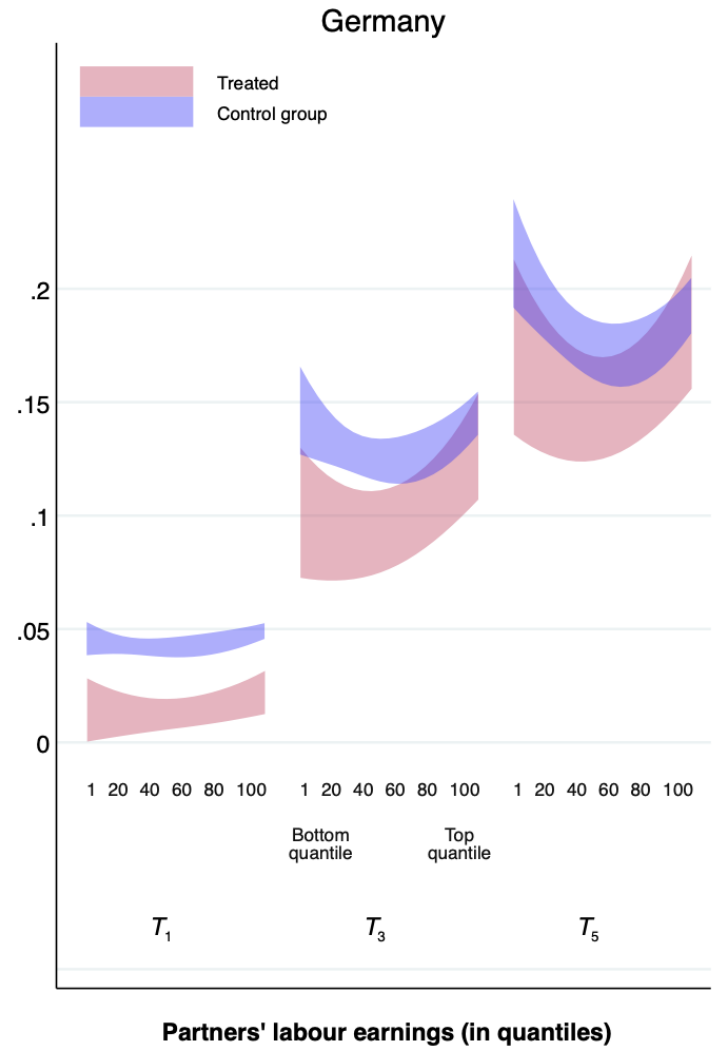




Results

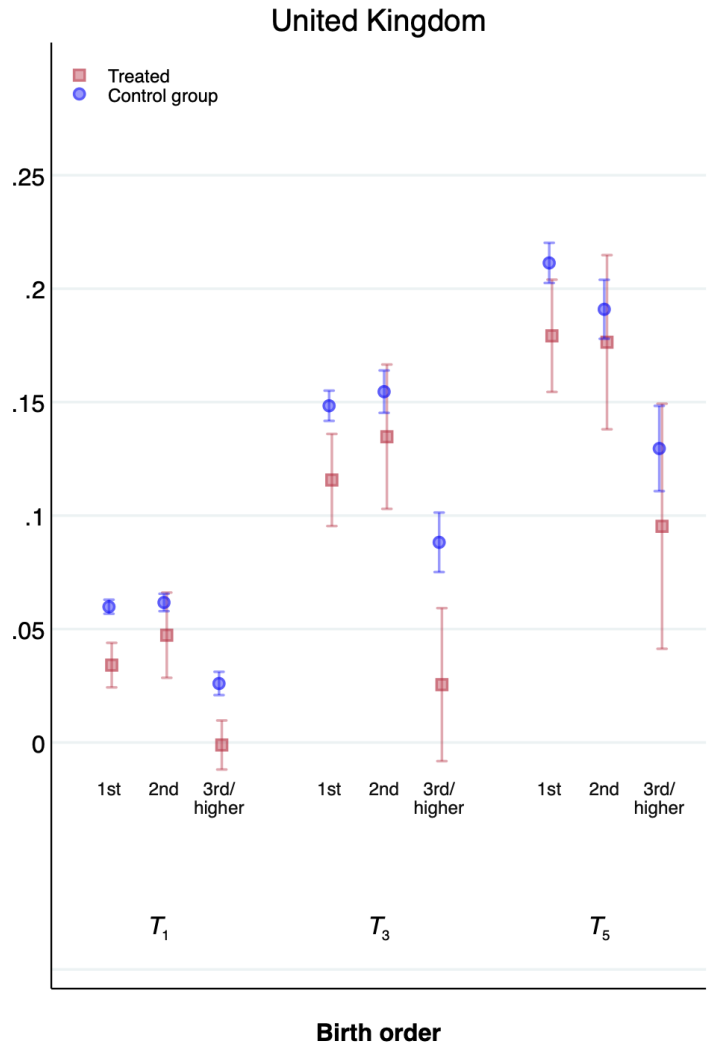
Cumulative probability of a birth, by couple's income.

