Job Displacement and Fertility over the Business Cycle

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Abstract

We study the effect of job displacement on female fertility and investigate whether the effect varies with the business cycle. We use rich administrative data from Germany with an observation period spanning over 27 years and exploit mass-layoffs as quasi-experiment to estimate the causal effect of job loss on fertility in the short- and longer-run up to five years after displacement. We find preliminary evidence for at least medium run adverse effects of job displacement on female fertility. We vary the effect with the business cycle and our preliminary findings suggest that the effect is stronger if the woman lost her job in an economic downturn. These results contribute to understanding the relationship between unemployment and birth rates.

Keywords: fertility, job displacement, business cycle, administrative data.

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1 INTRODUCTION

Economic downturns may not only have economic consequences but can also affect demographic outcomes such as fertility. Individuals may either increase fertility in a recession due to lower opportunity costs or decrease fertility due to more economic uncertainty. Studying the behavior of different socio-demographic groups separately may therefore be a fruitful path to shed light on the question *how* a recession affects fertility. In this study we focus on women who lost their job. Do women change their fertility behavior due to a job loss? To answer this question we exploit mass-layoffs as quasi-experiment to estimate the causal effect of job loss on fertility in the short- and longer-run up to five years after displacement. Further, we investigate whether the fertility response of losing the job in a recession is different than the fertility response of losing the job in economically better times. Rich administrative data from Germany with an observation period spanning over 27 years enable us to address these question.

Our preliminary findings suggest that job displacement reduces female fertility at least in the medium run up to five years after displacement. We vary the effect with the business cycle and we find that the effect is stronger if the woman lost her job in an economic downturn. These results contribute to understanding the relationship between unemployment and birth rates.

2 RELATED LITERATURE

2.1 Job Displacement and the Life Course

Several studies documented long-run adverse effects of job displacement on labor market and demographic outcomes. Our study is related to this literature. Jacobson, LaLonde, and Sullivan (1993) and von Wachter, Song, and Manchester (2008), e.g., show that job displacement leads to long-term earning losses among individuals having lost their job during the 1982 recession in the U.S. and Schmieder, Wachter, and Bender (2010) show that the same is true for displaced workers in Germany. Eliason and Storrie (2006) find long-run negative earnings effects and adverse effects of job loss due to plant closure on the labor market position for Sweden. Davis and von Wachter (2011) show that the adverse effect of job loss on earnings varies over the business cycle: the earning losses due to job loss during a recession are much higher compared to job losses in expansions.

Charles and Stephens (2004) (for the U.S.) and Eliason (2012) (for Sweden) show that the divorce hazard rises after job displacement. Sullivan and von Wachter (2009) find increased mortality due to job loss and Eliason and Storrie (2009) corroborate this finding for men, yet, only for men.

Our study is closely related to the studies of Del Bono, Weber, and Winter-Ebmer (2012) and of Huttunen and Kellokumpu (2012). Using Austrian register data, Del Bono, Weber, and Winter-Ebmer (2012) study the effects of displacement on fertility among women and men being affected by displacement between 1990 and 1998. They find that displacement after a plant closure significantly reduces the number of births to a woman by 5 to 10 percent. They show that the effect is driven by career oriented women. They also show that male displacement reduces fertility, yet, without the effect to be varying with career orientation. Thus, the effect of male displacement on fertility seems to be working through an income effect, while the effect of female displacement seems to be working through an employability effect on top.

Based on Finnish register data, Huttunen and Kellokumpu (2012) also find evidence for effects of displacement on fertility among women and men being displaced between 1990 and 1993. They could study potential mechanisms more closely, because their data allowed to link partners with eachother. In line with the results from Austria, they find a

significant drop in the fertility probability after female displacement by around 5 percent. In contrast to the results from Austria, however, they did not find male displacement to lead to lower fertility.

2.2 Fertility and the Business Cycle

Our study is also related to the literature on the variation of fertility over the business cycle on the macro level. While some earlier studies find fertility to be counter-cyclical (e.g., Butz and Ward, 1979), most more recent studies found that fertility increases in economic upswings suggesting a pro-cyclical nature of fertility (e.g., Karaman Örsal and Goldstein, 2010). Most of the studies focussing on the relationship between the unemployment rate and fertility also found evidence rather for pro-cyclical fertility: in times of high unemployment fertility decisions tend to be postponed (e.g. Adsera, 2005). Yet, what is an unresolved question so far is whether unemployed or employed individuals drive this result. We contribute to answer this question by studying, first, whether job displacement affects fertility and, second, whether such (potential) effect varies with the business cycle.

3   THEORY

[To be completed]

4   EMPIRICAL STRATEGY

4.1 Data

We use the weakly anonymised version of the "Biographical data of selected social insurance agencies in Germany" (Version 1951-2009) provided by the Institute for Employment Research (IAB). These data contain records of 568.468 individuals born between 1940 and 1992 who had paid any public pension contribution in 2007. For more information about the data see Hochfellner, Müller, and Wurdack (2012). The data contain rich information on the employment and unemployment history. While records on births are stored reliably for women, male fertility is not reliably stored in these data because information is linked to the individual takes parental leave that is relevant for the pension fund and, therefore, we do not analyze men (see Kreyenfeld and Mika, 2008, for an analysis of the validity of the pension fund fertility data). Note that we cannot link partners with each other like in Huttunen and Kellokumpu (2012).

To identify mass layoffs and plant closures, and more specifically, to distinguish them from restructuring and relabeling of firms, we use the Establishment History Panel (BHP) and its two extension files on firm entries and exits, and on workers flows provided by the Institute for Employment Research (IAB) (see Hethey and Schmieder, 2010, for a documentation).

We built a dataset on quarterly basis and call the quarter of a given spell reference quarter q. Because employment data are only available from 1975 on and data on births only until 2007, we restrict our observation period from 1975 to 2007. We want to control for at least three years before the reference quarter and observe our outcome variable for at least three years. Thus, we focus on the quarters between 1978 and 2004 as reference quarters, i.e. our effective observation period spans over more than a quarter of a century (= 27 years).

We built an indicator of becoming pregnant in a given quarter being one if we observe a child is born to a woman three quarters later. Following Del Bono, Weber, and Winter-Ebmer (2012), we analyze the extensive and the intensive margin. We built the following outcome variables: first, three dummy becoming pregnant in the reference quarter or the four, twelve or twenty following quarters. Second, three variables indicating the number of

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children born within the reference quarter or the four, twelve or twenty following quarters.

We use firm information to build the sample of treated women. We define a woman as being treated in quarter q, the reference quarter, if she is employed in a firm in quarter q, but not in quarter $q+1$ and the firm had either a mass layoff or a plant closure. Firm data is available on yearly basis. We define a mass layoff of a firm in year y if the number of employees of that firm decreases by more than 30 percent either between $y-1$ and y or between year y and $y+1$. The control group consists of women who do not leave a firm or who leave firms that neither experienced a mass layoff nor closed down.

