PATERNITY LEAVE AND THE HOUSEHOLD INCOME SHARE OF MOTHERS

EVIDENCE FROM THE NETHERLANDS

DISCUSSION PAPER

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Abstract

On the first of July 2020, the Dutch government introduced a reform that enabled fathers to take five additional weeks of paternity leave. In this paper, the reform is used as a natural experiment to estimate the effects of paternity leave on the household income share of mothers. Using a fuzzy Regression Discontinuity Design, the effects of the take-up of paternity leave are estimated, while a Difference-in-Differences approach is used to estimate the effects of the reform itself. We find a small and positive effect of paternity leave on the income share of mothers just after birth, but this effect disappears within a few months. Hence, we conclude that paternity leave does not improve the income share of mothers within the household and, in that sense, does not reduces the gender earnings gap.

Keywords: earmarked paternity leave; labor market position; relative income within households; gender earnings gap

1. Introduction

One of the most important drivers of gender inequality in the labor market is the arrival of children. A recent study estimates that around 80 percent of the difference between the average labor-market income of men and women in Denmark relates to the presence of children (Kleven, Landais and Søgaard, 2018). The average labor market income of women is significantly and permanently reduced after childbirth, while the same is not the case for men. This so-called *child penalty* is an emerging stylised fact in many western countries, including the Netherlands (Adema, Rabate and Rellstab, 2021).

Paternity leave is often discussed as a policy measure to encourage greater gender equality, both in the family and in the labor market. Recently, the European Parliament proposed new measures to impose member countries to give parents the right to two months of non-transferable paternity leave.[1] One of the main arguments for paternity leave legislation is that it should decrease gender inequality in the labor market by increasing the incentives for fathers to take more paternity leave. In this way, mothers can spend more time focusing on their careers, while fathers spend more time with their family due to the paternity leave. This shift in household time allocation might set off a different dynamic between parents in the first months after birth, resulting in substantial changes in the long run (Becker, 1985). Hence, earmarked paternity leave could decrease the income gap and the gender inequality in the labor market.

In this paper, we investigate the causal effects of paternity leave on the relative labor income of women within a couple. We exploit Dutch longitudinal administrative register data together with a reform of the Dutch paternity leave system implemented in 2020: the *Wet Invoering Extra Geboorteverlof* (WIEG). By this reform, fathers could receive up to 5 weeks of additional paternity leave if their child is born on or after the first of July 2020. During those weeks, fathers receive a benefit equal to 70 percent of their wage. This reform provides a natural experiment due to exogenous variation in the access to paternity leave. After all, it is practically impossible to strategically time the exact date of birth of the child around the first of July.

Using a fuzzy Regression Discontinuity Design (RDD), we find a small but positive effect of the take-up of paternity leave on the relative labor income of women in the first three months after birth. However, this is not the result of an improvement of the labor market position of mothers: no significant increase in the level of wages or labor supply of mothers is observed. In fact, the effect in the first months can be fully explained by the significant drop in wages of fathers due to the leave take-up (as a result of the 70 percent benefit level). Thereafter, no effect of the paternity leave take-up is observed. We also use a Difference-in-Difference approach to estimate the effects of the reform itself and find only a significant effect of the reform one month after birth. Overall, we conclude that the additional paternity leave has little impact on the household income share of Dutch mothers.

2. Dutch institutional setting and data

2.1 Paternity leave rules and the 2020 reform

In the Netherlands, fathers are entitled to a maximum of one week of paternity leave paid by the employer. The duration of the leave is equal to the weekly working hours of the father and must be taken within four weeks after the birth. In addition, fathers are eligible to emergency leave and other short-term absenteeism leave for the birth itself and the registration of the birth.

[1] See the press releases from the The European Parlement for more information about these measures.

In addition, the Dutch government introduced the *Wet Invoering Extra Geboorteverlof* (WIEG) in July 2020. This reform enabled fathers to take a maximum of five additional weeks of paternity leave if their child is born on or after the first of July 2020. The duration is equal to five times the weekly working hours of the father and must be taken within six months after birth. During those weeks, the father receives a benefit equal to 70 percent of their wage, under the condition that the employee first uses the initial week of paternity leave paid by the employer.

This reform provides exogenous variation in the take-up of paternity leave. After all, there is natural variation around the expected delivery data. Jukic et al. (2013) show for example that barely 4 percent of the women give birth exactly on their expected delivery date, while 70 percent gives birth within ten days before or after the expected date. Moreover, the delivery data itself can only be influenced to a limited extent: there are only a small number of fertile days in the menstrual cycle and there is a limited chance of getting pregnant during these days. This makes it practically impossible to determine (or manipulate) the exact date of birth of the child around the first of July. It is therefore plausible that fathers who had a child just before or just after the first of July 2020 are comparable ex-ante, but differ only in the extent to which they have access to additional leave due to the reform. This provides an experimental setting, which is exploited in the current study.

2.2 The data and sample selection

To estimate the causal effect of paternity leave, we use linked longitudinal administrative register data from Statistics Netherlands on individuals in the Netherlands from 2019 to 2021. We restrict attention to households who received a child in June or July 2020, in which the father works as an employee (as only employees are entitled to paternity leave) and where the father and mother live together. We exclude same-sex couples, since we are mainly interested in the effects on gender earning gaps.

In addition, we focus only on fathers who work under a collective labor agreement in which the benefit level of 70 percent of the income is not supplemented up to 100 percent, since we do not observe the take-up of additional paternity leave if there is no (incidental) reduction in wages. At the start of the reform, three collective labor agreements supplemented the benefit level up to 100 percent of the wage level: the central government, energy and utility companies and dental technologies. We exclude fathers who are bound by those collective labor agreements.

These sample selection criteria yield a balanced panel of 10.483 couples: 4.913 couples who had a child in June 2020 and 5.570 couples who had a child in July 2020. From the latter group, 38 percent of the fathers took additional paternity leave. We observe all couples each month for 12 months before birth and 13 month after birth. This leads to a total of 262.075 observations.

2.3 Descriptive statistics

Table 1 shows the descriptive statistics of fathers and mothers who had a child in June 2020 (control group) and July 2020 (treatment group). Multiple t-tests are applied to test whether the characteristics of the control and treatment group are significantly different. The p-values of the t-tests reveal that both groups are similar in characteristics ex-ante ($p>0.05$), but differ only in the extent to which the father has access to additional paternity leave due to the reform. On average and compared to mothers, the fathers in our study population are older at the moment of birth, lower educated, participate more often in the labor market, have a higher income, work more hours, are less likely to have a job in the public sector and are more likely to have a permanent contract.

We also see evidence of self-selection into paternity leave. Table A.1 (see appendix A) shows that fathers who take up the additional paternity leave are on average higher educated, receive a higher

hourly wage, work more hours and work more often on permanent contracts. It is also likely that there are unobserved differences, such as already existing egalitarian preferences and involvement of the father in the household-production. Due to this *selection bias*, a simple comparison between households that use and do not use additional paternity leave may lead to biased results. By making use of the exogenous variation in the take-up of leave, the relationship between leave and the relative labor incomes within couples can be identified.

Table 1. *Descriptive statistics*

	Father			Mother		
	control	treatment	p-value	control	treatment	p-value
Background						
Age	33.7	33.6	0.3165	30.9	30.9	0.8922
Low education (%)	9%	10%	0.0935	7%	7%	0.3859
Intermediate education (%)	44%	45%	0.6854	40%	41%	0.3453
High education (%)	36%	36%	0.4259	44%	44%	0.5076
Labor market position						
Labor participation (%)	97%	97%	0.0730	84%	84%	0.9122
Monthly income	€3,144	€3,126	0.6966	€1,983	€1,957	0.3058
Share of household income	64%	63%	0.6994	36%	37%	0.6994
Monthly hours worked	156.4	155.4	0.2184	105.6	105.2	0.6754
Hourly wage	€20.25	€20.17	0.7778	€18.52	€18.35	0.2243
Private sector (%)	75%	74%	0.5062	40%	40%	0.9349
Semi-public sector (%)	9%	9%	0.5709	30%	29%	0.5730
Public sector (%)	13%	13%	0.5761	14%	15%	0.4677
Permanent contract (%)	90%	89%	0.0674	78%	78%	0.8766
Flexible contract (%)	7%	8%	0.3431	6%	6%	0.9210
Paternity leave take-up						
Take-up rate (%)	0%	38%		0%	0%	
Observations	4,913	5,570		4,913	5,570	

Notes. This table shows the descriptive statistics of both fathers and mothers in the control group (child born in June 2020) and the treatment group (child born in July 2020). The labor market characteristics are observed in august 2019, since the pregnancy period of both groups did not start in both groups at that moment. The other characteristics are observed in the month of birth. Multiple t-tests are applied to test whether the characteristics of the control and treatment group are significantly different.

