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The Introduction of a Short-Term Earnings-Related Parental Leave Benefit System and Differential Employment Effects

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Abstract

German family policy underwent a reform in 2007, when the new instrument of "Elterngeld" replaced the previous "Erziehungsgeld". The transfer programs differ in various dimensions. We study the effects on the labor supply of young mothers, by comparing behavior before and after the reform. We separately consider women of high and low incomes, which were treated differently under the old "Erziehungsgeld"-regime, and differentiate the periods before and after the expiration of transfer receipt. Our results mainly confirm expectations based on a labor supply framework.

Key Words: female labor supply, fertility, child subsidy, parents money
JEL Code: J13, J21

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1. Introduction

Family policy matters in demographically aging societies and in societies with low fertility. Family policy affects female labor force participation and fertility outcomes. Germany reformed its parental leave benefits on January 1, 2007. This contribution gauges the labor force participation effect of this reform.

The objective of the reform was to increase fertility and to speed up the labor market return of young mothers after childbirth. At its core the reform (a) shortened benefit eligibility for mothers without prior employment, and (b) introduced benefits for non-poor parents to provide earnings replacement. A means-tested program was replaced by an earnings-related benefit system.

Since January 1, 2007 parents of newborn children in Germany receive "parents' money" (*Elterngeld*). It amounts to two thirds of the pre-birth net income of the parent who interrupts employment after the birth. A minimum benefit of 300 Euro per month is provided also for those not previously in the labor force. The maximum "parents' money" transfer amounts to 1800 Euro per month. The benefit is paid at most for 12 months for one of the parents. The other parent can flexibly receive the benefit for an additional two months of employment interruption. This *Elterngeld* system is more generous than the prior means-tested transfer program (*Erziehungsgeld*), which paid a maximum of 300 Euro for up to 24 months. However, the new program pays for a shorter period of time. Under both, the old and the new regime, benefit recipients may be employed part-time (up to 30 hours) during benefit receipt. In the old system labor-income was considered in the means test and thus reduced the likelihood of receiving the benefit.[1] In the new regime the means-test was abolished and even part-time employed parents receive the minimum amount of

[1] Only income earned in "mini-jobs" was exempted from consideration in the means test.

300 Euro per month, and may receive more than that, i.e. up to two thirds of the decline in earnings due to reduced hours worked. The reform modified the parental leave benefit and its entitlement period. The core beneficiaries of the transfer are no longer low income households. Instead the program focuses now on parents in higher income households, who interrupt employment after a birth. The parental leave period, which involves job protection for three years, remained unchanged.

We study the labor supply effects for different groups of mothers who may be affected by the reform in different ways. This consideration of the potential heterogeneity of responses establishes our contribution to the literature. While prior contributions studied average employment responses (e.g. Bergemann und Riphahn 2010, Spiess and Wrohlich 2006 and 2008, Kluve and Tamm 2009) we differentiate between different groups of mothers in our theoretical predictions and test the hypotheses using data from the German Socioeconomic Panel.[2]

The labor supply response to the benefit reform should differ depending on whether the first or second year of a child's life is considered and depending on the income situation of the mother. In the first year after a birth mothers from higher income households receive a transfer of up to 67 percent of their prior net income compared to no transfer before the reform. This should generate an income effect and reduce these females' labor force participation. Mothers from lower income households used to receive transfers of up to 300 Euro per month. Lower amounts were paid if income exceeded certain thresholds. This benefit did not change under the reformed system in the first year after a birth.[3] The labor supply of these mothers

[2] On a related subject, Tamm (2010) studied employment effects of the 1996/1997 increase in the child benefit payments (*Kindergeld*). He finds that mothers reduced the number of hours worked but not their labor force participation rates.

[3] *Erziehungsgeld* was paid for the first six months of a child's life, if household income remained below 30.000 Euro per year for couples, or 23.000 Euro per year

might be affected by a change in the treatment of part-time work after birth. Under the old system any labor-income was considered in the means test and reduced the likelihood of receiving the benefit. In contrast, after the reform even part-time employed parents could receive the minimum amount of 300 Euro per month, and may receive more than that.[4] Therefore the mothers from lower income households now have an incentive to seek employment even in the first year after a birth. In addition, their labor supply during the first year may be affected by the new expectation of the loss of transfer in the subsequent year.