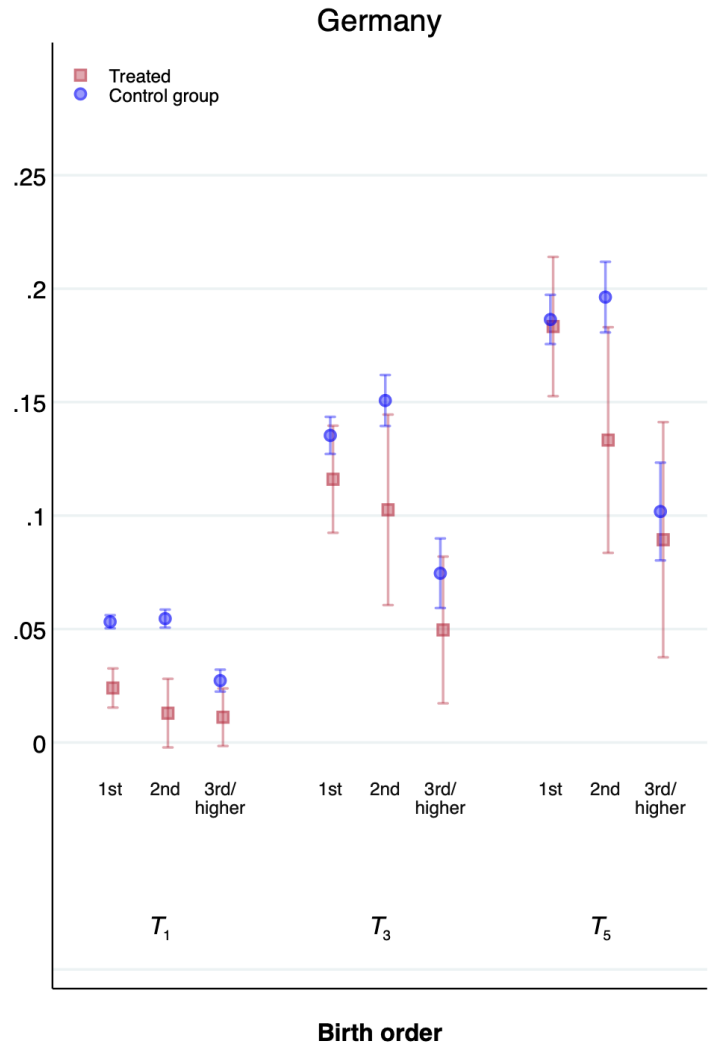




Results

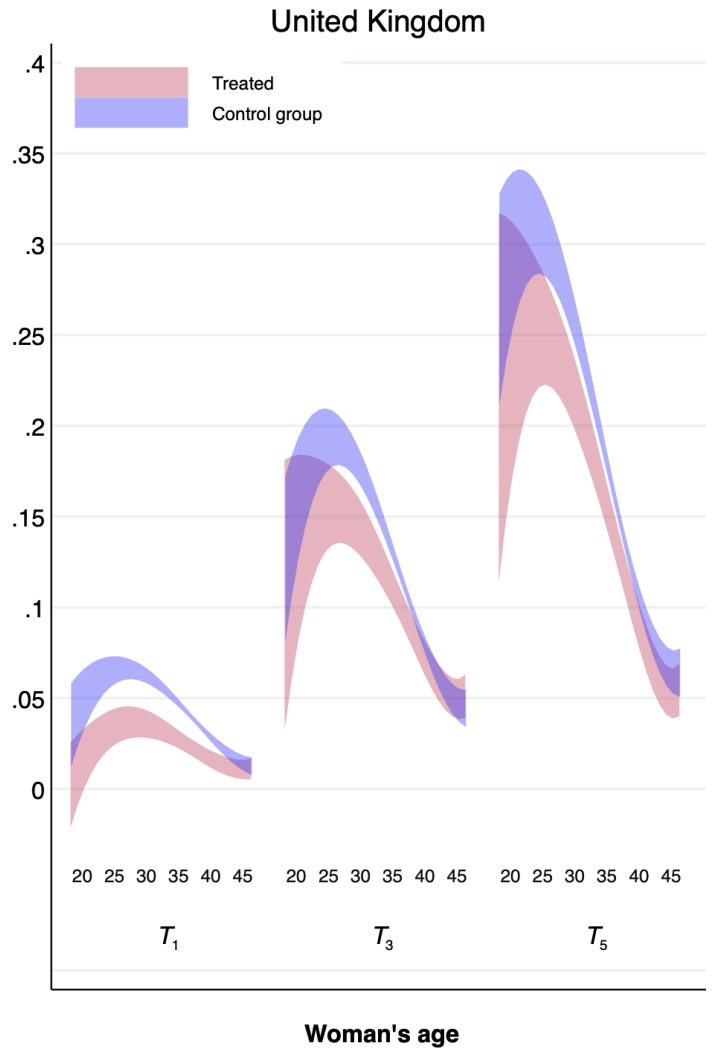
Cumulative probability of a birth, by birth order.

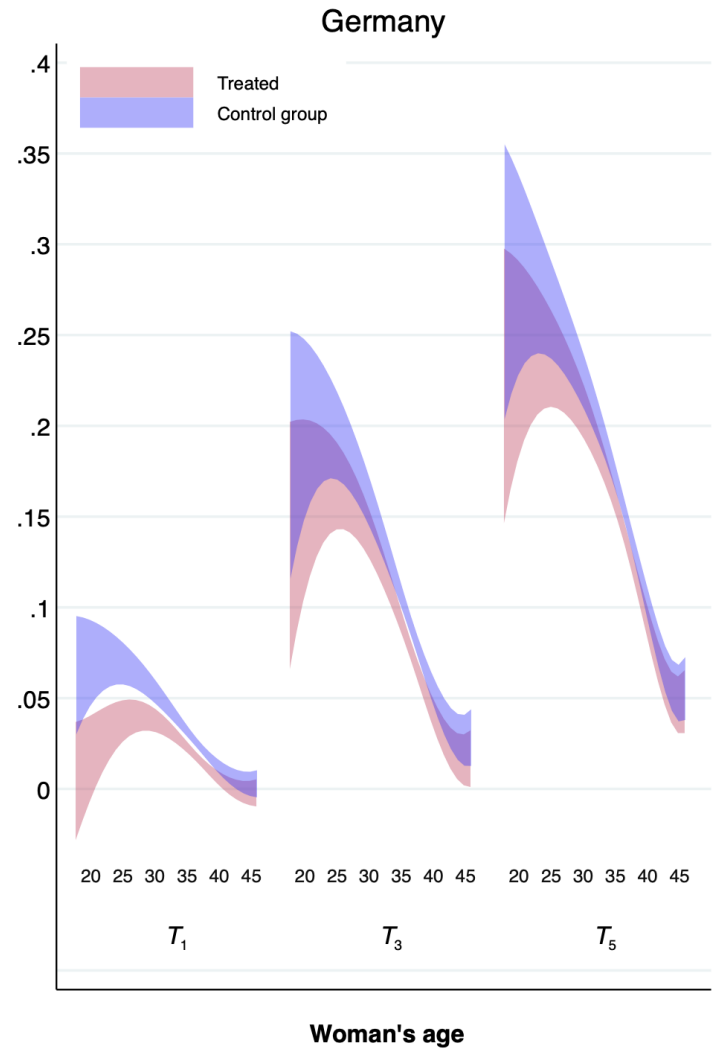




Results

Cumulative probability of a birth, by women's age.