3 Effects of take-up of paternity leave

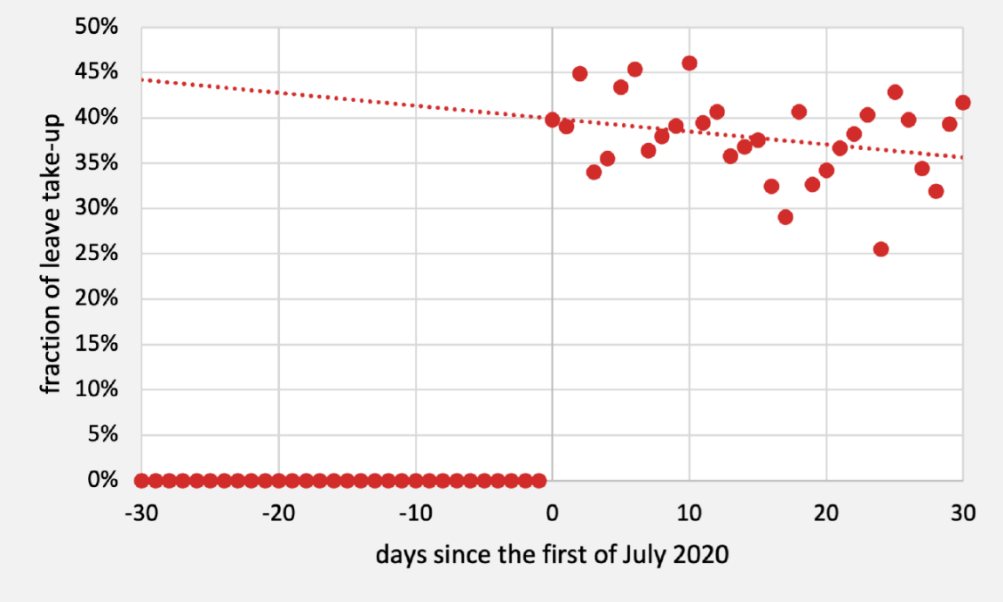
3.1 Identification strategy

The effect of the take-up of paternity leave is evaluated using a fuzzy regression discontinuity design (RDD). Since the reform was introduced on the first of July, with no gradual phase-in period, this provides a sharp cutoff after which a birth was eligible for paternity leave. Moreover, it is practically impossible to determine (or manipulate) the exact date of birth of the child (as discussed earlier). Therefore, whether a birth occurred in July 2020 or in June 2020 was essentially random, allowing to identify the local average treatment effect (LATE) of the take-up of paternity leave.

The fuzzy design implies that households who had a child before or just after the threshold of the first of July (indicated by $\bar{S}$) have a different probability of taking up paternity leave. Figure 1 shows clearly

that there is a jump in the probability of receiving paternity leave from 0 to around 40 percent.[2] This discontinuity around the threshold is used as instrumental variable for the take-up of paternity leave.

Figure 1. *Paternity leave take-up by the day of birth*



Notes. The dots in this figure represent the share of fathers who had a child on that day took up to additional paternity leave. The fitted line gives the general trend after the threshold of the 1st of July 2020.

The model solves the selection problem by isolating and using only the exogenous variation in the father's take-up of paternity leave. Equations 1 and 2 show the model:

$$D_i = \alpha_0 + \alpha_1 f(S_i - \bar{S}) + \alpha_2 I[S_i \geq \bar{S}] + \alpha_3 X_i + u_i \qquad (1)$$

$$y_i = \beta_0 + \beta_1 \widehat{D}_i + \beta_2 f(S_i - \bar{S}) + \beta_3 X_i + \varepsilon_i \qquad (2)$$

Equation 1 forms the first stage, in which the endogenous variable D_i (leave take-up) is regressed on the running or instrumental variable $I[S_i \geq \bar{S}]$ for receiving the child before or after the first of July 2020, a function $f(S_i - \bar{S})$ of the distance in days between the day of birth S_i and the threshold $\bar{S}$ and a vector of control variables X_i. Equation 2 uses the precited values of the endogenous variable $\widehat{D}_i$ to explain the outcome variable y_i, the share of household income of mothers. The random error terms are u_i and ε_i. The parameter of interest is β_1, which indicates the effect of the estimates paternity leave take-up $\widehat{D}_i$ on the outcome variable y_i.

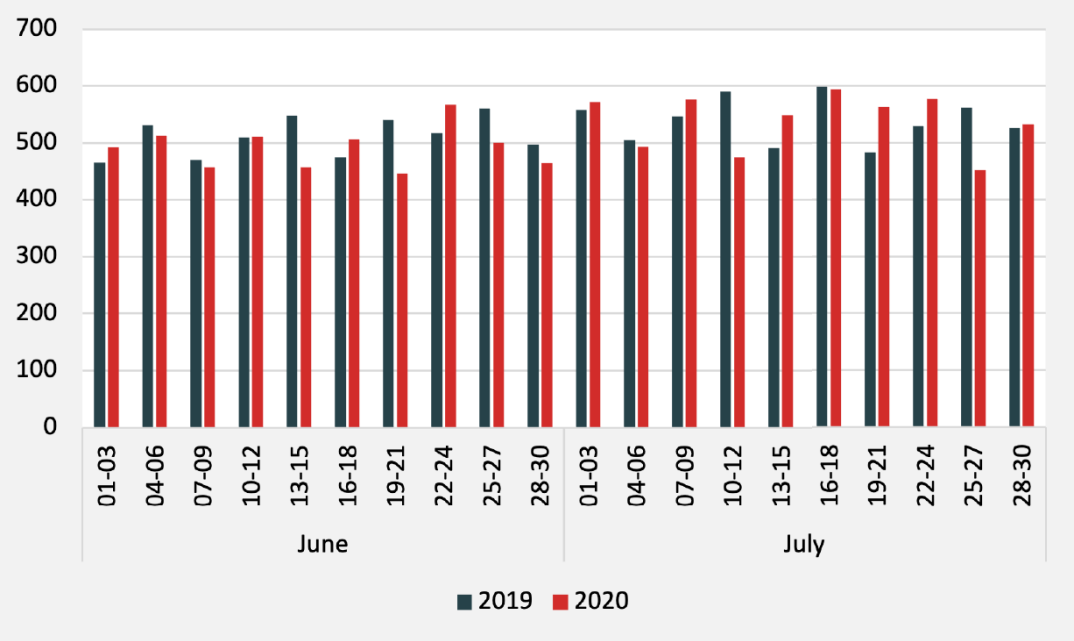
3.2 Assumptions

An important assumption is that households could not manipulate the running variable $I[S_i \geq \bar{S}]$. In other words, there should be no jumps in the number of births around the cutoff or any other sign of households manipulating the day of birth to increase their chances of receiving paternity leave. Furthermore, individuals close to the cutoff point should be very similar in characteristics.

[2] The fitted line shows a slightly negative trend in the take-up rate after the 1st of July 2020. To test whether this slope is significantly different from zero, a simple OLS regression is applied with the fraction of additional paternity leave take-up as dependent variable and the day of birth as independent variable. The results are presented in in Appendix A. The p-value is equal to 0.131, so we conclude that the trend is not significant.

Figure 2 shows the distribution of number of births around the cutoff for both 2019 and 2020. There are no large deviations between the bins of 2019 and 2020. However, the first three days after the threshold, there are slightly more children born in 2020 than in 2019. A significant increase might be an indication of parents deliberately manipulate the date of birth to July such that the father is able to take-up paternity leave. To test if the increase is significant, a McCrary density test is applied, which shows that the density of birth is continuous around the threshold (p=0.7010).[3] In addition, we already showed in Table 1 that fathers and mothers have the same characteristics in the pre-reform periods. We are therefore convinced that there is no manipulation in the running variable.

Figure 2: *Distribution of births in June and July 2019-2020*



Notes. The figure shows the births of the study population: households who received a child in June or July, in which the father works as an employee (as only employees are entitled to paternity leave), where a father and mother live together. The number of births are presented within bins of 3 days. The same figure for all births is represented in Appendix A.

3.3 Results

Table 2 shows the results of the fuzzy regression discontinuity model. The results of the first stage estimates show that the birth month is significantly related to the paternity leave take-up (F>10).[4] This is in line with the expectations since only parents who had a child in July have access to additional paternity leave, resulting in a highly positive effect of birth month on paternity leave take-up. Therefore, the chosen instrument is argued to be relevant. The second stage estimates reveal that in the short run (1-3 months after birth), there is an increase in the mother's share in the household income due to the paternity leave take-up. However, this is not the result of an improvement of the labor market position of mothers since there is no significant increase in the level of wages or labor supply of mothers (see Appendix D). In fact, the effects in the first 3 months can be fully explained by

[3] McCrary (2008) provides a test for manipulation of the assignment variable in a regression discontinuity setting.

[4] Other variables that are significantly positive related to take-up of additional leave are the age of the mother, the educational level (father and mother) and having a permanent contract (father and mother). Significantly negative related variables are the age of the father and the number of children.

the significant drop in wages of fathers due to the leave take-up, because of the 70 percent benefit level. After three months, no significant effect of the paternity leave take-up is observed.[5]

We also conduct a number of robustness checks (see Appendix C for the results). Firstly, we test the model using different sets of control variables X_i. The results hardly change by adding no or only basic background controls (such as age, educational level and region) in the model, which strengthens the validity of our experimental design. Secondly, we test the model using a smaller bandwidth around the threshold. After all, it could be more random for parents with children born closer to the threshold whether they have access to additional paternity leave. We therefore use a bandwidth of eleven days (instead of one month) based on the optimal bandwith test provided by Calonica et al. (2020). Compared to the main results, the effects are quite similar in almost all periods after birth. The effect of paternity leave only tends to zero slightly faster than in the main model (within 3 months), but that could also be due to the smaller sample size around the threshold. Thirdly, we use different specifications for the function of $f(S_i - \bar{S})$, which is defined as the absolute distance between the day of and the threshold (in days) in the main model. A frequently used alternative specification in fuzzy RD-designs is the polynominal function of the distance to the threshold. We therefore specify $(S_i - \bar{S})$ as a polynominal of the second degree, namely $(S_i - \bar{S})$+ $(S_i - \bar{S})^{\cdot\cdot}$ We also test a model without the function of the distance to the threshold $f(S_i - \bar{S})$ from the model, so that the model essentially boils down to a basic Instrumental Variable-model. The results of the models with alternative specifications are, however, similar to the results of the main model. Overall, we conclude that the results are robust for different specifications and data-selection-procedures.