In year two after a birth, the employment rate of mothers from lower income households should increase. Compared to the situation before the reform they lose their transfer completely, because any parent can receive the benefit for only up to 12 months, compared to 24 months before. The transfer also expires for women from higher income households. Compared to the situation before the reform their return to work may be slower because of the higher transfers in the year before (wealth effect) or because they got used to spending time at home. If they return to work at the point when benefits expire, their overall employment rates should still not exceed those observed prior to the reform.[5] Overall, we expect a somewhat lower employment rate in year two after a birth compared to the old transfer regime. Among lower income females we expect a substantial increase in employment during the second year after a birth.

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for single parents. The transfer was paid for another 18 months if couples remained below 16.500 and single parents below 13.500 Euro income per year. The threshold increased in both cases by 3.140 Euro for every additional child in the household.

[4] They can receive up to two thirds of the decline in earnings due to reduced hours worked.

[5] One might argue that they return at a higher rate compared to the old regime, if all of their partners now take parental leave in months 13 and 14. However, this is quite unlikely.

Prior contributions to the literature generally confirm the responsiveness of female labor supply to extensions of family leave policies. Baker and Milligan (2008) show that an extension of the maternal leave period in Canada lengthened the time women spend at home. Ondrich et al. (1996, 2003) conclude that mothers' probability to return to the labor force declines when parental leave periods are extended. Han et al. (2007) find clear behavior changes following institutional reforms in the United States. Spiess and Wrohlich (2008) provide an *ex ante* analysis of the reform's expected labor supply effect. They predict an increase in female participation rates and in the number of hours worked one year after a birth. Only Bergemann and Riphahn (2010) and Kluve and Tamm (2009) provide ex-post evaluations of the reform and of the causal effect of a cut in transfer durations. Both studies estimate average effects and find a positive employment response after the first year after birth. Note that Bergemann and Riphahn (2010) use the national representative GSOEP data, while Kluve and Tamm (2009) collected their data from members of two health insurances. Typically, members of these health insurances are older and have less income than the average German.

2. Data and Method

We use data from the German Socio-Economic Panel, a representative panel survey of households and their members. The GSOEP annually re-interviews households and their split-offs, usually in February and March. In 2006, the GSOEP sample consisted of 23.000 adult respondents living in 12.000 households.

We consider all women who indicated a new birth in the surveys 2005-2008 i.e. between January 1, 2005 and the end of 2007.[6] We observe 579 births and drop the first observed birth of 28 women who had two children in the considered period, thus focusing on a mothers' last observed birth. Overall, we observe 375 births under the old and 176 births under the new regime.

We identify the reform effect based on a comparison of the behavior of mothers who had their children shortly before and shortly after the reform. This yields reliable estimates to the extent that parents did not anticipate the change in family policy, i.e. that fertility in the treatment and control group was not affected by the reform and that the exact timing of the birth (e.g. December vs. January) does not affect parental behavior per se. The reform law passed parliament in September of 2006, the reform became effective January 1, 2007. Therefore particularly for the first births in 2007 the reform was exogenous as parents could not anticipate future events at conception.

We analyze maternal behavioral responses separately for women who likely would have received *Erziehungsgeld* prior to the reform or not (approximated by their partner's income). Also, we distinguish between mothers who prior to the birth earned above or below 1000 Euro per month in order to identify heterogeneity in work incentives between high and low income females.