Conclusions

- What's the impact of unemployment on the birth in the short and mid-run?
  - In the United Kingdom the effect is consequential for men and to larger extent for women in the midterm.
    - ⋆ A man's job loss $\rightarrow \downarrow$ P(birth) by **2** pp in T_1 and up until T_5 ($p < 0.1$)
    - ⋆ A woman's job loss $\rightarrow \downarrow$ P(birth) by **3** pp in T_1 until **4** pp in T_5 ($p < 0.001$)
  - Also in Germany, the effect is consequential for women until T_3.
    - ⋆ A man's job loss $\rightarrow \downarrow$ P(birth) by **2** pp in T_1. Not significant thereafter.
    - ⋆ A woman's job loss $\rightarrow \downarrow$ P(birth) by **3** pp in T_1 and **4** pp in T_3. Not significant in T_5

Conclusions

- Women's job loss seems consequential in Germany and, to larger extent, in the UK.
- **H1**: Income effect + uncertainty + divorce/health $\gg$ Substitution effect
  - UK labour market & welfare state might exacerbate the effect of job loss on birth.
  - Risk of uncertainty trap for unprotected jobs for British workers and, in particular, women?

Conclusions

- What's the impact of unemployment on the birth in the short and mid-run across groups?
  - Partners' share of income (**H2**)
    - ★ In the UK, dual-earner couples are hit more than other couples until T_3.
    - ★ In Germany, dual-earner and male-breadwinner couples are marginally more affected until T_3
  - Income level (**H3**)
    - ★ In the UK, the mid-to-high-income couples are mainly hit (T_3).
    - ★ In Germany, the low-to-middle-income group is the most affected (T_3).
  - Birth order (**H4**)
    - ★ In the UK, job loss is more consequential on *first* births (until T_5).
    - ★ In Germany, job loss is more consequential on *second* births (until T_5).
  - Age (**H5**)
    - ★ In the UK, 30-40 year-old women are the most affected.
    - ★ In Germany, 35-40 year-old women are marginally affected (large variance).

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Appendix

Back

ID	Obs	Wave	Status F	Tenure F	Age F	Status M	Tenure M	Age M	Both LF	U/e	Included in the sample	Time job loss	Birth
1	1	4	Other	0	22	Other	0	25	No	No	Not included	/	0
1	2	5	Other	0	23	Other	0	26	No	No	Not included	/	0
1	3	6	Other	0	24	Other	0	27	No	No	Not included	/	0
1	4	7	Other	0	25	Work	<1	28	No	No	Not included	/	0
1	5	8	Work	<1	26	Work	1+	29	Yes	No	Treated	-2	0
1	6	9	Work	1+	27	Work	1+	30	Yes	No	Treated	-1	0
1	7	10	Work	1+	28	U/e	1+	31	Yes	Yes	Treated	0	0
1	8	11	Work	1+	29	Work	1+	32	Yes	No	Treated	1	0
1	9	12	Work	1+	30	Work	1+	32	Yes	No	Treated	2	0
1	10	13	Work	1+	31	Work	1+	33	Yes	No	Treated	3	0
1	11	14	Work	1+	32	Work	1+	34	Yes	No	Control	Tbd	0
1	12	15	Work	1+	33	Work	1+	35	Yes	No	Control	Tbd	0
1	13	16	Work	1+	34	Work	1+	36	Yes	No	Control	Tbd	0
1	14	17	Work	1+	35	Work	1+	37	Yes	No	Control	Tbd	0
1	15	18	Work	1+	36	Work	1+	38	Yes	No	Control	Tbd	1
1	16	19	Work	1+	37	/	/	/	/	/	Not included	/	/
2	2	8	Work	1+	28	Work	1+	30	Yes	No	Control	Tbd	0
2	3	9	Work	1+	29	Work	1+	31	Yes	No	Control	Tbd	0
2	4	10	Work	1+	30	Work	1+	32	Yes	No	Treated	-2	0
2	5	11	Work	1+	31	Work	1+	33	Yes	No	Treated	-1	0
2	6	12	Work	1+	32	Work	1+	34	Yes	Yes	Treated	0	0
2	7	13	Work	1+	33	Work	1+	35	Yes	Yes	Treated	1	0
2	8	14	Work	1+	34	Work	1+	36	Yes	No	Treated	2	0
2	9	15	Work	1+	35	Work	1+	37	Yes	No	Treated	3	0
2	10	16	Work	1+	36	Work	1+	38	Yes	No	Control	Tbd	0