Table 3: *Results Regression Discontinuity Design*

	First stage: take-up	**Second stage: mother's income share**				
		Month after birth				
		month 1	month 3	month 5	month 7	month 9
Effect of paternity leave take-up		0.0367***	0.0165**	0.0070	-0.0002	-0.0012
		(0.0063)	(0.0073)	(0.0082)	(0.0086)	(0.0087)
Month of birth	0.3804***					
	(0.0064)					
Distance to threshold	-0.0008**	0.0001	-0.0000	0.0000	0.0001	0.0001
	(0.0004)	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,482	10,445	10,403	10,366	10,318	10,314
R-squared	0.2549	0.6961	0.5849	0.4767	0.4413	0.4230
F	124.4	2089	754.6	405.5	324.7	295.6

Notes. Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Controls in first and second stage models: region, age mother/father, education level mother/father, number of children, labor market position (public/private sector, permanent/flexible contract, company size) mother/father. Appendix B displays the entire model including coefficients for the control variables.

3.4 Heterogeneity

The effect of paternity leave could be stronger following the first birth than the birth of an additional child. First, a mother can combine several childcare and household tasks when an additional child is born, and thereby reaping the benefits of scale. One study suggests for instance that mothers spend

[5] The results of 12 months after birth are not presented in Table 3, but are insignificant as well.

as much as 40 percent less time on a second child than on the first (Ekert-Jaffé, 2010). Second, household dynamics already changed after the first birth and are assumed to be path dependent to some extent. These considerations suggest that the first birth is more detrimental to women's earnings. We therefore estimate the effects of paternity leave specifically for households who had their first child in June or July 2020. However, we do not find any evidence for a stronger effect following the first birth (see Table 4). The effect of paternity leave even tends to zero slightly faster for parents who have had their first child.

Table 4: *Results Regression Discontinuity Design, only first child*

	First stage: take-up	**Second stage: mother's income share**				
		Month after birth				
		month 1	month 3	month 5	month 7	month 9
Effect of paternity leave take-up		0.0324***	0.0063	0.0054	-0.0053	-0.0036
		(0.0084)	(0.0103)	(0.0117)	(0.0121)	(0.0121)
Month of birth	0.4148***					
	(0.0099)					
Distance to threshold	-0.0008	-0.0002	-0.0001	-0.0001	-0.0002	-0.0003
	(0.0006)	(0.0002)	(0.0002)	(0.0003)	(0.0003)	(0.0003)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,598	4,585	4,570	4,555	4,542	4,538
R-squared	0.2869	0.7067	0.5678	0.4451	0.4087	0.3855
F	65.58	976.9	292.9	147.2	117.8	104.2

Notes. Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Controls in first and second stage models: region, age mother/father, education level mother/father, number of children, labor market position (public/private sector, permanent/flexible contract, company size) mother/father. Appendix B displays the entire model including coefficients for the control variables.

4 Effects of paternity leave reform

4.1 Identification strategy

In addition to the local effect, we also estimate the effect of the reform itself (the intention to treat effect (ITT)). The treatment group consists of individuals that are entitled to additional leave as result of the reform (e.g. child born in July 2020). The control group consists of individuals that had a child just before the introduction of the reform and therefore not entitle to additional leave (e.g. child born in June 2020). This is particularly interesting from a policy point of view, because it indicates the extent to which a particular intervention is effective in the 'real world'.

We use a basic Difference-in-Difference (DiD) estimator in which we compare the treatment and control groups in the pre- and post-treatment period. The model is formulated as follows:

$$y_{it} = \beta_0 + T_i + D_t + \sum_{t=0}^{T_{12}} \rho_t (D_t * T_i) + u_{it} \qquad (3)$$

Here, T_i represents the individual fixed effect which equals zero if the child was born in June (control group) and equals one if the child was born in July (treatment group). D_t represents the time fixed effects by indicating whether the period t is before ($D_t = 0$) or after birth ($D_t = 1$). The time periods t represent the number of months before or after birth. The model is estimated for post-reform period between $t = 0$ (the month of birth) until $t = 12$ (a year after birth), compared to the pre-reform

period $t = -12$ (a year before birth). To see if the reform had a significant effect on the outcome in month t, the differences between the post- and pre-reform periods for the treatment group are compared with the differences for the control group.

In addition, we use an event study to compare the treatment and control group in all the pre- and post-treatment periods and to test for the parallel trend assumption (see 4.2). The model is formulated as follows:

$$y_{it} = \beta_0 + \sum_{k=-12}^{-2} \rho_k (D_k * T_i) + \sum_{k=0}^{12} \rho_k (D_k * T_i) + \delta X_{it} + T_i + D_t + u_{it} \qquad (4)$$

The period $t = -1$ (one month before birth) is left out of the model to avoid perfect multicollinearity. D_k is a dummy variable that is equal to one if the period is equal to k and zero otherwise. X_{it} are some background characteristics such as the region, sector and contract type. If the reform had an effect on the outcome in period t after birth, the coefficient ρ_k should be significantly different from zero. Comparing the coefficients of all time periods after birth $\rho_0, \dots, \rho_{T_1}$, reveals the months after birth in which the additional leave had an effect on the labor market outcomes.

4.2 Results

Table 4 shows the results of the basic Difference-in-Difference estimator. Similar to the outcomes of the Fuzzy RD model, there is a significant increase in the mother's share in the household income just after birth, but this effect disappears within a few months. There is no significant effect of paternity leave reform from three months after birth onwards. The results of the event study (Figure 5) – in which we control for several background characteristics - confirm that there is only an effect on the mother's household share in the very short run. Appendix E shows furthermore that the results are robust for using different sets of control variables.

Table 4: *Results Difference-in-Differences Analysis*

	Mother's income share in months after birth				
	month 1	month 3	month 5	month 7	month 9
Indicator period after birth (D_t)	-0.0406***	-0.0421***	-0.0456***	-0.0379***	-0.0373***
	(0.0043)	(0.0043)	(0.0043)	(0.0044)	(0.0044)
Indicator treatment group (T_i)	0.0011	0.0011	0.0011	0.0011	0.0011
	(0.0041)	(0.0041)	(0.0041)	(0.0041)	(0.0041)
Indicator period after birth (D_t) * treatment group (T_i)	0.0145**	0.0069	0.0037	0.0009	0.0004
	(0.0060)	(0.0059)	(0.0060)	(0.0060)	(0.0060)
Constant	0.3658***	0.3658***	0.3658***	0.3658***	0.3658***
	(0.0030)	(0.0030)	(0.0030)	(0.0030)	(0.0030)
Controls	No	No	No	No	No
Observations	20,792	20,750	20,713	20,665	20,661
R-squared	0.0064	0.0082	0.0103	0.0075	0.0074

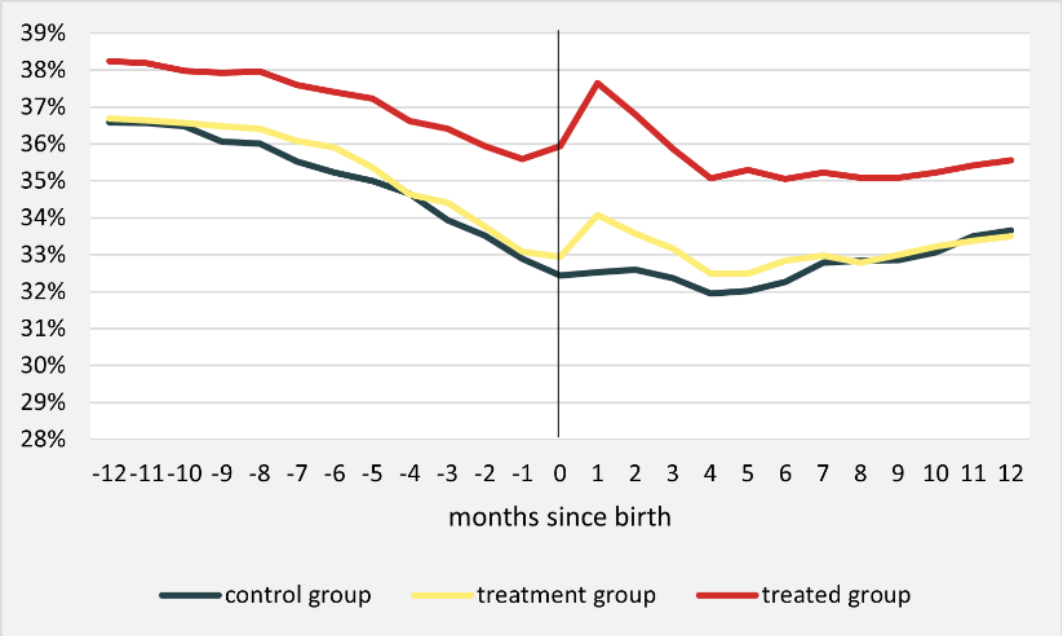
Notes. The model compares the mother's income share in the first, third, fifth, seventh and ninth month after birth with the mother's income share one year before birth. The interaction term between the time fixed effects and the dummy for treatment indicates the effect of the reform on the mother's income share in months after birth.

4.3 Assumptions

The parallel trend assumption is the most critical assumption in order to able to estimate causal effects. It requires that in the absence of the paternity leave reform, the difference between treatment and control group is constant over time. We test this assumption by comparing if the outcomes in the control and treatment group move in parallel in the pre-reform periods (or: ρ_k=0 for $k < 0$).