We impose some restrictions to our sample. First, women had to be employed at the same firm for at least six quarters and had not received unemployment benefits during these six quarters. This is to ensure that we can include control variables on firm basis from the year $y-1$. Second, closely following Del Bono, Weber, and Winter-Ebmer (2012) we exclude women working at firms that never had more than five employees in the observation period, or at firms that had less than four or more than 2000 employees in the reference quarter. Third, we restrict our sample to women being between 21 and 40 years in the reference quarter. Fourth, we drop women who worked in the agricultural or construction sector. Finally, we drop women who had a pregnancy start within the last two years before the reference quarter.

4.2 Method

[To be completed]

Mass layoff / plant closure used as a quasi-experiment.

- Comparison of fertility between treated and control women after a reference quarter q by means of weighted regression.

- Treatment: displacement in quarter q.

- Treated: leaving job in quarter q at a firm with a mass layoff (= decrease by more than 30%) or plant closure between year $y-1$ and y, or y and $y+1$.

- Controls: not leaving a job in quarter q or leaving job without mass layoff or plant closure.

- Note: we do not focus on unemployment.

- Observation period of potential job displacement: 1978 - 2004.

- Data structure and sample size: 410.000 quarterly spells of 27.000 women. 5.000 treated.

- Linear regressions controlling for various variables to account for potential selection into treated firms:

  - Dependent variables: Binary indicator of becoming pregnant (1) in the first year after q, (2) in years 1-3 after quarter q, and (3) in years 1-5 after quarter q. (Becoming pregnant: month of child birth $-$ 3 quarters.)

  - Control variables: (1) Individual: Age, tenure, fertility history (year 5 year), unemployment benefits/employment/earnings history (3 years), previous children, vocational degree. (2) Firm (year $t-1$): Sector, number of employed, share of age < 30, share of age > 49, share of female employees, share of low qualified. (3) Time trends: Year.

- (Robustness Check: Propensity score weighting to account for potential selection into treated firms (Imbens, 2004))

- Variation with business cycle:

  - business cycle: cyclical component of the unemployment rate: we use a binary indicator of boom/downturn measuring whether unemployment rate of current year is above (downturn) or below (boom) the unemployment rate trend. To calculate unemployment rate trend we use Hodrick-Prescott filter as in vandenBerg, Lindeboom, Portrait (2006).

5   Results

[To be completed]

## 6   Discussion and Conclusion

[To be completed]

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Figure 1: Employment Probability per Quarter
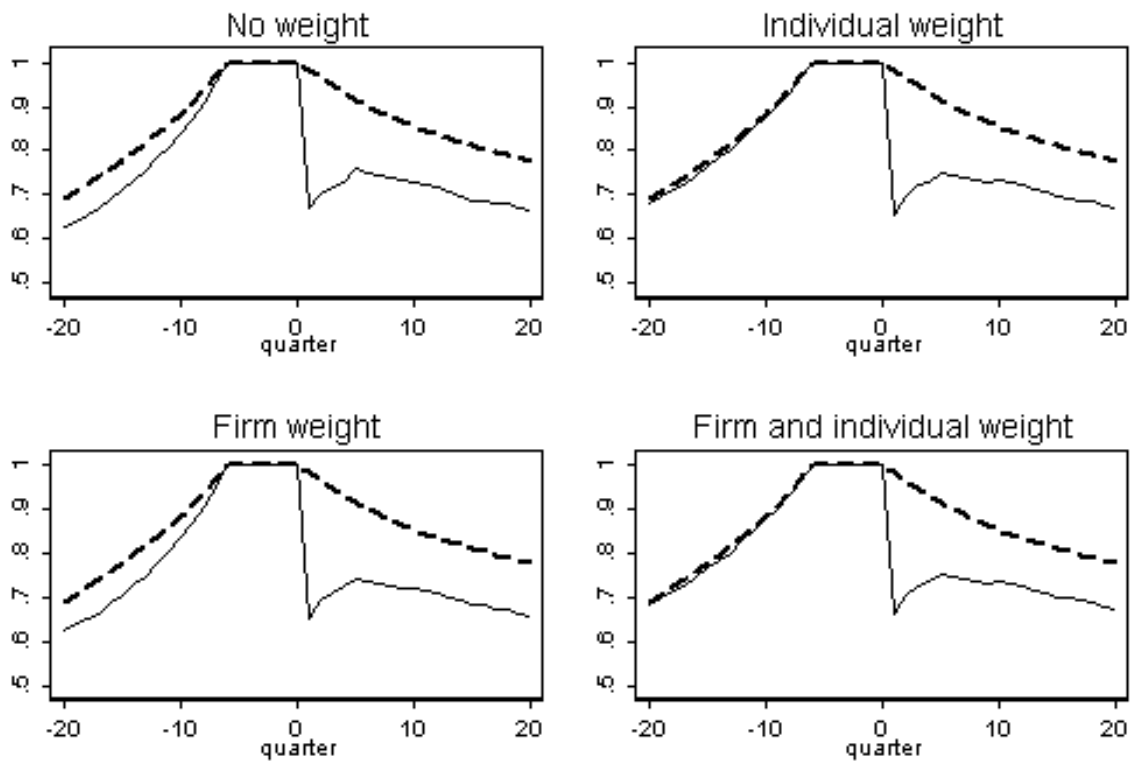
Notes: Employment probabilities for treated (solid line) and four different control groups
(dashed line). 0 is reference quarter, i.e., quarter of displacement for the treated group.

Figure 2: Unemployment Insurance Benefits Probability per Quarter

Notes: Unemployment insurance benefits probabilities for treated (solid line) and four different control groups (dashed line). 0 is reference quarter, i.e., quarter of displacement for the treated group.