Our dependent variables indicate women's intention to return to work and the planned time until returning to work. Due to the small number of observations combined with the nonlinear nature of the response categories, we code a *likely return* to the labor force if a woman indicates this to be the case (alternative answers: certainly no, rather not, probably yes, certainly, already employed). In addition, we

[6] The GSOEP data is supplied by the Deutschen Institut für Wirtschaftsforschung (DIW Berlin). For more information see Wagner et al. (2007).

code a *fast return* to work, if she answers that she plans to return within one year after the interview or faster (alternative answers: never, not within 5 years, within 2-5 years, immediately or within one year, already working). 89 percent of the new mothers indicate that it is likely that they return to work and 53 percent indicate that they will return within one year.

We first describe the differences in return intentions across the heterogeneous treatment and control groups and then present estimation results from a multivariate probit regression. In addition to the reform effect, we control for various covariates, such as the age of the child at the time of the interview, whether a mother is a single parent, whether it is a first child, and whether the woman lives in East Germany, where child care facilities are substantially better than in the West.

Table 1 presents descriptive statistics of our variables for the subsamples of women who gave birth before and after Jan. 1, 2007. There are no significant differences with respect to the potential covariates. However, with respect to the outcome variables, we find a significant difference in the speed of return. Women, who gave birth after Jan. 1, 2007, intend to return faster to the labor market than women who gave birth before that date.

3. Results

Table 2 describes mothers' estimates of the probability of their return to the labor force and the speed with which they intend to return. The means do not account for potential differences in the age of the child or other covariates between the two subgroups. The patterns are clear: in Panels A and C we observe mothers with rather low household incomes or own pre-birth earnings. For them, both the

propensity and the speed of a return to the labor force are higher in the new than in the old regime. This matches our expectations for this group.

For women with either relatively high household or own pre-birth incomes the patterns are less clear. The return probability seems to decline, whereas the speed of return increases. For this group, which presumably receives the parents' transfer for the first time, it looks as if those women who wanted to return to the labor market anyway intend to return quicker after the reform.[7] The observed differences are statistically significant only for the lower income groups. Additionally, it is interesting to compare the figures across groups in given regimes: in both regimes females with higher prepartum own earnings tend to return to the labor force faster than those with incomes below 1000 Euro per month. Under the new *Elterngeld*-regime it is the group of mothers from lower income households (compare panels A and B) which intend to return to work faster.

Next, we apply multivariate regression analysis in order to account for potential composition effects between the two subsamples of mothers giving birth before or after the introduction of *Elterngeld*. **Table 3** presents Probit estimation results of the effect of the benefit reform ("birth in 2007") on the two indicators of female labor supply after child birth, i.e. whether the mother plans to return to work ("likely return") and the expected time until the return ("fast return"). If the 2007 reform increased the probability and speed of return we would expect a positive average marginal effect of the "birth in 2007" variable in all regressions. The table presents the results of two model specifications, where the first controls only for the age of the child and its square, and the second additionally considers indicators for whether the child is the first child, the age of the mother, whether the mother is a

[7] Depending on the stratification variable applied (i.e. household income or own income) the sample splits vary across the panels.

single parent, i.e. there is no partner living in the same household, whether the family lives in East Germany, or is of foreign origin.

The estimation results confirm the evidence from **Table 2**. For mothers from low income households (see rows 1 and 3 in **Table 3**) the reform effects on the propensity to return to the labor force are positive, though not precisely estimated. For females with higher incomes the effects are similarly insignificant but negative (see rows 2 and 4 in **Table 3**), which suggests that the reform did not succeed in strengthening the labor market attachment for this group.

The estimates of the reform's marginal effects on a fast return confirm this only in part. Here we obtain statistically significant outcomes, which suggest that particularly mothers with low income partners experience a substantial increase in their self-assessed propensity to return fast to the labor force. Compared to an average of about 45 percent the marginal effect of 13 and 12 percentage points is considerable. For the better off mothers the speed of return also increased after the reform but not in a statistically significant manner. This could indicate that although the reform did not increase the average labor force attachment of this group, it may have speeded up the return for those mothers, who prior to the reform would have returned at a later point in time. Overall, the estimation results are robust to controls for covariates as the results hardly differ between the two specifications.