Methods

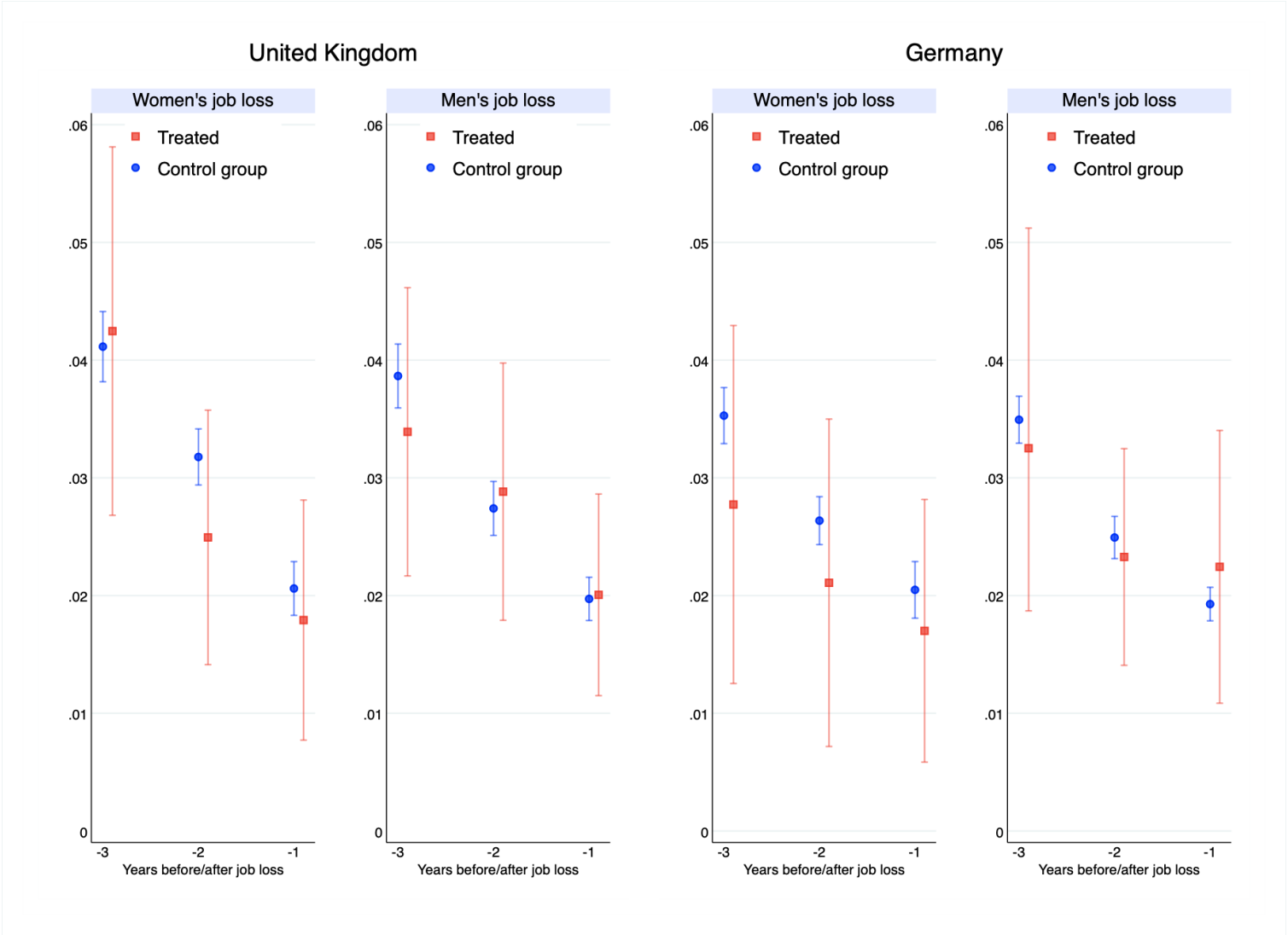
A sample of the data structure

▸ More details

id	Year	Conception	Job loss	Cohort of birth	Working status	Treated/ control
10001	2011	0	0	1986	active	control
10001	2012	1	0	1986	active	control
10001	2013	0	1	1986	active	treated
10001	2014	0	0	1986	active	treated
10001	2015	0	0	1986	active	control
10001	2016	1	0	1986	active	control
10002	2013	0	1	1988	active	treated
10002	2014	0	1	1988	active	treated
10002	2015	0	0	1988	active	treated
10002	2016	0	0	1988	active	control