Figure 3: Mean Hourly Earnings per Year
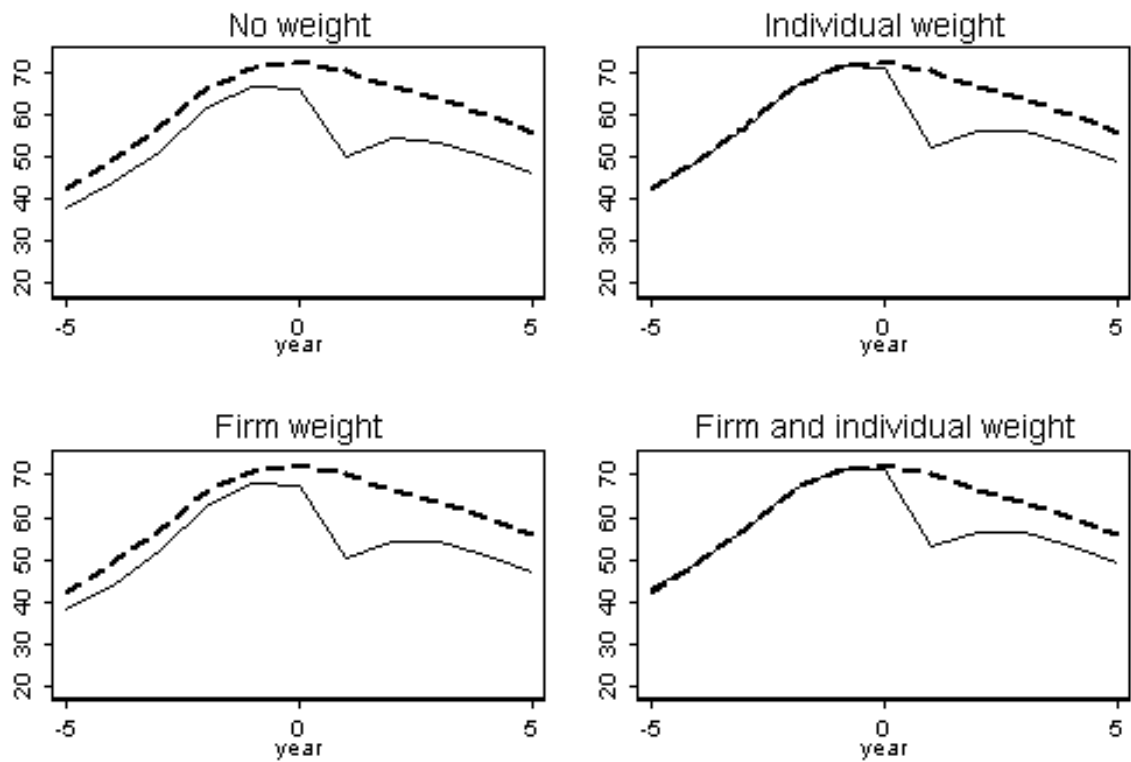
Notes: Mean hourly earnings for treated (solid line) and four different control groups (dashed line). 0 is reference quarter, i.e., quarter of displacement for the treated group.

Figure 4: Probability of Pregnancy Start per Year
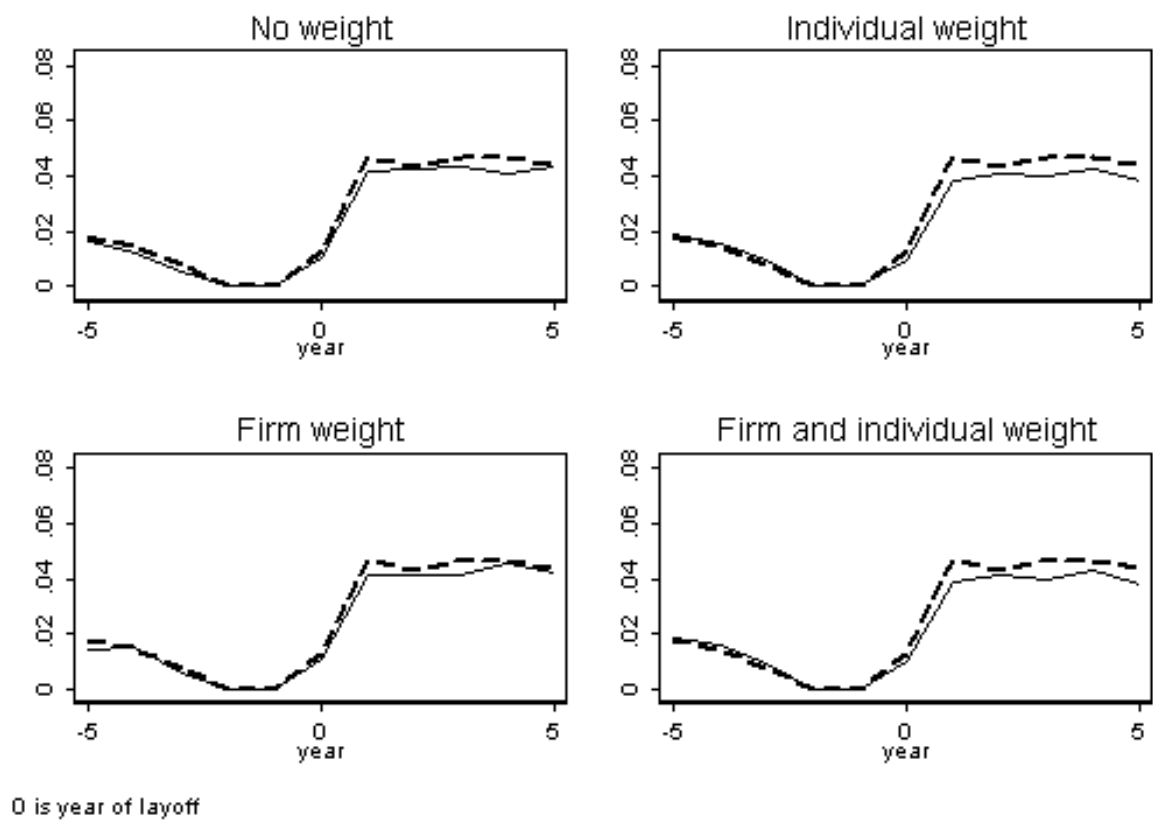
Notes: Pregnancy probabilities for treated (solid line) and four different control groups (dashed line). 0 is reference quarter, i.e., quarter of displacement for the treated group.
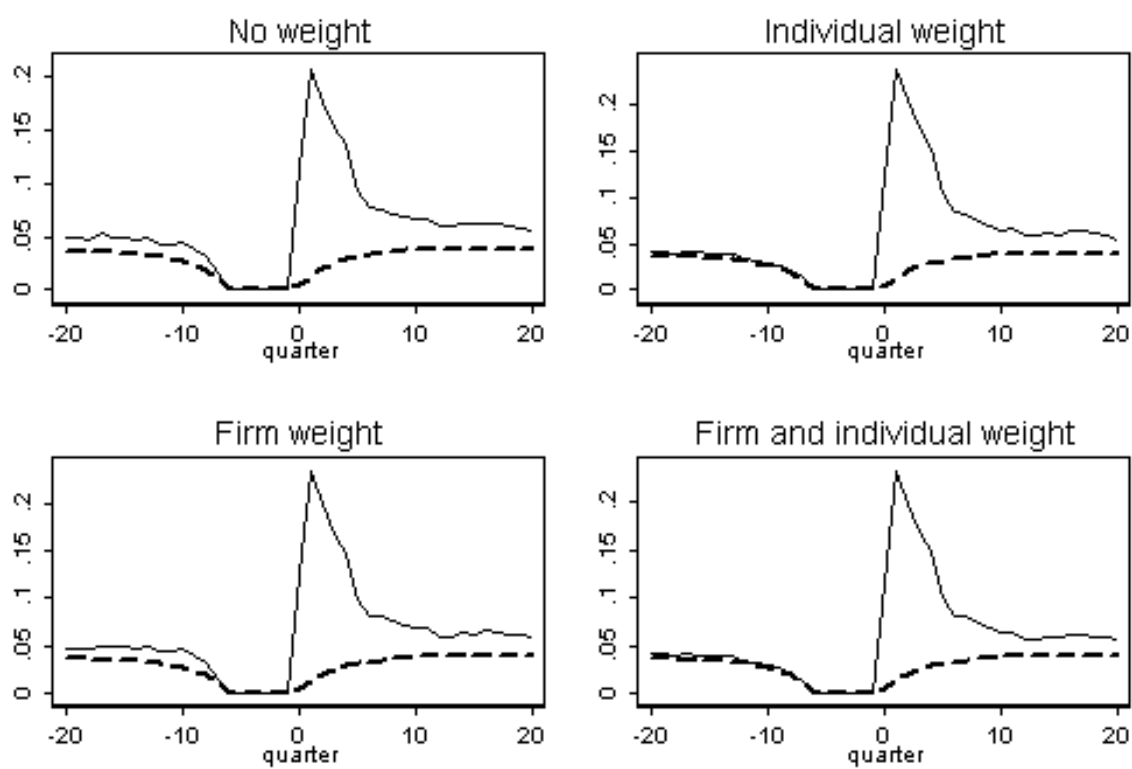
Figure 5: Probability of Pregnancy Start per Year by Unemployment Rate
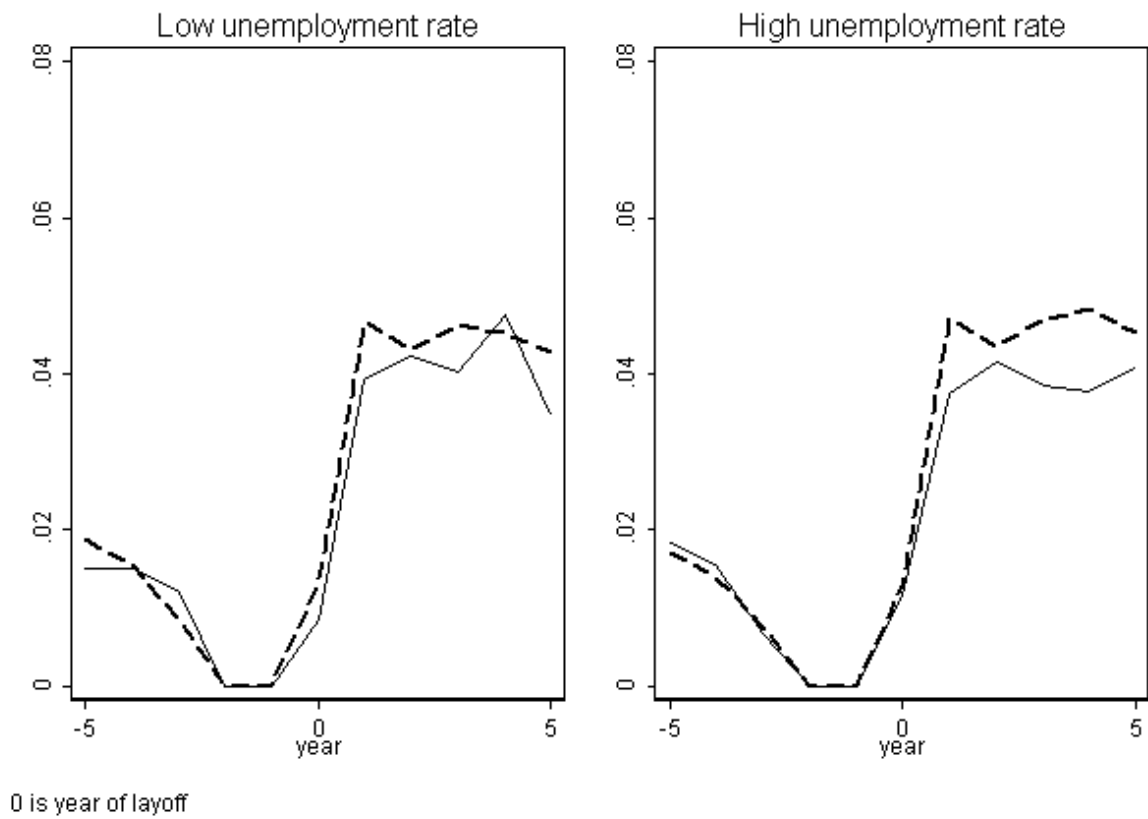
Notes: Pregnancy probabilities for treated (solid line) and four different control groups (dashed line). 0 is reference quarter, i.e., quarter of displacement for the treated group.