4. Conclusion

We evaluate the causal effect of a reform that increased parental leave benefits and shortened their payment period. The reform of family transfers should yield heterogeneous effects, because both, the old and the new regime apply income thresholds, which generate a variety of effects and incentives. We expect increasing

labor force attachment among those who receive less under the new than under the old regime and we expect that the new provision of parent benefits reduces labor force attachment at least in the short run.

The hypotheses are tested applying data from German Socio-Economic Panel. We find indeed evidence for increased labor force attachment of those likely to lose out by the reform. However, the results for those likely to win are less clear. While on average their propensity to return to the labor force declined, those who intended to return may have speeded up their return. This would be contrary to theoretical predictions. The results are robust to different empirical specifications and to the exact definition of the outcome measure.

Table 1 Descriptive Statistics

	Old regime (N = 375 births)			New regime (N = 176 births)	
	Mean	Std.Dev.		Mean	Std.Dev.
Dependent Variable:					
Likely return (0/1)	0.896	0.016		0.892	0.023
Fast return (0/1)	0.453	0.025	◦	0.528	0.038
Independent Variables:					
Age of child at interview in months	5.62	0.197		5.51	0.263
Single Mother (0/1)	0.085	0.144		0.131	.026
Birth is first birth (0/1)	0.475	0.026		0.472	0.038
Maternal age at interview	30.73	0.302		30.87	0.401
East German (0/1)	0.243	0.022		0.278	0.034
Foreign origin (0/1)	0.093	0.015		0.114	0.024

Note: **, * and ◦ indicate statistically significant difference of the subgroup means at the 1, 5 and 10 percent levels.

Table 2 Descriptive Statistics on the Dependent Variable by Subsample

	Old Regime			New Regime	
	Mean	Std. Error		Mean	Std. Error
A. Partner Income < 16.500 (162 / 78)					
Likely return	.889	.025		.936	.028
Fast return	.475	.039	*	.615	.055
B. Partner Income ≥ 16.500 (213 / 98)					
Likely return	.901	.020		.857	.036
Fast return	.437	.034		.459	.051
C. Prepartum Income < 1.000 (243 / 122)					
Likely return	.856	.023		.877	.030
Fast return	.366	.031	◦	.467	.045
D. Prepartum Income ≥ 1.000 (132 / 54)					
Likely return	.970	.015		.926	.036
Fast return	.614	.043		.667	.065

Note: The figures in parentheses indicate the number observations in the old vs. new regime. **, * and ◦ indicate statistically significant difference of the subgroup means at the 1, 5 and 10 percent levels.

Table 3 Probit Estimates - Dependent Variables: Likely Return and Fast Return
Marginal Effects of the "Birth after the Reform"-Indicator

	Specification 1			Specification 2		
	AME		Std. Err.	AME		Std. Err.
Dependent Variable: Likely Return						
1 Partner Income < 16.500	.043		.033	.038		.032
2 Partner Income ≥ 16.500	-.050		.043	-.045		.039
3 Prepartum Income < 1.000	.013		.036	.018		.035
4 Prepartum Income ≥ 1.000	-.035		.039	-.065		.053
Dependent Variable: Fast Return						
5 Partner Income < 16.500	.136	*	.067	.124	°	.065
6 Partner Income ≥ 16.500	.058		.054	.032		.059
7 Prepartum Income < 1.000	.099	°	.055	.098	°	.054
8 Prepartum Income ≥ 1.000	.058		.076	.051		.078

Note: A.M.E. stands for average marginal effect. Each AME is estimated in a separate regression. The samples differ by row. Two different dependent variables and two different specifications are used. Specification 1 only controls for the age of the child using a second order polynomial term. Specification 2 additionally controls for whether the child is the first child, the age of the mother, whether she is a single mother, whether the mother resides in East Germany and whether she is of foreign origin. All models consider an intercept term. **, * and ° indicate statistical significance at the 1, 5, and 10 percent level. The number of observations varies between the four subsamples and amounts to 240 for rows 1 & 5, 311 & 310 for rows 2 & 6, 365 for rows 3 & 7, and 186 & 185 for rows 4 & 8.

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