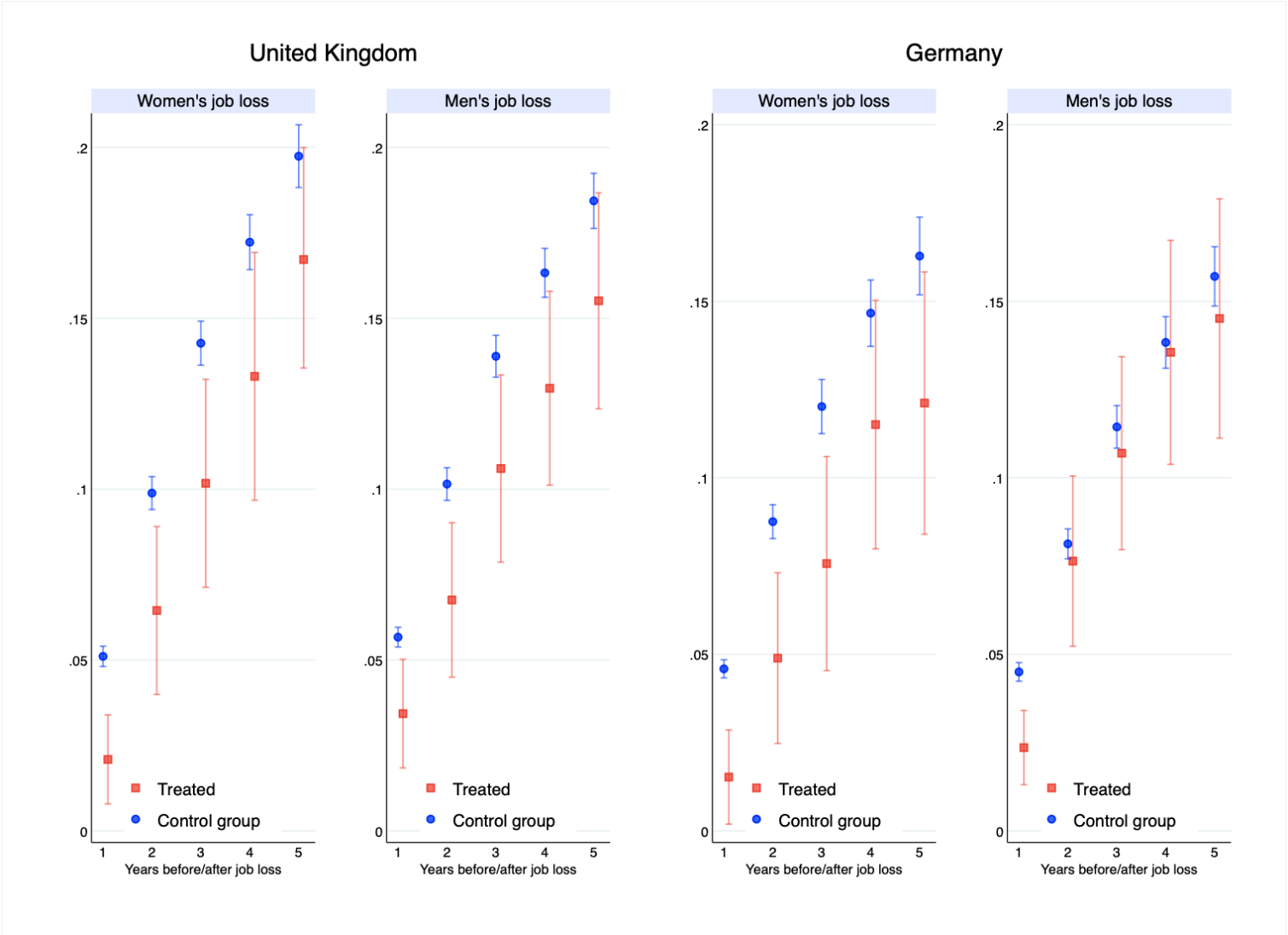
Results

Predicted probability of a birth prior to job loss.



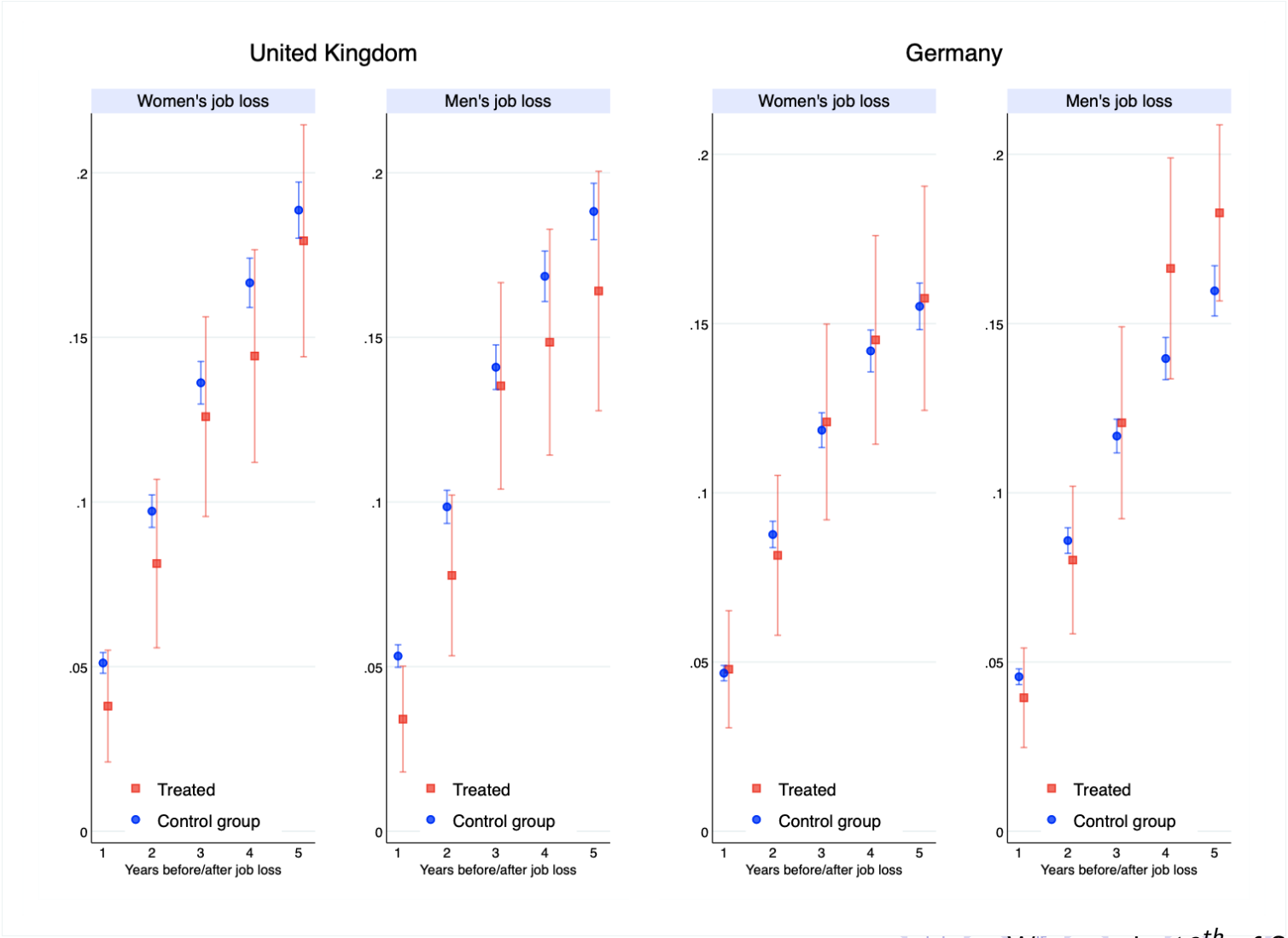
Results

Predicted probability of a birth after 4+ month job loss.