The event study (Figure 4) shows that there a few pre-reform periods in which there are divergent trends between the control and treatment group, namely the ninth, fourth and third month before birth. The null hypothesis that all pre-reform periods are statistically equal to zero is therefore rejected. However, we graphically see a similar trend (Figure 3) and there are only a few pre-treatment months that differ significantly between the treatment and control group (Figure 4). Applying a significance level of 5 percent, this could be because of coincidence instead of fundamental differences in trends between the treatment and control group. Moreover, the deviations in the ninth and fourth period are rather small.[6] We therefore assume parallel trends.

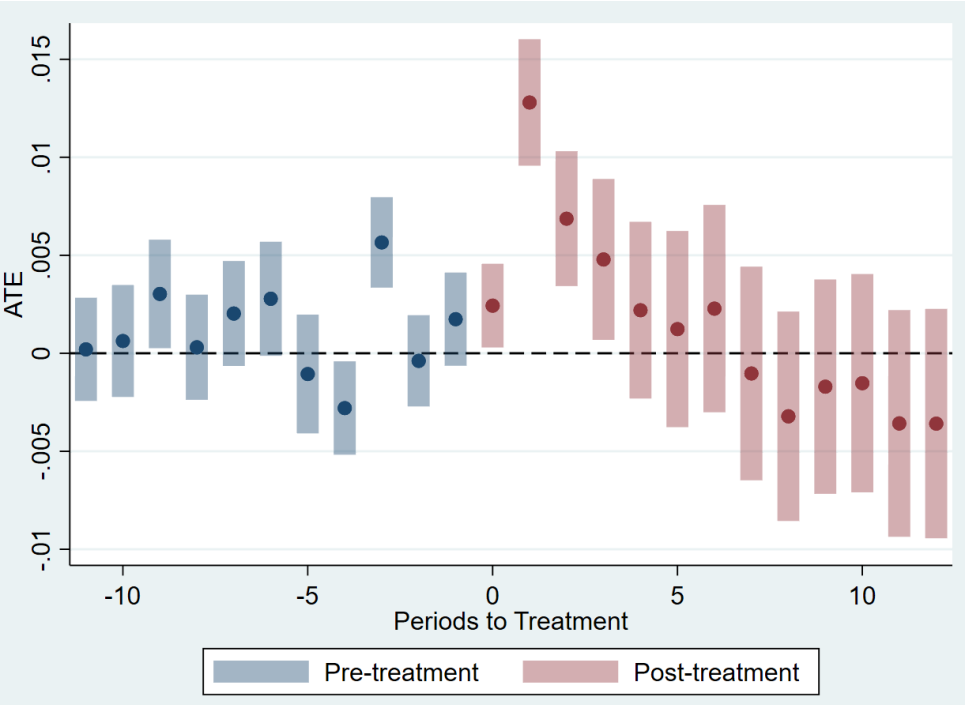
Figure 3: *Trend in treatment group, control group and treated group of mother's share in income*



Notes. The figure shows the mean household income share of mothers over time. The control group is the group of parents who had a child in June 2020. The treatment group is the group of parents who had a child in July 2020. The treated group is a subgroup of the treatment group and contains all parents of which the father took additional paternity leave. The horizontal axis shows the number of months since the month of birth.

[6] The deviation in the third period is larger. We observe in the data a temporary increase in average income for fathers in the control group, which is not visible for mothers. Moreover, the increase in income level is not observed for the treatment group. A possible explanation could therefore be that fathers in the control group receive a compensation from employers for the expected lack of access to additional paternity leave.

Figure 4: *Plotted coefficients of event study (difference in mothers income share between treatment and control group)*



Notes. The vertical axis denotes the Average Treatment Effect (ATE). The ATE measures the difference in mean outcomes between the control and treatment group. The 95%-confidence intervals of the ATEs are included. If the ATE of zero is not included in this confidence interval, the control and treatment group differ significantly on a 5% level in their outcome variable. The horizontal axis indicates the month, where month zero equal the month of birth. Controls in the model: region, age mother/father, education level mother/father, number of children, labor market position (public/private sector, permanent/flexible contract, company size) mother/father.

7. Concluding discussion

Our conclusion is that paternity leave does not improve women's labor income share within the household and, in that sense, does not reduces the gender earnings gap. This is in line with earlier research from Sweden (Ekberg et al., 2013), Norway (Abrahamsen, 2018, cools et al., 2015), Spain (Farré en Gonzalez, 2017), Germany (Tamm, 2018) and Austria (Kleven et al., 2018). All these studies did not find a permanent effect of paternity leave on the labor market positions of mother's.

There are, however, a number of knowledge gaps that could be addressed in future research. Firstly, we only studied the short-term effects of paternity leave (up to 12 months after birth). It is possible that the changes in the intrahousehold division of work tasks take more time, especially because role divisions are believed to be quite traditional and constant over time in the Netherlands: the mother takes on the majority of childcare and household duties (SCP, 2020). Secondly, there could be other channels through which paternity leave influences the labor market position of mothers. It is, for example, possible that additional paternity leave leads to a reduction in pregnancy discrimination. Employers could be less reluctant to hire or promote women (because the risks of birth absence decreases between men and women), which could improve the labor market position of women. . Finally, there could be other effects of paternity leave that legitimizes additional paternity leave. Earlier research found for example positive effects on life satisfaction (Korsgren & Van Lent, 2021; Burgess,

2006), the connection between father and child, involvement in childcare (Tannak & Walfdfogel, 2007., Regioplan, 2022) and the development of children (Cools, Fiva & Kirkebøen, 2015). Future research could use the experimental setting created by the Dutch WIEG-reform to identify these other (long term) effects.

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Appendix A: preliminary analysis

Table A.1: *Descriptive statistics of couples who took additional paternity leave*

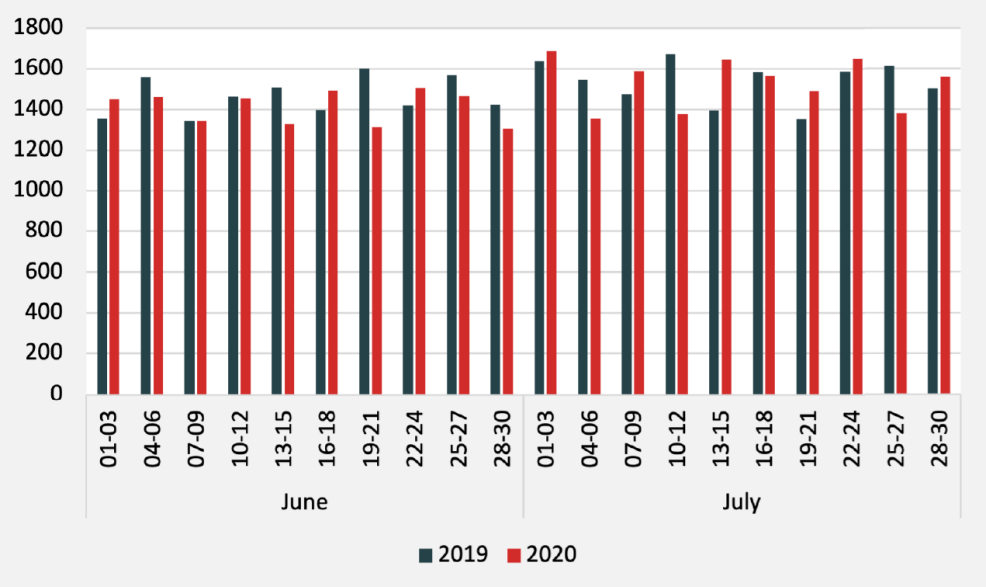
	Father			Mother		
	1 month	2 weeks	1 week	1 month	2 weeks	1 week
Age	33.6	33.6	33.5	31.3	31.4	31.4
Low education	6%	5%	5%	5%	4%	5%
Intermediate education	44%	45%	46%	37%	37%	35%
High education	43%	42%	41%	53%	53%	55%
Labor participation	98%	98%	97%	89%	89%	89%
Monthly income	€3,254	€3,235	€3,219	€2,207	€2,188	€2,210
Share of household income	62%	61%	61%	38%	39%	39%
Monthly hours worked	159.4	159.0	157.5	112.3	112.6	112.4
Hourly wage	€20.64	€20.68	€20.97	€19.41	€19.18	€19.45
Private sector	72%	71%	71%	40%	40%	38%
Subsidized sector	13%	13%	12%	31%	32%	33%
Public sector	13%	14%	14%	17%	17%	18%
Permanent contract	94%	94%	94%	83%	83%	82%
Flexible contract	4%	4%	3%	6%	6%	7%
Observations	2,103	984	515	2,103	984	515

Notes. The table shows the characteristics of couples of which the father took the additional paternity leave, for different bandwidths around the first of July 2020.