Figure 6: Unemployment Rate Germany

Note: HP: Hodrick-Prescott filtered trend and deviation of unemployment rate from trend

Table 1: Descriptive Statistics

	Treated	Controls	t-value Δ
Individual variables			
age	29.94	30.70	-11.38
tenure	12.99	14.50	-24.66
nokids	0.74	0.69	9.57
uni	0.05	0.04	2.36
ausbildung	0.67	0.68	-1.27
german	0.72	0.76	-6.90
sector_1	0.01	0.01	2.87
sector_2	0.27	0.30	-4.40
sector_3	0.22	0.17	10.56
sector_4	0.05	0.03	8.00
sector_5	0.03	0.05	-7.43
sector_6	0.36	0.34	3.73
sector_7	0.02	0.03	-3.51
sector_8	0.03	0.07	-12.66
any preg3yp	0.01	0.01	-2.24
any preg4yp	0.01	0.02	-0.67
any preg5yp	0.02	0.02	-2.25
qearn_p1	50.77	53.37	-8.67
qearn_p2	50.71	52.77	-6.91
qearn_p3	50.55	52.09	-5.23
qearn_p4	49.58	51.38	-6.17
cumpreg3yp	0.01	0.01	-2.24
cumpreg4yp	0.02	0.02	-1.94
cumpreg5yp	0.03	0.04	-3.12
Firm variables			
te_p25p1	50.60	52.37	-7.02
te_medp1	60.52	62.06	-5.29
te_p75p1	73.08	74.91	-5.28
firm_un30p1	0.37	0.34	14.89
firm_ue49p1	0.16	0.18	-13.59
firm_femp1	0.63	0.62	6.35
firm_lowqu 1	0.25	0.26	-4.68
Outcome variables			
Any pregnancy start			
cumpreg1yf	0.05	0.06	-1.81
cumpreg3yf	0.13	0.13	-1.37
cumpreg5yf	0.19	0.19	-0.41
Number pregnancy starts			
cumpreg1yf	0.05	0.06	-1.84
cumpreg3yf	0.14	0.15	-1.38
cumpreg5yf	0.23	0.24	-1.21

Source: BASiD data; own calculations.