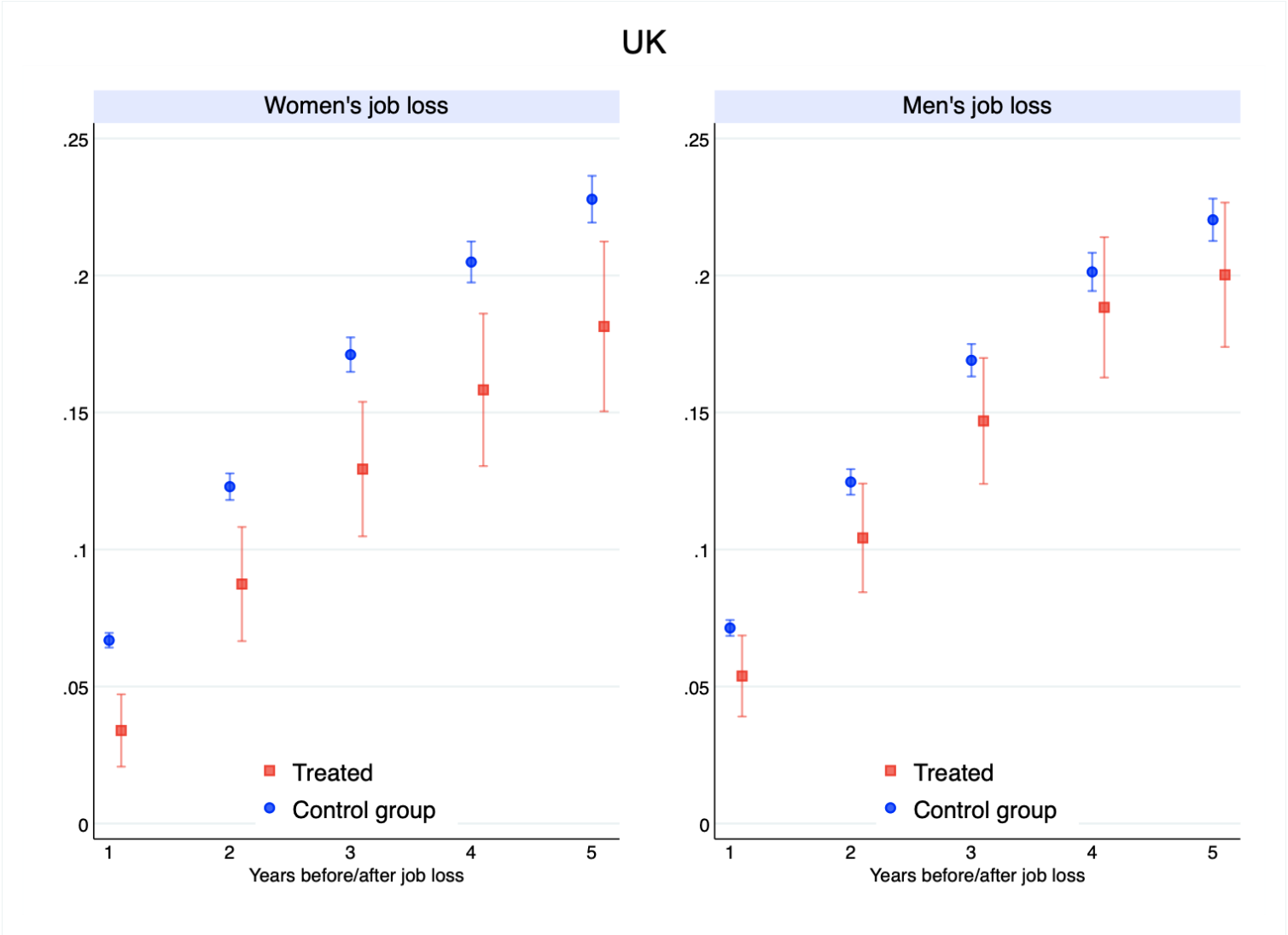
Results

Predicted probability of a birth after a voluntary unemployment spell.



Results

Predicted probability of a conception after a job loss.



Results

Mechanisms. United Kingdom.

Years since job loss	Men's job loss: Income (log)	Man's Life satisfaction	Separation/ Divorce	Employed
-2	0.01	-0.03		0.05
	(0.01)	(0.03)		(0.05)
-1	-0.02	-0.06		-0.02
	(0.01)	(0.05)		(0.05)
1	-0.48***	-0.23***	0.02***	
	(0.08)	(0.08)	(0.01)	
2	-0.31***	-0.13***	0.02***	-0.30***
	(0.09)	(0.07)	(0.01)	(0.05)
3	-0.15**	-0.04	0.01	-0.22***
	(0.08)	(0.05)	(0.01)	(0.06)
4	-0.10*	-0.02*	-0.02*	-0.09**
	(0.06)	(0.01)	(0.01)	(0.04)
5	-0.05	-0.02	-0.01	-0.01
	(0.07)	(0.01)	(0.01)	(0.06)

Results

Mechanisms. United Kingdom.

Years since job loss	Women's job loss: Income (log)	Woman's Life satisfaction	Separation/ Divorce	Employed
-2	-0.03	0.00		-0.03
	(0.03)	(0.03)		(0.04)
-1	0.02	0.03		-0.01
	(0.03)	(0.05)		(0.06)
1	-0.49***	-0.18***	0.02***	
	(0.08)	(0.07)	(0.01)	
2	-0.29***	-0.16***	0.02***	-0.45***
	(0.10)	(0.06)	(0.01)	(0.05)
3	-0.22**	-0.09***	0.00	-0.27***
	(0.09)	(0.06)	(0.02)	(0.06)
4	-0.19**	-0.06	0.01	-0.21***
	(0.09)	(0.07)	(0.01)	(0.06)
5	-0.12	-0.06	-0.03	-0.16***
	(0.07)	(0.08)	(0.02)	(0.06)

Results

Mechanisms. Germany.

Years since job loss	Men's job loss: Income (log)	Man's Life satisfaction	Separation/ Divorce	Employed
-2	-0.05	-0.06		0.02
	(0.05)	(0.05)		(0.05)
-1	-0.07	0.03		-0.08
	(0.06)	(0.07)		(0.05)
1	-0.39***	-0.18***	0.01*	
	(0.08)	(0.08)	(0.00)	
2	-0.25***	-0.09	0.01**	-0.22***
	(0.09)	(0.07)	(0.00)	(0.04)
3	-0.11	-0.06	-0.01	-0.12***
	(0.08)	(0.08)	(0.01)	(0.04)
4	-0.03	0.02	-0.02	-0.06
	(0.07)	(0.06)	(0.01)	(0.05)
5	0.05	-0.07	0.03	-0.07
	(0.09)	(0.08)	(0.02)	(0.06)

Results

Mechanisms. Germany.