Table A.2 *OLS regression results for additional paternity leave take-up*

	Coef.	Std. Err.	t	P >| t |	[95% Conf. Interval]	
Day of Birth	-0.0014	0.0009	-1.55	0.131	-0.0033	0.0005
Constant	0.4007	0.0168	23.80	0.000	0.3663	0.4351

Figure A.1 *Distribution of births in the Netherlands within 3-day bins*



Appendix B: main RD-estimates

Table B.1: *Fuzzy RD estimates, with all controls*

	First stage	Second stage				
		month 1	month 3	month 5	month 7	month 9
Distance to threshold	-0.0008**	0.0001	-0.0000	0.0000	0.0001	0.0001
	(0.0004)	(0.0001)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Month of birth	0.3804***					
	(0.0064)					
Effect of paternity leave take-up		0.0367***	0.0165**	0.0070	-0.0002	-0.0012
		(0.0063)	(0.0073)	(0.0082)	(0.0086)	(0.0087)
Region						
East	-0.0109	0.0008	-0.0067	-0.0018	-0.0052	-0.0048
	(0.0126)	(0.0045)	(0.0051)	(0.0057)	(0.0062)	(0.0063)
West	-0.0208*	0.0111***	-0.0010	0.0016	-0.0051	-0.0033
	(0.0117)	(0.0042)	(0.0048)	(0.0055)	(0.0058)	(0.0059)
South	0.0048	0.0055	-0.0043	0.0005	-0.0107*	-0.0083
	(0.0130)	(0.0045)	(0.0051)	(0.0057)	(0.0062)	(0.0062)
Age mother	0.0050***	0.0033***	0.0040***	0.0039***	0.0034***	0.0040***
	(0.0011)	(0.0004)	(0.0005)	(0.0005)	(0.0006)	(0.0006)
Age father	-0.0018**	-0.0012***	-0.0015***	-0.0010**	-0.0011**	-0.0015***
	(0.0008)	(0.0003)	(0.0004)	(0.0004)	(0.0005)	(0.0005)
Educational level mother						
Intermediate	0.0144	0.0230***	0.0259***	0.0251***	0.0336***	0.0379***
	(0.0133)	(0.0051)	(0.0060)	(0.0071)	(0.0075)	(0.0075)
High	0.0494***	0.0759***	0.0781***	0.0730***	0.0882***	0.0939***
	(0.0144)	(0.0055)	(0.0063)	(0.0074)	(0.0079)	(0.0079)
Unknown	-0.0027	0.0267***	0.0159**	0.0115	0.0159*	0.0203**
	(0.0164)	(0.0058)	(0.0070)	(0.0085)	(0.0091)	(0.0092)
Educational level father						
Intermediate	0.0384***	-0.0174***	-0.0225***	-0.0200***	-0.0241***	-0.0197***
	(0.0121)	(0.0049)	(0.0060)	(0.0066)	(0.0073)	(0.0072)
High	0.0383***	-0.0524***	-0.0571***	-0.0567***	-0.0610***	-0.0593***
	(0.0135)	(0.0053)	(0.0063)	(0.0069)	(0.0077)	(0.0076)
Unknown	0.0151	-0.0083	-0.0160**	-0.0217***	-0.0234***	-0.0182**
	(0.0144)	(0.0058)	(0.0070)	(0.0081)	(0.0090)	(0.0089)
Number of children	-0.0232***	-0.0206***	-0.0244***	-0.0243***	-0.0225***	-0.0219***
	(0.0041)	(0.0016)	(0.0018)	(0.0020)	(0.0022)	(0.0022)
Labor market position mother						
Private sector, permanent contract, 100+ employees	0.0252**	0.0304***	0.0280***	0.0311***	0.0336***	0.0303***
	(0.0123)	(0.0050)	(0.0055)	(0.0060)	(0.0063)	(0.0065)
Private sector, flexible contract, 100- employees	-0.0883**	-0.1458***	-0.1575***	-0.1275***	-0.1323***	-0.1171***
	(0.0357)	(0.0242)	(0.0262)	(0.0270)	(0.0273)	(0.0268)
Private sector, flexible contract, 100+ employees	-0.0092	-0.1770***	-0.1539***	-0.1201***	-0.1286***	-0.0928***
	(0.0271)	(0.0178)	(0.0176)	(0.0190)	(0.0195)	(0.0204)
Public sector, permanent contract, 100- employees	-0.0001	-0.0007	0.0013	0.0012	0.0028	-0.0100
	(0.0179)	(0.0068)	(0.0074)	(0.0082)	(0.0082)	(0.0078)

Public sector, permanent contract, 100+ employees	0.0133	0.0458***	0.0418***	0.0446***	0.0524***	0.0451***
	(0.0105)	(0.0040)	(0.0044)	(0.0049)	(0.0051)	(0.0052)
Public sector, flexible contract, 100- employees	-0.0037	-0.2004***	-0.1708***	-0.0953***	-0.1028**	-0.0713**
	(0.0690)	(0.0341)	(0.0293)	(0.0360)	(0.0411)	(0.0364)
Public sector, flexible contract, 100+ employees	-0.0035	-0.0352*	-0.0153	-0.0204	-0.0159	-0.0234
	(0.0353)	(0.0184)	(0.0205)	(0.0218)	(0.0200)	(0.0195)
Not working	-0.0018	-0.3894***	-0.3444***	-0.3060***	-0.2895***	-0.2821***
	(0.0114)	(0.0038)	(0.0048)	(0.0054)	(0.0059)	(0.0060)
Labor market position father						
Private sector, permanent contract, 100+ employees	0.0656***	-0.0065**	-0.0083**	-0.0084**	-0.0162***	-0.0153***
	(0.0083)	(0.0028)	(0.0033)	(0.0037)	(0.0040)	(0.0040)
Private sector, flexible contract, 100- employees	-0.1287***	0.0790***	0.0851***	0.0740***	0.0772***	0.0670***
	(0.0190)	(0.0139)	(0.0172)	(0.0204)	(0.0214)	(0.0211)
Private sector, flexible contract, 100+ employees	-0.1173***	0.0654***	0.0599***	0.0486***	0.0586***	0.0582***
	(0.0130)	(0.0070)	(0.0086)	(0.0097)	(0.0109)	(0.0108)
Public sector, permanent contract, 100- employees	-0.0021	0.0185*	0.0226*	0.0148	0.0126	0.0135
	(0.0257)	(0.0101)	(0.0120)	(0.0129)	(0.0131)	(0.0131)
Public sector, permanent contract, 100+ employees	0.0511***	0.0160***	0.0124***	0.0155***	0.0036	0.0077
	(0.0104)	(0.0036)	(0.0041)	(0.0047)	(0.0047)	(0.0049)
Public sector, flexible contract, 100- employees	-0.1383**	0.0629**	0.0940**	0.0491	0.0660**	0.0617*
	(0.0537)	(0.0289)	(0.0383)	(0.0348)	(0.0299)	(0.0345)
Public sector, flexible contract, 100+ employees	0.0048	0.1087***	0.1074***	0.0789***	0.0853***	0.1066***
	(0.0426)	(0.0280)	(0.0286)	(0.0302)	(0.0312)	(0.0325)
Constant	-0.1456***	0.3164***	0.3110***	0.2854***	0.3029***	0.2906***
	(0.0335)	(0.0125)	(0.0146)	(0.0171)	(0.0182)	(0.0178)
Observations	10,482	10,445	10,403	10,366	10,318	10,314
R-squared	0.2549	0.6961	0.5849	0.4767	0.4413	0.4230
F	124.4	2089	754.6	405.5	324.7	295.6

Table B.2: *Fuzzy RD estimates, with all controls & only parents who received first child*

	First stage	Second stage				
		month 1	month 3	month 5	month 7	month 9
Distance to threshold	-0.0008	-0.0002	-0.0001	-0.0001	-0.0002	-0.0003
	(0.0006)	(0.0002)	(0.0002)	(0.0003)	(0.0003)	(0.0003)
Month of birth	0.4148***					
	(0.0099)					
Effect of paternity leave take-up		0.0324***	0.0063	0.0054	-0.0053	-0.0036
		(0.0084)	(0.0103)	(0.0117)	(0.0121)	(0.0121)
Region						
East	-0.0328*	0.0144**	0.0030	0.0150*	0.0065	0.0070
	(0.0193)	(0.0066)	(0.0080)	(0.0088)	(0.0096)	(0.0094)
West	-0.0477***	0.0215***	0.0006	0.0146*	-0.0002	0.0071
	(0.0180)	(0.0060)	(0.0074)	(0.0083)	(0.0089)	(0.0088)
South	-0.0246	0.0147**	0.0007	0.0178**	-0.0010	0.0009
	(0.0198)	(0.0064)	(0.0080)	(0.0089)	(0.0096)	(0.0094)
Age mother	0.0075***	0.0036***	0.0050***	0.0045***	0.0041***	0.0042***
	(0.0017)	(0.0006)	(0.0007)	(0.0008)	(0.0009)	(0.0009)
Age father	-0.0020	-0.0023***	-0.0025***	-0.0021***	-0.0022***	-0.0029***
	(0.0012)	(0.0004)	(0.0005)	(0.0006)	(0.0007)	(0.0007)
Educational level mother						
Intermediate	0.0189	0.0284***	0.0423***	0.0367***	0.0523***	0.0722***
	(0.0214)	(0.0083)	(0.0098)	(0.0121)	(0.0123)	(0.0117)
High	0.0536**	0.0770***	0.0940***	0.0874***	0.1095***	0.1244***
	(0.0229)	(0.0087)	(0.0102)	(0.0126)	(0.0128)	(0.0123)
Unknown	-0.0220	0.0321***	0.0222*	0.0173	0.0261*	0.0369***
	(0.0267)	(0.0093)	(0.0114)	(0.0146)	(0.0146)	(0.0141)
Educational level father						
Intermediate	0.0437**	-0.0208***	-0.0337***	-0.0218**	-0.0311***	-0.0300***
	(0.0185)	(0.0079)	(0.0100)	(0.0103)	(0.0113)	(0.0113)
High	0.0458**	-0.0496***	-0.0631***	-0.0570***	-0.0642***	-0.0629***
	(0.0208)	(0.0083)	(0.0106)	(0.0109)	(0.0119)	(0.0120)
Unknown	0.0305	-0.0073	-0.0166	-0.0263*	-0.0273*	-0.0258*
	(0.0244)	(0.0098)	(0.0130)	(0.0140)	(0.0152)	(0.0153)
Labor market position mother						
Private sector, permanent contract, 100+ employees	0.0248	0.0154**	0.0196**	0.0200**	0.0249***	0.0232**
	(0.0176)	(0.0070)	(0.0078)	(0.0087)	(0.0090)	(0.0090)
Private sector, flexible contract, 100- employees	-0.0639	-0.1343***	-0.1402***	-0.0794*	-0.1339***	-0.0900**
	(0.0534)	(0.0370)	(0.0427)	(0.0442)	(0.0372)	(0.0409)
Private sector, flexible contract, 100+ employees	0.0140	-0.2382***	-0.1833***	-0.1311***	-0.1281***	-0.1000***
	(0.0419)	(0.0229)	(0.0269)	(0.0297)	(0.0295)	(0.0302)
Public sector, permanent contract, 100- employees	0.0239	0.0081	0.0152	0.0081	0.0111	-0.0026