Table 2: Linear Regression Results - Effect of Job Displacement on Fertility

Any Pregnancy Start	(1) 1st Year		(2) 1st-3rd Year		(3) 1st-5th Year	
treated	-0.009**	(0.003)	-0.014**	(0.005)	-0.014*	(0.006)
age	0.019***	(0.002)	0.018***	(0.003)	-0.003	(0.004)
age2	-0.000***	(0.000)	-0.001***	(0.000)	-0.000***	(0.000)
tenure	-0.000	(0.000)	-0.000	(0.000)	-0.001	(0.000)
qpregstart_p13	0.066***	(0.009)	0.103***	(0.011)	0.110***	(0.012)
qpregstart_p14	0.075***	(0.009)	0.113***	(0.011)	0.110***	(0.011)
qpregstart_p15	0.077***	(0.008)	0.111***	(0.010)	0.112***	(0.011)
qpregstart_p16	0.073***	(0.008)	0.104***	(0.010)	0.107***	(0.011)
qpregstart_p17	0.054***	(0.007)	0.080***	(0.009)	0.085***	(0.011)
qpregstart_p18	0.044***	(0.007)	0.064***	(0.009)	0.069***	(0.010)
qpregstart_p19	0.031***	(0.006)	0.050***	(0.008)	0.049***	(0.009)
qpregstart_p20	0.030***	(0.006)	0.041***	(0.008)	0.046***	(0.009)
qemp_p7	-0.003	(0.002)	-0.003	(0.003)	-0.008*	(0.003)
qemp_p8	-0.001	(0.002)	0.002	(0.002)	-0.001	(0.003)
qemp_p9	-0.001	(0.002)	0.002	(0.002)	0.004	(0.002)
qemp_p10	0.001	(0.002)	0.002	(0.002)	0.003	(0.002)
qemp_p11	0.002	(0.002)	0.002	(0.002)	0.005*	(0.002)
qemp_p12	-0.001	(0.002)	0.003	(0.003)	0.005	(0.004)
qalg1_p7	0.003	(0.003)	0.004	(0.004)	0.013**	(0.005)
qalg1_p8	0.003	(0.003)	0.004	(0.003)	0.001	(0.004)
qalg1_p9	0.001	(0.002)	0.003	(0.003)	-0.001	(0.003)
qalg1_p10	0.001	(0.002)	0.005+	(0.003)	0.002	(0.003)
qalg1_p11	0.008***	(0.002)	0.010***	(0.003)	0.007*	(0.003)
qalg1_p12	0.010***	(0.003)	0.010*	(0.004)	0.016***	(0.005)
nokids	0.002	(0.002)	0.011**	(0.004)	0.018***	(0.005)
uni	0.024***	(0.005)	0.048***	(0.009)	0.060***	(0.013)
ausbildung	0.007***	(0.002)	0.015***	(0.004)	0.020***	(0.006)
qtentgelt_p1	-0.000***	(0.000)	-0.000**	(0.000)	-0.000*	(0.000)
qtentgelt_p2	-0.000**	(0.000)	-0.000**	(0.000)	-0.000***	(0.000)
qtentgelt_p3	-0.000	(0.000)	-0.000	(0.000)	-0.000	(0.000)
qtentgelt_p4	0.000	(0.000)	0.000+	(0.000)	0.000**	(0.000)
qtentgelt_p5	-0.000	(0.000)	0.000	(0.000)	-0.000	(0.000)
qtentgelt_p6	0.000	(0.000)	0.000**	(0.000)	0.000***	(0.000)
qtentgelt_p7	0.000	(0.000)	0.000	(0.000)	0.000*	(0.000)
qtentgelt_p8	0.000	(0.000)	-0.000	(0.000)	0.000	(0.000)
qtentgelt_p9	0.000	(0.000)	0.000**	(0.000)	0.000**	(0.000)
qtentgelt_p10	0.000**	(0.000)	0.000**	(0.000)	0.000	(0.000)
qtentgelt_p11	0.000***	(0.000)	0.000***	(0.000)	0.000**	(0.000)
qtentgelt_p12	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
az_gesp1	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
firm_un30p1	0.022***	(0.006)	0.049***	(0.012)	0.059***	(0.016)
firm_ue49p1	-0.001	(0.009)	-0.001	(0.018)	-0.014	(0.025)
firm_femp1	0.008*	(0.004)	0.011	(0.008)	0.014	(0.010)
firm_lowqualemp1	0.003	(0.004)	0.013	(0.009)	0.013	(0.012)
year1979	0.007	(0.005)	0.007	(0.005)	0.006	(0.005)
year1980	0.003	(0.005)	0.008	(0.007)	0.002	(0.007)
year1981	0.008	(0.005)	0.006	(0.008)	0.000	(0.008)
year1982	0.005	(0.005)	-0.003	(0.008)	0.007	(0.009)
year1983	-0.000	(0.005)	-0.004	(0.008)	0.014	(0.009)
year1984	-0.005	(0.005)	0.005	(0.008)	0.013	(0.010)
year1985	-0.000	(0.005)	0.018*	(0.009)	0.021*	(0.009)
year1986	0.014**	(0.005)	0.023**	(0.009)	0.024**	(0.009)
year1987	0.014*	(0.005)	0.012	(0.008)	0.014	(0.009)
year1988	0.004	(0.005)	-0.003	(0.008)	-0.002	(0.009)
year1989	-0.002	(0.005)	-0.005	(0.008)	-0.007	(0.009)
year1990	-0.004	(0.005)	-0.003	(0.008)	-0.005	(0.009)
year1991	-0.000	(0.005)	-0.011	(0.008)	-0.002	(0.009)
year1992	-0.001	(0.005)	-0.009	(0.008)	0.002	(0.009)
year1993	-0.006	(0.005)	-0.003	(0.008)	0.002	(0.009)
year1994	-0.004	(0.005)	0.001	(0.008)	0.003	(0.009)
year1995	0.001	(0.005)	-0.002	(0.008)	-0.001	(0.009)
year1996	0.001	(0.005)	-0.006	(0.008)	-0.010	(0.009)
year1997	-0.004	(0.005)	-0.016*	(0.008)	-0.021*	(0.009)
year1998	-0.007	(0.005)	-0.020*	(0.008)	-0.024**	(0.009)
year1999	-0.007	(0.005)	-0.022**	(0.008)	-0.025**	(0.009)
year2000	-0.010*	(0.005)	-0.020*	(0.008)	-0.021*	(0.009)
year2001	-0.007	(0.005)	-0.018*	(0.008)	-0.019*	(0.009)
year2002	-0.006	(0.005)	-0.015+	(0.008)	-0.013	(0.010)
year2003	-0.006	(0.005)	-0.017*	(0.008)	.	.
year2004	-0.007	(0.005)	-0.019*	(0.008)	.	.
_cons	-0.158***	(0.028)	0.024	(0.057)	0.498***	(0.073)
r2	0.026		0.069		0.116	
N	409834.000		398052.000		364124.000	

Source: BASiD data; own calculations. Sector dummies omitted. Only women with German citizenship.
Standard errors clustered at firm level.
+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 3: Linear Regression Results - Effect of Job Displacement on Fertility