Years since job loss	Women's job loss: Income (log)	Woman's Life satisfaction	Separation/ Divorce	Employed
-2	0.06	0.03		0.05
	(0.07)	(0.05)		(0.05)
-1	0.06	0.05		0.04
	(0.05)	(0.06)		(0.04)
1	-0.31***	-0.12***	0.01*	
	(0.08)	(0.08)	(0.00)	
2	-0.23***	-0.08***	0.01**	-0.33***
	(0.09)	(0.06)	(0.00)	(0.05)
3	-0.15*	-0.01	0.01	-0.18***
	(0.08)	(0.06)	(0.01)	(0.06)
4	-0.02	-0.02	0.00	-0.11
	(0.07)	(0.07)	(0.01)	(0.08)
5	-0.06	-0.02	0.00	-0.08
	(0.08)	(0.05)	(0.01)	(0.07)

Results

Cumulative probability of birth after a job loss.

United Kingdom

	Women's job loss					Men's job loss				
	LPM		IPW			LPM		IPW		
Years	β	*sd*	β	*sd*	*N*	β	*sd*	β	*sd*	*N*
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3	-0.04***	0.01	-0.05***	0.01	57,565	-0.02†	0.01	-0.03***	0.01	69,473
4	-0.04***	0.01	-0.05***	0.01	52,314	-0.01	0.01	-0.02†	0.01	63,137
5	-0.03**	0.01	-0.04***	0.01	47,514	-0.01	0.01	-0.02†	0.01	57,343

Germany

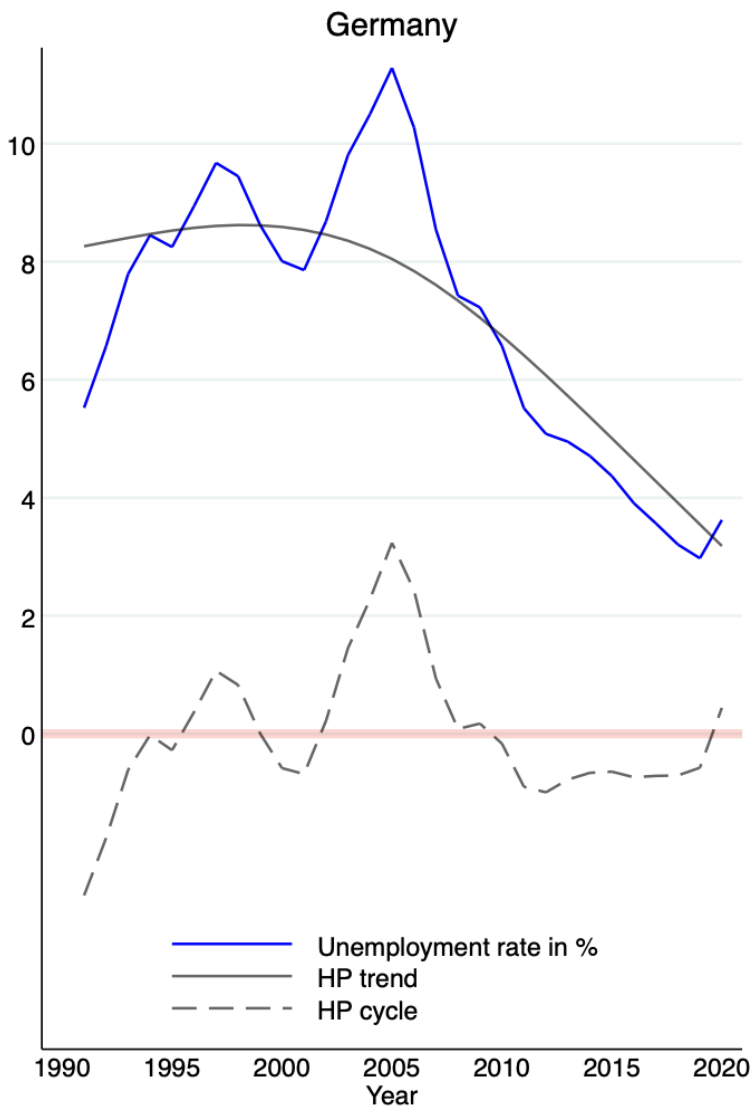
	Women's job loss					Men's job loss				
	LPM		IPW			LPM		IPW		
Years	β	*sd*	β	*sd*	*N*	β	*sd*	β	*sd*	*N*
1	-0.02***	0.01	-0.03***	0.01	62,526	-0.02***	0.01	-0.02***	0.01	76,900
2	-0.02***	0.01	-0.03***	0.01	57,181	-0.01†	0.01	-0.01	0.01	70,128
3	-0.04***	0.01	-0.04***	0.01	52,334	-0.01	0.01	0.00	0.01	64,062
4	-0.03**	0.01	-0.02	0.01	47,874	-0.01	0.01	0.00	0.01	58,448
5	-0.03**	0.01	-0.03	0.01	43,768	-0.01	0.01	0.00	0.01	53,332