	(0.0271)	(0.0093)	(0.0106)	(0.0125)	(0.0128)	(0.0117)
Public sector, permanent contract, 100+ employees	0.0090	0.0384***	0.0422***	0.0444***	0.0510***	0.0446***
	(0.0154)	(0.0056)	(0.0063)	(0.0071)	(0.0074)	(0.0074)
Public sector, flexible contract, 100- employees	0.0661	-0.3195***	-0.2210***	0.0029	0.0371	0.0612
	(0.0708)	(0.0747)	(0.0735)	(0.1153)	(0.1317)	(0.1204)
Public sector, flexible contract, 100+ employees	0.0451	-0.0519**	-0.0375*	-0.0084	-0.0077	-0.0370
	(0.0540)	(0.0259)	(0.0222)	(0.0280)	(0.0208)	(0.0230)
Not working	0.0283	-0.4290***	-0.3648***	-0.3155***	-0.2898***	-0.2747***
	(0.0178)	(0.0056)	(0.0077)	(0.0089)	(0.0094)	(0.0097)
Labor market position father						
Private sector, permanent contract, 100+ employees	0.0573***	-0.0092**	-0.0078	-0.0038	-0.0187***	-0.0107*
	(0.0128)	(0.0042)	(0.0051)	(0.0058)	(0.0060)	(0.0060)
Private sector, flexible contract, 100- employees	-0.1940***	0.0801***	0.0961***	0.0569*	0.0674*	0.0507
	(0.0303)	(0.0226)	(0.0278)	(0.0329)	(0.0355)	(0.0343)
Private sector, flexible contract, 100+ employees	-0.1465***	0.0794***	0.0706***	0.0551***	0.0724***	0.0782***
	(0.0191)	(0.0097)	(0.0121)	(0.0142)	(0.0156)	(0.0156)
Public sector, permanent contract, 100- employees	-0.0089	0.0097	-0.0003	-0.0100	-0.0080	0.0012
	(0.0409)	(0.0162)	(0.0186)	(0.0205)	(0.0219)	(0.0206)
Public sector, permanent contract, 100+ employees	0.0621***	0.0125**	0.0105*	0.0213***	0.0089	0.0168**
	(0.0160)	(0.0052)	(0.0062)	(0.0073)	(0.0074)	(0.0076)
Public sector, flexible contract, 100- employees	-0.1871***	0.0119	0.0621	-0.0534	-0.0038	-0.0203
	(0.0677)	(0.0276)	(0.0715)	(0.0352)	(0.0274)	(0.0310)
Public sector, flexible contract, 100+ employees	-0.0018	0.0987**	0.1063**	0.0525	0.0825**	0.1007**
	(0.0609)	(0.0414)	(0.0422)	(0.0365)	(0.0414)	(0.0418)
Constant	-0.2149***	0.3536***	0.3176***	0.2792***	0.3040***	0.2968***
	(0.0498)	(0.0178)	(0.0220)	(0.0264)	(0.0271)	(0.0266)
Observations	4,598	4,585	4,570	4,555	4,542	4,538
R-squared	0.2869	0.7067	0.5678	0.4451	0.4087	0.3855
F	65.58	976.9	292.9	147.2	117.8	104.2

Appendix C: robustness checks

Table C.1: *Fuzzy RD estimates, without controls*

	First stage: take-up	**Second stage: mother's income share**				
		Month after birth				
		month 1	month 3	month 5	month 7	month 9
Effect of paternity leave take-up		0.0413***	0.0213*	0.0127	0.0051	0.0039
		(0.0115)	(0.0113)	(0.0114)	(0.0116)	(0.0115)
Month of birth	0.3779***					
	(0.0065)					
Distance to threshold	-0.0008**	-0.0002	-0.0002	-0.0001	-0.0001	-0.0000
	(0.0004)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Controls	No	No	No	No	No	No
Observations	10,483	10,446	10,404	10,367	10,319	10,315
R-squared	0.2217	0.0013	0.0004	0.0001	0.0000	0.0000
F	1690	6.758	2.146	0.724	0.134	0.0707

Table C.2: *Fuzzy RD estimates, with only background controls (region, age, education, number of children)*

	First stage: take-up	**Second stage: mother's income share**				
		Month after birth				
		month 1	month 3	month 5	month 7	month 9
Effect of paternity leave take-up		0.0435***	0.0225**	0.0123	0.0054	0.0045
		(0.0105)	(0.0104)	(0.0107)	(0.0109)	(0.0108)
Month of birth	0.3774***					
	(0.0064)					
Distance to threshold	-0.0008**	-0.0002	-0.0003	-0.0002	-0.0001	-0.0001
	(0.0004)	(0.0002)	(0.0002)	(0.0002)	(0.0002)	(0.0002)
Region						
East	-0.0072	0.0099	0.0010	0.0047	0.0009	0.0021
	(0.0127)	(0.0073)	(0.0073)	(0.0073)	(0.0076)	(0.0075)
West	-0.0173	0.0125*	-0.0003	0.0022	-0.0049	-0.0022
	(0.0119)	(0.0070)	(0.0069)	(0.0070)	(0.0072)	(0.0071)
South	0.0111	0.0098	-0.0010	0.0033	-0.0094	-0.0060
	(0.0132)	(0.0075)	(0.0074)	(0.0075)	(0.0077)	(0.0076)
Age mother	0.0059***	0.0078***	0.0078***	0.0073***	0.0068***	0.0072***
	(0.0011)	(0.0007)	(0.0007)	(0.0007)	(0.0007)	(0.0007)
Age father	-0.0013	-0.0032***	-0.0033***	-0.0027***	-0.0028***	-0.0031***
	(0.0008)	(0.0005)	(0.0005)	(0.0006)	(0.0006)	(0.0006)
Educational level mother						
Intermediate	0.0283**	0.1272***	0.1191***	0.1079***	0.1132***	0.1132***
	(0.0134)	(0.0083)	(0.0083)	(0.0089)	(0.0091)	(0.0089)
High	0.0698***	0.2168***	0.2037***	0.1859***	0.1963***	0.1962***
	(0.0142)	(0.0087)	(0.0086)	(0.0092)	(0.0093)	(0.0093)
Unknown	-0.0030	0.0083	0.0013	-0.0023	0.0004	0.0056

	(0.0166)	(0.0109)	(0.0110)	(0.0117)	(0.0120)	(0.0120)
Educational level father						
Intermediate	0.0549***	0.0306***	0.0183**	0.0165*	0.0079	0.0123
	(0.0121)	(0.0084)	(0.0085)	(0.0086)	(0.0091)	(0.0089)
High	0.0685***	0.0007	-0.0121	-0.0147	-0.0264***	-0.0242***
	(0.0132)	(0.0088)	(0.0089)	(0.0090)	(0.0094)	(0.0093)
Unknown	0.0143	0.0093	-0.0005	-0.0083	-0.0114	-0.0051
	(0.0146)	(0.0105)	(0.0105)	(0.0109)	(0.0115)	(0.0114)
Number of children		-0.0450***	-0.0456***	-0.0431***	-0.0402***	-0.0393***
		(0.0025)	(0.0025)	(0.0025)	(0.0027)	(0.0026)
Observations	10,482	10,445	10,403	10,366	10,318	10,314
R-squared	0.2398	0.1738	0.1594	0.1333	0.1291	0.1286
F	251.8	166.1	147.4	113.1	103.6	102.9