Number Pregnancy Start	(1) 1st Year		(2) 1st-3rd Year		(3) 1st-5th Year	
treated	-0.010**	(0.003)	-0.017**	(0.006)	-0.027***	(0.008)
age	0.019***	(0.002)	0.017***	(0.004)	-0.012*	(0.006)
age2	-0.000***	(0.000)	-0.001***	(0.000)	-0.000**	(0.000)
tenure	-0.000	(0.000)	-0.001+	(0.000)	-0.001	(0.001)
qpregstart_p13	0.066***	(0.009)	0.101***	(0.011)	0.097***	(0.013)
qpregstart_p14	0.074***	(0.009)	0.110***	(0.011)	0.099***	(0.013)
qpregstart_p15	0.077***	(0.008)	0.113***	(0.011)	0.106***	(0.013)
qpregstart_p16	0.073***	(0.008)	0.104***	(0.011)	0.096***	(0.012)
qpregstart_p17	0.053***	(0.007)	0.078***	(0.010)	0.074***	(0.012)
qpregstart_p18	0.044***	(0.007)	0.062***	(0.009)	0.055***	(0.011)
qpregstart_p19	0.031***	(0.006)	0.051***	(0.009)	0.039***	(0.011)
qpregstart_p20	0.030***	(0.006)	0.042***	(0.009)	0.035***	(0.010)
qemp_p7	-0.003	(0.002)	-0.002	(0.003)	-0.006	(0.004)
qemp_p8	-0.001	(0.002)	0.004	(0.003)	0.001	(0.004)
qemp_p9	-0.001	(0.002)	0.001	(0.002)	0.005	(0.003)
qemp_p10	0.001	(0.002)	0.002	(0.002)	0.005	(0.003)
qemp_p11	0.002	(0.002)	0.003	(0.002)	0.007*	(0.003)
qemp_p12	-0.001	(0.002)	0.005	(0.004)	0.006	(0.005)
qalg1_p7	0.003	(0.003)	0.004	(0.005)	0.012+	(0.006)
qalg1_p8	0.003	(0.003)	0.002	(0.004)	0.002	(0.005)
qalg1_p9	0.001	(0.002)	0.003	(0.003)	-0.001	(0.005)
qalg1_p10	0.001	(0.002)	0.005	(0.003)	0.003	(0.004)
qalg1_p11	0.008***	(0.002)	0.012***	(0.003)	0.008*	(0.004)
qalg1_p12	0.010***	(0.003)	0.011*	(0.005)	0.014*	(0.006)
nokids	0.002	(0.002)	0.016***	(0.004)	0.037***	(0.006)
uni	0.024***	(0.005)	0.059***	(0.011)	0.097***	(0.018)
ausbildung	0.007***	(0.002)	0.018***	(0.005)	0.032***	(0.007)
qtentgelt_p1	-0.000***	(0.000)	-0.000**	(0.000)	-0.000+	(0.000)
qtentgelt_p2	-0.000**	(0.000)	-0.000*	(0.000)	-0.000**	(0.000)
qtentgelt_p3	-0.000	(0.000)	-0.000	(0.000)	-0.000	(0.000)
qtentgelt_p4	0.000	(0.000)	0.000+	(0.000)	0.000**	(0.000)
qtentgelt_p5	-0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
qtentgelt_p6	0.000	(0.000)	0.000**	(0.000)	0.000***	(0.000)
qtentgelt_p7	0.000	(0.000)	0.000	(0.000)	0.000+	(0.000)
qtentgelt_p8	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
qtentgelt_p9	0.000	(0.000)	0.000**	(0.000)	0.000*	(0.000)
qtentgelt_p10	0.000**	(0.000)	0.000*	(0.000)	0.000	(0.000)
qtentgelt_p11	0.000***	(0.000)	0.000***	(0.000)	0.000*	(0.000)
qtentgelt_p12	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
az_gesp1	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
firm_un30p1	0.022***	(0.006)	0.055***	(0.014)	0.075***	(0.021)
firm_ue49p1	-0.001	(0.009)	-0.005	(0.020)	-0.041	(0.032)
firm_femp1	0.008*	(0.004)	0.015+	(0.009)	0.022	(0.014)
firm_lowqualemp1	0.003	(0.004)	0.015	(0.011)	0.023	(0.017)
year1979	0.007	(0.005)	0.010+	(0.006)	0.010	(0.007)
year1980	0.003	(0.005)	0.011	(0.008)	0.011	(0.010)
year1981	0.008	(0.005)	0.010	(0.009)	0.013	(0.011)
year1982	0.005	(0.005)	0.000	(0.009)	0.018	(0.012)
year1983	-0.001	(0.005)	0.000	(0.009)	0.025*	(0.012)
year1984	-0.005	(0.005)	0.010	(0.010)	0.026*	(0.013)
year1985	-0.000	(0.005)	0.023*	(0.010)	0.038**	(0.013)
year1986	0.014**	(0.005)	0.032**	(0.010)	0.048***	(0.013)
year1987	0.014*	(0.005)	0.020*	(0.010)	0.032*	(0.013)
year1988	0.004	(0.005)	-0.001	(0.009)	0.006	(0.012)
year1989	-0.003	(0.005)	-0.005	(0.009)	-0.006	(0.012)
year1990	-0.004	(0.005)	0.002	(0.009)	-0.001	(0.012)
year1991	-0.000	(0.005)	-0.009	(0.009)	0.001	(0.012)
year1992	-0.001	(0.005)	-0.012	(0.009)	-0.000	(0.012)
year1993	-0.007	(0.005)	-0.005	(0.009)	0.002	(0.012)
year1994	-0.004	(0.005)	0.001	(0.009)	0.004	(0.012)
year1995	0.000	(0.005)	-0.001	(0.009)	0.001	(0.012)
year1996	0.001	(0.005)	-0.004	(0.009)	-0.004	(0.012)
year1997	-0.004	(0.005)	-0.016+	(0.009)	-0.023+	(0.012)
year1998	-0.007	(0.005)	-0.020*	(0.009)	-0.028*	(0.012)
year1999	-0.007	(0.005)	-0.024**	(0.009)	-0.031**	(0.012)
year2000	-0.011*	(0.005)	-0.023**	(0.009)	-0.028*	(0.012)
year2001	-0.007	(0.005)	-0.018*	(0.009)	-0.026*	(0.012)
year2002	-0.006	(0.005)	-0.013	(0.009)	-0.016	(0.013)
year2003	-0.006	(0.005)	-0.018*	(0.009)	.	.
year2004	-0.007	(0.005)	-0.021*	(0.009)	.	.
_cons	-0.157***	(0.028)	0.051	(0.065)	0.720***	(0.099)
r2	0.026		0.065		0.108	
N	409834.000		398052.000		364124.000	

Source: BASiD data; own calculations. Sector dummies omitted. Only women with German citizenship.
Standard errors clustered at firm level.
+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 4: Heterogeneous Effects of Job Displacement on Fertility