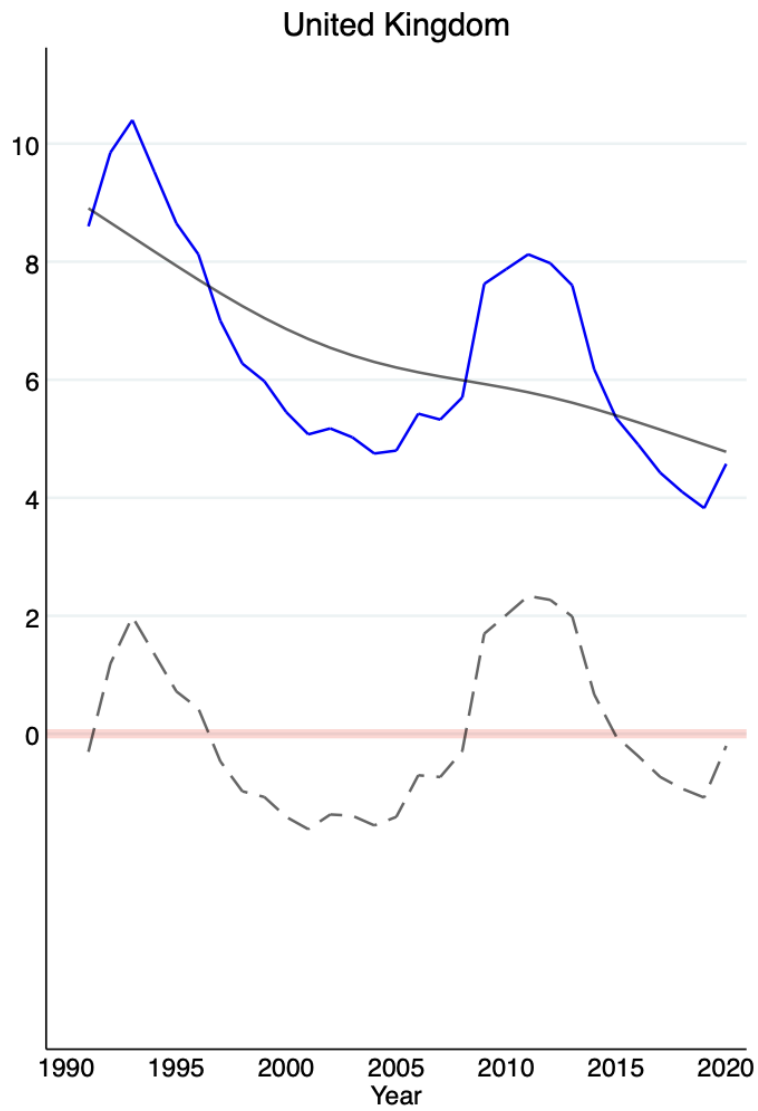
Conclusions

- What's the impact of unemployment on the birth in the short and mid-run?
  - In the United Kingdom the effect is more consequential for women.
  - ⋆ A man's job loss reduces the probability of birth by **2** pp in T_1 *A woman's job loss reduces the probability of birth by* **3** *pp in*
  - ⋆ In Germany, a man's job loss hit harder in the short run, but a woman's job loss seems be more persistent.
    - ⋆ Men's job loss reduces the chances of a birth on the same year, but it does not significantly reduce the probability of a birth in the mid-term.
    - ⋆ Women's job loss causes negative effects for at least three years (max.**5** pp. in t=*3*)

Appendix

Economic cycle (unemployment rate).

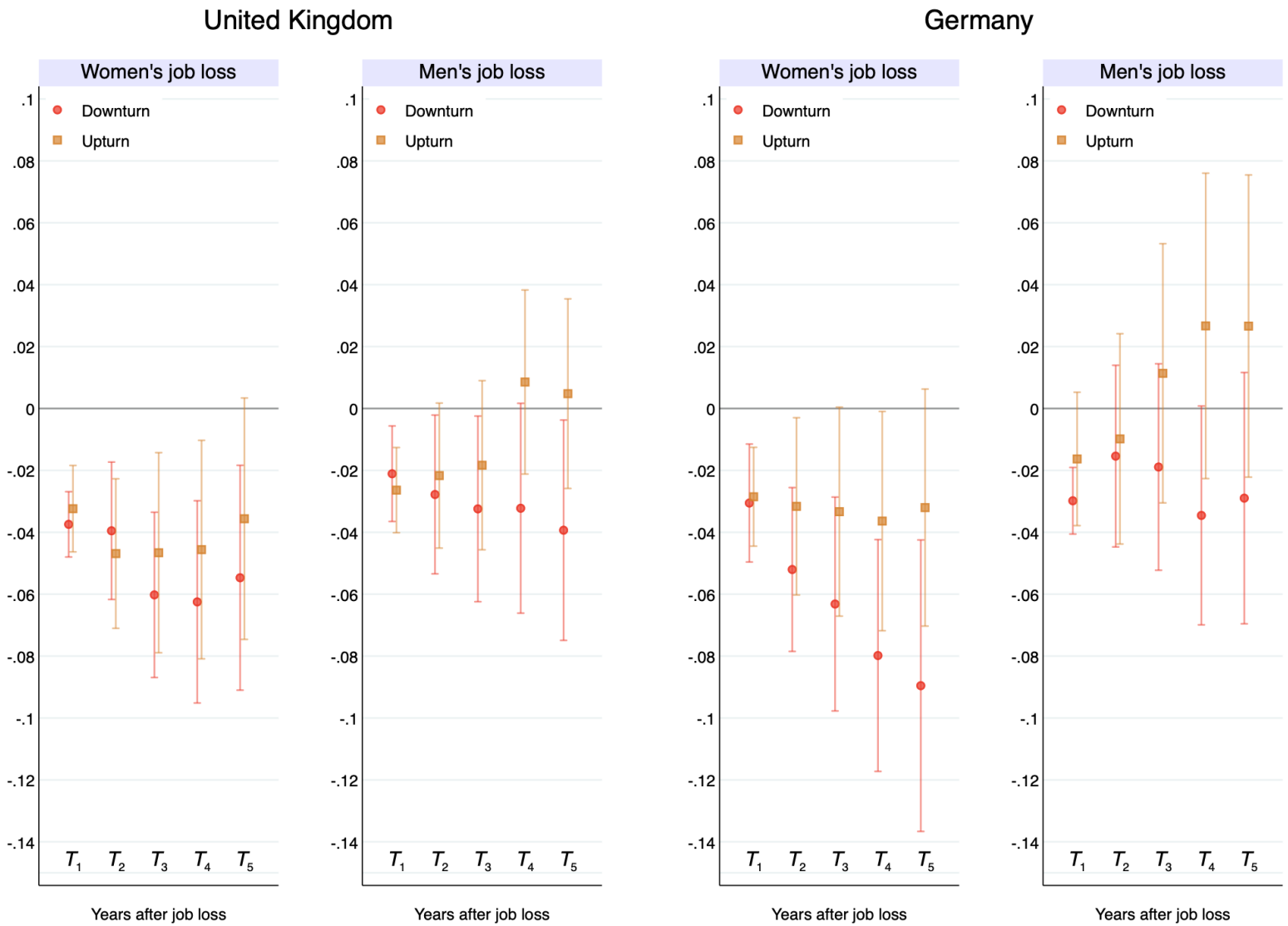




Warsaw, the 16th of September 2022

Appendix

Predicted probability of a birth after job loss by economic cycle.



Warsaw, the 16th of September 2022