Table C.3: *RDD results, with all controls & optimal bandwidth*

	First stage	**Second stage**				
		month 1	month 3	month 5	month 7	month 9
Distance to threshold	0.0008	0.0013**	-0.0002	-0.0004	-0.0002	0.0001
	(0.0018)	(0.0006)	(0.0007)	(0.0008)	(0.0008)	(0.0009)
Month of birth	0.4036***					
	(0.0109)					
Effect of paternity leave take-up		0.0340***	0.0070	0.0143	0.0051	0.0043
		(0.0097)	(0.0114)	(0.0128)	(0.0133)	(0.0135)
Region						
East	-0.0170	-0.0004	-0.0046	-0.0054	-0.0084	-0.0080
	(0.0209)	(0.0078)	(0.0086)	(0.0093)	(0.0100)	(0.0100)
West	-0.0139	0.0102	0.0046	-0.0001	-0.0048	0.0004
	(0.0196)	(0.0073)	(0.0080)	(0.0089)	(0.0095)	(0.0096)
South	0.0153	0.0008	-0.0038	-0.0035	-0.0154	-0.0133
	(0.0216)	(0.0077)	(0.0085)	(0.0095)	(0.0101)	(0.0101)
Age mother	0.0062***	0.0044***	0.0047***	0.0051***	0.0047***	0.0053***
	(0.0018)	(0.0006)	(0.0007)	(0.0009)	(0.0010)	(0.0009)
Age father	-0.0040***	-0.0015***	-0.0021***	-0.0020**	-0.0017**	-0.0024***
	(0.0013)	(0.0005)	(0.0006)	(0.0008)	(0.0008)	(0.0008)
Educational level mother						
Intermediate	0.0191	0.0150*	0.0292***	0.0281**	0.0390***	0.0456***
	(0.0231)	(0.0089)	(0.0104)	(0.0112)	(0.0127)	(0.0118)
High	0.0509**	0.0630***	0.0765***	0.0730***	0.0868***	0.0965***
	(0.0248)	(0.0095)	(0.0108)	(0.0118)	(0.0132)	(0.0125)
Unknown	0.0005	0.0225**	0.0281**	0.0294**	0.0320**	0.0435***
	(0.0279)	(0.0103)	(0.0122)	(0.0137)	(0.0153)	(0.0148)
Educational level father						
Intermediate	0.0594***	-0.0177**	-0.0231**	-0.0248**	-0.0233*	-0.0224*
	(0.0197)	(0.0088)	(0.0102)	(0.0116)	(0.0126)	(0.0124)
High	0.0383*	-0.0529***	-0.0575***	-0.0602***	-0.0621***	-0.0613***
	(0.0222)	(0.0094)	(0.0107)	(0.0121)	(0.0131)	(0.0130)
Unknown	0.0389	-0.0098	-0.0251**	-0.0357***	-0.0332**	-0.0236

	(0.0239)	(0.0100)	(0.0116)	(0.0137)	(0.0151)	(0.0148)
Number of children	-0.0216***	-0.0232***	-0.0251***	-0.0280***	-0.0267***	-0.0274***
	(0.0068)	(0.0026)	(0.0029)	(0.0031)	(0.0035)	(0.0034)
Labor market position mother						
Private sector, permanent contract, 100+ employees	0.0229	0.0277***	0.0243***	0.0320***	0.0398***	0.0409***
	(0.0202)	(0.0078)	(0.0091)	(0.0099)	(0.0104)	(0.0106)
Private sector, flexible contract, 100- employees	-0.0863	-0.1473***	-0.1669***	-0.1630***	-0.1867***	-0.1341***
	(0.0635)	(0.0394)	(0.0413)	(0.0420)	(0.0325)	(0.0406)
Private sector, flexible contract, 100+ employees	-0.0333	-0.1479***	-0.1575***	-0.1009***	-0.1077***	-0.0703**
	(0.0454)	(0.0358)	(0.0303)	(0.0324)	(0.0354)	(0.0354)
Public sector, permanent contract, 100- employees	0.0163	-0.0007	-0.0015	-0.0012	0.0028	0.0038
	(0.0312)	(0.0115)	(0.0117)	(0.0133)	(0.0125)	(0.0129)
Public sector, permanent contract, 100+ employees	0.0112	0.0446***	0.0480***	0.0468***	0.0602***	0.0560***
	(0.0178)	(0.0062)	(0.0073)	(0.0081)	(0.0083)	(0.0085)
Public sector, flexible contract, 100- employees	0.0196	-0.2194***	-0.2166***	-0.1420***	-0.1390***	-0.0937**
	(0.0986)	(0.0609)	(0.0563)	(0.0529)	(0.0520)	(0.0382)
Public sector, flexible contract, 100+ employees	-0.0904*	-0.0265	-0.0015	-0.0115	0.0090	0.0007
	(0.0534)	(0.0343)	(0.0403)	(0.0429)	(0.0413)	(0.0409)
Not working	-0.0038	-0.3911***	-0.3451***	-0.3100***	-0.2885***	-0.2788***
	(0.0190)	(0.0062)	(0.0081)	(0.0091)	(0.0096)	(0.0099)
Labor market position father						
Private sector, permanent contract, 100+ employees	0.0726***	-0.0082*	-0.0084	-0.0074	-0.0152**	-0.0101
	(0.0141)	(0.0046)	(0.0055)	(0.0061)	(0.0066)	(0.0066)
Private sector, flexible contract, 100- employees	-0.0836**	0.1208***	0.1347***	0.1608***	0.1368***	0.1571***
	(0.0342)	(0.0207)	(0.0320)	(0.0382)	(0.0401)	(0.0421)
Private sector, flexible contract, 100+ employees	-0.1478***	0.0650***	0.0610***	0.0406**	0.0530***	0.0620***
	(0.0207)	(0.0128)	(0.0152)	(0.0162)	(0.0173)	(0.0175)
Public sector, permanent contract, 100- employees	0.0228	0.0243*	0.0208	0.0223	0.0099	-0.0034
	(0.0465)	(0.0128)	(0.0136)	(0.0164)	(0.0168)	(0.0187)
Public sector, permanent contract, 100+ employees	0.0618***	0.0193***	0.0149**	0.0148**	0.0032	0.0079
	(0.0175)	(0.0058)	(0.0068)	(0.0075)	(0.0076)	(0.0078)
Public sector, flexible contract, 100- employees	-0.0386	0.0031	-0.0150	0.0227	-0.0179	-0.0325
	(0.1206)	(0.0118)	(0.0193)	(0.0565)	(0.0355)	(0.0250)
Public sector, flexible contract, 100+ employees	-0.0214	0.1113***	0.0975**	0.0835**	0.1190***	0.1355***
	(0.0720)	(0.0378)	(0.0381)	(0.0397)	(0.0447)	(0.0432)
Constant	-0.1470**	0.2997***	0.3102***	0.2863***	0.2833***	0.2678***
	(0.0574)	(0.0216)	(0.0246)	(0.0284)	(0.0295)	(0.0293)
Observations	3,782	3,769	3,755	3,744	3,720	3,716
R-squared	0.2802	0.7038	0.5881	0.4965	0.4662	0.4484
F	49.09	701.7	274.9	174.1	130.5	131.2

Table C.4: *IV-estimates, with all controls*

	First stage	Second stage				
		month 1	month 3	month 5	month 7	month 9
Month of birth	0.3801***					
	(0.0064)					
Effect of paternity leave take-up		0.0368***	0.0164**	0.0070	-0.0002	-0.0011
		(0.0063)	(0.0073)	(0.0082)	(0.0086)	(0.0087)
Region						
East	-0.0109	0.0008	-0.0067	-0.0018	-0.0052	-0.0048
	(0.0126)	(0.0045)	(0.0051)	(0.0057)	(0.0062)	(0.0063)
West	-0.0208*	0.0111***	-0.0010	0.0016	-0.0051	-0.0033
	(0.0117)	(0.0042)	(0.0048)	(0.0055)	(0.0058)	(0.0059)
South	0.0050	0.0054	-0.0043	0.0005	-0.0107*	-0.0084
	(0.0130)	(0.0045)	(0.0051)	(0.0057)	(0.0062)	(0.0062)
Age mother	0.0049***	0.0033***	0.0040***	0.0039***	0.0034***	0.0040***
	(0.0011)	(0.0004)	(0.0005)	(0.0005)	(0.0006)	(0.0006)
Age father	-0.0017**	-0.0012***	-0.0015***	-0.0010**	-0.0011**	-0.0015***
	(0.0008)	(0.0003)	(0.0004)	(0.0004)	(0.0005)	(0.0005)
Educational level mother						
Intermediate	0.0146	0.0230***	0.0259***	0.0251***	0.0336***	0.0379***
	(0.0133)	(0.0051)	(0.0060)	(0.0071)	(0.0075)	(0.0075)
High	0.0497***	0.0758***	0.0781***	0.0730***	0.0881***	0.0939***
	(0.0144)	(0.0055)	(0.0063)	(0.0074)	(0.0079)	(0.0079)
Unknown	-0.0021	0.0267***	0.0159**	0.0115	0.0158*	0.0202**
	(0.0164)	(0.0058)	(0.0070)	(0.0085)	(0.0091)	(0.0092)
Educational level father						
Intermediate	0.0389***	-0.0175***	-0.0225***	-0.0200***	-0.0241***	-0.0198***
	(0.0121)	(0.0049)	(0.0060)	(0.0066)	(0.0073)	(0.0072)
High	0.0387***	-0.0524***	-0.0570***	-0.0567***	-0.0610***	-0.0594***
	(0.0135)	(0.0053)	(0.0063)	(0.0069)	(0.0077)	(0.0076)
Unknown	0.0157	-0.0084	-0.0159**	-0.0217***	-0.0235***	-0.0183**
	(0.0144)	(0.0058)	(0.0070)	(0.0081)	(0.0090)	(0.0089)
Number of children	-0.0231***	-0.0207***	-0.0244***	-0.0243***	-0.0225***	-0.0219***
	(0.0041)	(0.0016)	(0.0018)	(0.0020)	(0.0022)	(0.0022)
Labor market position mother						
Private sector, permanent contract, 100+ employees	0.0251**	0.0304***	0.0280***	0.0311***	0.0336***	0.0303***
	(0.0123)	(0.0050)	(0.0055)	(0.0060)	(0.0063)	(0.0065)
Private sector, flexible contract, 100- employees	-0.0880**	-0.1458***	-0.1575***	-0.1275***	-0.1323***	-0.1171***
	(0.0358)	(0.0242)	(0.0262)	(0.0270)	(0.0273)	(0.0268)
Private sector, flexible contract, 100+ employees	-0.0098	-0.1770***	-0.1540***	-0.1201***	-0.1286***	-0.0927***
	(0.0271)	(0.0177)	(0.0176)	(0.0190)	(0.0195)	(0.0203)
Public sector, permanent contract, 100- employees	-0.0005	-0.0007	0.0013	0.0012	0.0029	-0.0100