	(1)	(2)	(3)	(4)	(5)	(6)
	1st Year	1st-3rd Year	1st-5th Year	1st Year	1st-3rd Year	1st-5th Year
	Any Pregnancy Starts			Number Pregnancy Starts		
Age < 26	-0.008	-0.019	-0.017	-0.008	-0.022	-0.045*
	(0.008)	(0.012)	(0.014)	(0.008)	(0.014)	(0.019)
Age >= 26	-0.010**	-0.013**	-0.013*	-0.010**	-0.015**	-0.020*
	(0.003)	(0.005)	(0.006)	(0.003)	(0.006)	(0.008)
Kids	-0.000	0.000	-0.004	-0.000	0.004	0.001
	(0.005)	(0.007)	(0.008)	(0.005)	(0.008)	(0.009)
No kids	-0.013***	-0.020**	-0.018*	-0.013***	-0.025***	-0.037***
	(0.004)	(0.006)	(0.008)	(0.004)	(0.007)	(0.010)
University	-0.008	-0.037	-0.016	-0.008	-0.042	-0.007
	(0.016)	(0.022)	(0.030)	(0.016)	(0.028)	(0.047)
Voc. training	-0.012**	-0.014*	-0.015*	-0.012**	-0.017*	-0.030**
	(0.004)	(0.006)	(0.007)	(0.004)	(0.007)	(0.009)
No uni no voc. train.	-0.003	-0.010	-0.011	-0.003	-0.012	-0.020
	(0.006)	(0.009)	(0.011)	(0.006)	(0.010)	(0.014)
Collar blue	-0.008	-0.004	-0.003	-0.008	-0.007	-0.017
	(0.006)	(0.009)	(0.011)	(0.006)	(0.010)	(0.014)
Collar white	-0.017***	-0.028***	-0.028***	-0.017***	-0.032***	-0.046***
	(0.004)	(0.007)	(0.008)	(0.004)	(0.008)	(0.011)
Part-time	0.009	0.009	0.007	0.009	0.012	0.011
	(0.007)	(0.010)	(0.012)	(0.007)	(0.011)	(0.015)
Wage growth <= 5 %	-0.006	-0.004	-0.001	-0.006	-0.001	0.004
	(0.005)	(0.008)	(0.009)	(0.005)	(0.009)	(0.013)
Wage growth > 5 %	-0.011**	-0.019**	-0.021**	-0.011**	-0.025***	-0.042***
	(0.004)	(0.006)	(0.007)	(0.004)	(0.007)	(0.010)
Tenure <= 3	-0.010*	-0.010	-0.012	-0.010*	-0.014+	-0.029*
	(0.005)	(0.007)	(0.009)	(0.005)	(0.008)	(0.012)
Tenure > 3	-0.009*	-0.018**	-0.016*	-0.009*	-0.019**	-0.025*
	(0.004)	(0.006)	(0.007)	(0.004)	(0.007)	(0.010)
Wage 1st third	-0.005	-0.005	-0.010	-0.005	-0.005	-0.022*
	(0.005)	(0.007)	(0.008)	(0.005)	(0.008)	(0.011)
Wage 2nd third	-0.016**	-0.020*	-0.020+	-0.016**	-0.025*	-0.033*
	(0.006)	(0.009)	(0.011)	(0.006)	(0.010)	(0.015)
Wage 3rd third	-0.010+	-0.022**	-0.014	-0.010+	-0.026*	-0.026+
	(0.006)	(0.009)	(0.011)	(0.006)	(0.011)	(0.015)
Tenure > 3 &	-0.014*	-0.032***	-0.032**	-0.014*	-0.037***	-0.055***
wage gro. > 5 %	(0.006)	(0.009)	(0.011)	(0.006)	(0.011)	(0.014)
Tenure <= 3	-0.008*	-0.007	-0.007	-0.008*	-0.009	-0.016+
or wage gro. <= 5 %	(0.004)	(0.006)	(0.007)	(0.004)	(0.006)	(0.009)

Source: BASiD data; own calculations.
Standard errors clustered at firm level.
** $p < 0.10$, *** $p < 0.05$, *** $p < 0.01$

Table 5: Linear Regression Results - Variation with the Business Cycle (Controlled for Trend of Unempl. Rate)

Any Pregnancy Start	(1) 1st Year		(2) 1st-3rd Year		(3) 1st-5th Year	
treated X boom	-0.010*	(0.005)	-0.009	(0.007)	-0.007	(0.009)
treated X downturn	-0.010*	(0.004)	-0.019**	(0.006)	-0.021**	(0.008)
boom	-0.002	(0.001)	-0.005*	(0.002)	-0.008**	(0.003)
trend	-0.002***	(0.000)	-0.004***	(0.001)	-0.005***	(0.001)
age	0.018***	(0.002)	0.017***	(0.003)	-0.004	(0.004)
age2	-0.000***	(0.000)	-0.001***	(0.000)	-0.000***	(0.000)
tenure	-0.000	(0.000)	-0.000	(0.000)	-0.000	(0.000)
qpregstart_p13	0.067***	(0.009)	0.104***	(0.011)	0.111***	(0.012)
qpregstart_p14	0.075***	(0.009)	0.114***	(0.011)	0.111***	(0.011)
qpregstart_p15	0.077***	(0.008)	0.112***	(0.010)	0.114***	(0.011)
qpregstart_p16	0.073***	(0.008)	0.105***	(0.010)	0.109***	(0.011)
qpregstart_p17	0.054***	(0.007)	0.080***	(0.009)	0.086***	(0.010)
qpregstart_p18	0.044***	(0.007)	0.064***	(0.009)	0.070***	(0.010)
qpregstart_p19	0.031***	(0.006)	0.050***	(0.008)	0.050***	(0.009)
qpregstart_p20	0.031***	(0.006)	0.041***	(0.008)	0.046***	(0.009)
qemp_p7	-0.003	(0.002)	-0.003	(0.003)	-0.008*	(0.003)
qemp_p8	-0.001	(0.002)	0.002	(0.002)	-0.000	(0.003)
qemp_p9	-0.001	(0.002)	0.002	(0.002)	0.004+	(0.002)
qemp_p10	0.001	(0.002)	0.002	(0.002)	0.003	(0.002)
qemp_p11	0.002	(0.002)	0.002	(0.002)	0.005*	(0.002)
qemp_p12	-0.001	(0.002)	0.003	(0.003)	0.005	(0.004)
qalg1_p7	0.003	(0.003)	0.005	(0.004)	0.013**	(0.005)
qalg1_p8	0.003	(0.003)	0.004	(0.003)	0.001	(0.004)
qalg1_p9	0.001	(0.002)	0.003	(0.003)	-0.001	(0.003)
qalg1_p10	0.001	(0.002)	0.005+	(0.003)	0.002	(0.003)
qalg1_p11	0.008***	(0.002)	0.010***	(0.003)	0.007*	(0.003)
qalg1_p12	0.010***	(0.003)	0.010**	(0.004)	0.016***	(0.005)
nokids	0.001	(0.002)	0.011**	(0.004)	0.018***	(0.005)
uni	0.024***	(0.005)	0.048***	(0.009)	0.059***	(0.013)
ausbildung	0.007***	(0.002)	0.015***	(0.004)	0.019***	(0.006)
qtentgelt_p1	-0.000***	(0.000)	-0.000**	(0.000)	-0.000+	(0.000)
qtentgelt_p2	-0.000**	(0.000)	-0.000**	(0.000)	-0.000***	(0.000)
qtentgelt_p3	-0.000	(0.000)	-0.000	(0.000)	-0.000	(0.000)
qtentgelt_p4	0.000	(0.000)	0.000	(0.000)	0.000**	(0.000)
qtentgelt_p5	-0.000	(0.000)	0.000	(0.000)	-0.000	(0.000)
qtentgelt_p6	0.000	(0.000)	0.000**	(0.000)	0.000***	(0.000)
qtentgelt_p7	0.000	(0.000)	0.000	(0.000)	0.000*	(0.000)
qtentgelt_p8	0.000	(0.000)	-0.000	(0.000)	0.000	(0.000)
qtentgelt_p9	0.000	(0.000)	0.000*	(0.000)	0.000**	(0.000)
qtentgelt_p10	0.000**	(0.000)	0.000**	(0.000)	0.000	(0.000)
qtentgelt_p11	0.000***	(0.000)	0.000***	(0.000)	0.000*	(0.000)
qtentgelt_p12	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
az_gesp1	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
firm_un30p1	0.024***	(0.006)	0.054***	(0.012)	0.066***	(0.016)
firm_ue49p1	-0.000	(0.009)	0.003	(0.018)	-0.006	(0.024)
firm_femp1	0.007*	(0.004)	0.011	(0.007)	0.014	(0.010)
firm_lowqualemp1	0.003	(0.004)	0.013	(0.009)	0.014	(0.012)
_cons	-0.137***	(0.027)	0.066	(0.056)	0.545***	(0.073)
r2	0.026		0.068		0.115	
N	409834.000		398052.000		364124.000	