	(0.0179)	(0.0068)	(0.0074)	(0.0082)	(0.0082)	(0.0078)
Public sector, permanent contract, 100+ employees	0.0131	0.0458***	0.0418***	0.0446***	0.0524***	0.0451***
	(0.0105)	(0.0040)	(0.0044)	(0.0049)	(0.0051)	(0.0052)
Public sector, flexible contract, 100- employees	-0.0041	-0.2004***	-0.1709***	-0.0953***	-0.1027**	-0.0712*
	(0.0689)	(0.0341)	(0.0293)	(0.0360)	(0.0411)	(0.0364)
Public sector, flexible contract, 100+ employees	-0.0028	-0.0352*	-0.0153	-0.0204	-0.0160	-0.0235
	(0.0351)	(0.0184)	(0.0206)	(0.0218)	(0.0200)	(0.0195)
Not working	-0.0023	-0.3894***	-0.3445***	-0.3060***	-0.2895***	-0.2821***
	(0.0114)	(0.0037)	(0.0048)	(0.0054)	(0.0059)	(0.0061)
Labor market position father						
Private sector, permanent contract, 100+ employees	0.0654***	-0.0065**	-0.0083**	-0.0084**	-0.0161***	-0.0153***
	(0.0083)	(0.0028)	(0.0033)	(0.0037)	(0.0040)	(0.0040)
Private sector, flexible contract, 100- employees	-0.1294***	0.0790***	0.0851***	0.0740***	0.0773***	0.0671***
	(0.0191)	(0.0139)	(0.0171)	(0.0204)	(0.0214)	(0.0211)
Private sector, flexible contract, 100+ employees	-0.1171***	0.0654***	0.0599***	0.0486***	0.0586***	0.0582***
	(0.0130)	(0.0070)	(0.0086)	(0.0097)	(0.0109)	(0.0108)
Public sector, permanent contract, 100- employees	-0.0024	0.0185*	0.0225*	0.0148	0.0126	0.0135
	(0.0258)	(0.0101)	(0.0120)	(0.0129)	(0.0131)	(0.0131)
Public sector, permanent contract, 100+ employees	0.0509***	0.0160***	0.0123***	0.0155***	0.0036	0.0078
	(0.0104)	(0.0036)	(0.0041)	(0.0047)	(0.0047)	(0.0049)
Public sector, flexible contract, 100- employees	-0.1384**	0.0629**	0.0940**	0.0491	0.0660**	0.0617*
	(0.0542)	(0.0290)	(0.0383)	(0.0348)	(0.0300)	(0.0346)
Public sector, flexible contract, 100+ employees	0.0051	0.1086***	0.1074***	0.0789***	0.0853***	0.1065***
	(0.0426)	(0.0280)	(0.0286)	(0.0302)	(0.0312)	(0.0325)
Constant	-0.1588***	0.3173***	0.3104***	0.2854***	0.3041***	0.2922***
	(0.0330)	(0.0123)	(0.0144)	(0.0168)	(0.0179)	(0.0175)
Observations	10,482	10,445	10,403	10,366	10,318	10,314
R-squared	0.2546	0.6961	0.5849	0.4767	0.4413	0.4230
F	128.7	2158	780.2	420.0	336.3	306.2

Appendix D: RD estimates, alternative outcome measures

Table D.1: *Fuzzy RD estimates, mother's income*

	First stage: take-up	**Second stage: mother's income**				
		month 1	month 3	month 5	month 7	month 9
Effect of paternity leave take-up		0.0303	-0.1038	-0.2151**	-0.0828	-0.0484
		(0.0491)	(0.0772)	(0.0949)	(0.0990)	(0.1018)
Month of birth	0.3779***					
	(0.0065)					
Distance to threshold	-0.0008**	-0.0005	-0.0009	0.0003	0.0111	0.0035
	(0.0004)	(0.0011)	(0.0016)	(0.0020)	(0.0021)	(0.022)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,482	10,482	10,482	10,482	10,482	10,482
R-squared	0.2385	0.9177	0.7902	0.6791	0.6452	0.6138
F	195.1	18028	1676	950.0	814.7	685.4

Notes. Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Controls in first and second stage models: region, age mother/father, education level mother/father, number of children, labor market position (public/private sector, permanent/flexible contract, company size) mother/father.

Table D.2: *Fuzzy RD estimates, father's income*

	First stage: take-up	**Second stage: father's income**				
		month 1	month 3	month 5	month 7	month 9
Effect of paternity leave take-up		-0.2385***	-0.1275**	-0.2019***	-0.0638	-0.0549
		(0.0438)	(0.0565)	(0.0679)	(0.0779)	(0.0776)
Month of birth	0.3803***					
	(0.0065)					
Distance to threshold	-0.0008**	-0.0010	-0.0001	-0.0007	-0.0006	0.0008
	(0.0004)	(0.0010)	(0.0013)	(0.0015)	(0.0017)	(0.0017)
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	10,482	10,482	10,482	10,482	10,482	10,482
R-squared	0.2492	0.0911	0.0859	0.0962	0.0918	0.0812
F	209.5	31.33	25.89	34.73	35.34	31.45

Notes. Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1
Controls in first and second stage models: region, age mother/father, education level mother/father, number of children, labor market position (public/private sector, permanent/flexible contract, company size) mother/father.

Appendix E: Event study estimations

Table E.1: *Event study estimations, with no controls, basic controls and all controls*

	(1)	(2)	(3)
Months since birth	No controls	Basic controls	Extended controls
-11	-0.0003	0.0000	0.0002
	(0.0014)	(0.0013)	(0.0013)
	0.8308	0.9943	0.8807
-10	0.0004	0.0004	0.0006
	(0.0015)	(0.0015)	(0.0015)
	0.7801	0.7797	0.6663
-9	0.0029**	0.0028*	0.0030**
	(0.0014)	(0.0014)	(0.0014)
	0.0430	0.0518	0.0320
-8	-0.0004	-0.0004	0.0003
	(0.0014)	(0.0013)	(0.0014)
	0.7475	0.7777	0.8236
-7	0.0012	0.0013	0.0020
	(0.0013)	(0.0013)	(0.0014)
	0.3539	0.3413	0.1372
-6	0.0014	0.0018	0.0028*
	(0.0015)	(0.0015)	(0.0015)
	0.3240	0.2193	0.0608
-5	-0.0025*	-0.0025*	-0.0011
	(0.0015)	(0.0015)	(0.0015)
	0.0907	0.0826	0.4946
-4	-0.0033***	-0.0035***	-0.0028**
	(0.0012)	(0.0012)	(0.0012)
	0.0047	0.0037	0.0216
-3	0.0050***	0.0050***	0.0057***
	(0.0012)	(0.0012)	(0.0012)
	0.0000	0.0000	0.0000
-2	-0.0013	-0.0014	-0.0004
	(0.0011)	(0.0011)	(0.0012)
	0.2066	0.1780	0.7451
-1	0.0000	0.0000	0.0017
	(0.0012)	(0.0012)	(0.0012)
	0.9905	0.9697	0.1510
0	0.0023*	0.0023*	0.0024**
	(0.0012)	(0.0012)	(0.0011)
	0.0524	0.0503	0.0258
1	0.0130***	0.0129***	0.0128***
	(0.0017)	(0.0017)	(0.0016)
	0.0000	0.0000	0.0000
2	0.0075***	0.0071***	0.0069***
	(0.0018)	(0.0018)	(0.0018)
	0.0000	0.0001	0.0001

3	0.0051**	0.0047**	0.0048**
	(0.0021)	(0.0022)	(0.0021)
	0.0173	0.0296	0.0222
4	0.0025	0.0020	0.0022
	(0.0024)	(0.0024)	(0.0023)
	0.2809	0.4034	0.3395
5	0.0014	0.0009	0.0012
	(0.0026)	(0.0026)	(0.0026)
	0.5784	0.7203	0.6287
6	0.0021	0.0015	0.0023
	(0.0028)	(0.0028)	(0.0027)
	0.4378	0.5745	0.3984
7	-0.0011	-0.0014	-0.0010
	(0.0028)	(0.0028)	(0.0028)
	0.6898	0.6229	0.7114
8	-0.0037	-0.0039	-0.0032
	(0.0028)	(0.0028)	(0.0027)
	0.1846	0.1688	0.2386
9	-0.0023	-0.0025	-0.0017
	(0.0029)	(0.0029)	(0.0028)
	0.4329	0.3903	0.5420
10	-0.0020	-0.0024	-0.0015
	(0.0029)	(0.0029)	(0.0028)
	0.4938	0.4207	0.5914
11	-0.0041	-0.0043	-0.0036
	(0.0030)	(0.0030)	(0.0030)
	0.1798	0.1588	0.2254
12	-0.0039	-0.0042	-0.0036
	(0.0031)	(0.0031)	(0.0030)
	0.2050	0.1706	0.2294
Observations	10,483	10,482	10,482

Notes. Model 1 estimates the event study model without adding any control variables. Model 2 estimates the event study model with controls for age mother/father, region, educational level mother/father and number of children. Model 3 estimates the event study model with controls for age mother/father, region, educational level mother/father, number of children and the labor market position (public/private sector, permanent/flexible contract, company size) mother/father.

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