Source: BASiD data; own calculations. Sector dummies omitted. Only women with German citizenship.
Standard errors clustered at firm level.
+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Table 6: Linear Regression Results - Variation with the Business Cycle (Controlled for Trend of Unempl. Rate)

Number Pregnancy Start	(1) 1st Year		(2) 1st-3rd Year		(3) 1st-5th Year	
treated X boom	-0.010*	(0.005)	-0.013	(0.008)	-0.022*	(0.011)
treated X downturn	-0.010*	(0.004)	-0.021**	(0.008)	-0.032**	(0.011)
boom	-0.002	(0.001)	-0.007*	(0.003)	-0.015***	(0.004)
urate trend	-0.002***	(0.000)	-0.005***	(0.001)	-0.007***	(0.002)
age	0.018***	(0.002)	0.017***	(0.004)	-0.013*	(0.006)
age2	-0.000***	(0.000)	-0.001***	(0.000)	-0.000**	(0.000)
tenure	-0.000	(0.000)	-0.001	(0.000)	-0.001	(0.001)
qpregstart_p13	0.067***	(0.009)	0.103***	(0.011)	0.100***	(0.013)
qpregstart_p14	0.075***	(0.009)	0.111***	(0.011)	0.101***	(0.013)
qpregstart_p15	0.077***	(0.008)	0.114***	(0.011)	0.108***	(0.013)
qpregstart_p16	0.073***	(0.008)	0.105***	(0.011)	0.098***	(0.012)
qpregstart_p17	0.054***	(0.007)	0.079***	(0.010)	0.075***	(0.012)
qpregstart_p18	0.044***	(0.007)	0.062***	(0.009)	0.057***	(0.011)
qpregstart_p19	0.031***	(0.006)	0.051***	(0.009)	0.040***	(0.011)
qpregstart_p20	0.031***	(0.006)	0.043***	(0.009)	0.037***	(0.010)
qemp_p7	-0.003	(0.002)	-0.002	(0.003)	-0.006	(0.004)
qemp_p8	-0.001	(0.002)	0.004	(0.003)	0.001	(0.004)
qemp_p9	-0.001	(0.002)	0.001	(0.002)	0.005	(0.003)
qemp_p10	0.001	(0.002)	0.002	(0.002)	0.005	(0.003)
qemp_p11	0.002	(0.002)	0.003	(0.002)	0.007*	(0.003)
qemp_p12	-0.001	(0.002)	0.005	(0.004)	0.007	(0.005)
qalg1_p7	0.003	(0.003)	0.005	(0.005)	0.013*	(0.006)
qalg1_p8	0.003	(0.003)	0.003	(0.004)	0.003	(0.005)
qalg1_p9	0.001	(0.002)	0.003	(0.003)	-0.001	(0.005)
qalg1_p10	0.001	(0.002)	0.005	(0.003)	0.003	(0.004)
qalg1_p11	0.008***	(0.002)	0.012***	(0.003)	0.009*	(0.004)
qalg1_p12	0.010***	(0.003)	0.011*	(0.005)	0.015*	(0.006)
nokids	0.002	(0.002)	0.016***	(0.004)	0.037***	(0.006)
uni	0.024***	(0.005)	0.058***	(0.011)	0.097***	(0.018)
ausbildung	0.007***	(0.002)	0.018***	(0.005)	0.031***	(0.007)
qtentgelt_p1	-0.000***	(0.000)	-0.000**	(0.000)	-0.000	(0.000)
qtentgelt_p2	-0.000**	(0.000)	-0.000*	(0.000)	-0.000*	(0.000)
qtentgelt_p3	-0.000	(0.000)	-0.000	(0.000)	-0.000	(0.000)
qtentgelt_p4	0.000	(0.000)	0.000	(0.000)	0.000**	(0.000)
qtentgelt_p5	-0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
qtentgelt_p6	0.000	(0.000)	0.000**	(0.000)	0.000***	(0.000)
qtentgelt_p7	0.000	(0.000)	0.000	(0.000)	0.000+	(0.000)
qtentgelt_p8	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
qtentgelt_p9	0.000	(0.000)	0.000**	(0.000)	0.000*	(0.000)
qtentgelt_p10	0.000**	(0.000)	0.000*	(0.000)	0.000	(0.000)
qtentgelt_p11	0.000***	(0.000)	0.000***	(0.000)	0.000*	(0.000)
qtentgelt_p12	0.000***	(0.000)	0.000***	(0.000)	0.000***	(0.000)
az_gesp1	0.000	(0.000)	0.000	(0.000)	0.000	(0.000)
firm_un30p1	0.024***	(0.006)	0.061***	(0.014)	0.086***	(0.021)
firm_ue49p1	-0.000	(0.009)	-0.001	(0.020)	-0.031	(0.032)
firm_femp1	0.007*	(0.004)	0.015+	(0.009)	0.021	(0.014)
firm_lowqualemp1	0.003	(0.004)	0.016	(0.010)	0.024	(0.016)
_cons	-0.136***	(0.027)	0.105	(0.064)	0.802***	(0.098)
r2	0.026		0.064		0.107	
N	409834.000		398052.000		364124.000	

Source: BASiD data; own calculations. Sector dummies omitted. Only women with German citizenship. Standard errors clustered at firm level.

+ $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$