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

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Abstract

German family policy underwent a reform in 2007, when the new instrument of "Elterngeld" replaced "Erziehungsgeld." The two programs differ in various respects. We studied the intended effects on the labor supply of young mothers by comparing these women's employment intentions before and after the reform. We conducted separate investigations of high- and low-income women, who were treated differently under the old "Erziehungsgeld" regime, and we distinguished between the period of benefit receipt and the period after the benefits ran out. Our results mainly confirm expectations based on a labor supply model.

JEL Classifications: J13, J21

1. Introduction

In societies with aging populations and low fertility, family policy is important: it can play a role in female labor force participation and fertility outcomes. Germany reformed its parental leave benefits on January 1, 2007. This article assesses how the reform has affected female labor force participation.

The objective of the reform was to increase fertility and to accelerate 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 to provide earnings replacement for non-poor parents. A means-tested program was replaced by an earnings-related benefit system.

Since January 1, 2007, parents of newborn children in Germany have been entitled to receive "parents' money" (*Elterngeld*). This benefit amounts to two-thirds of net income for the parent who took parental leave after the child's

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birth (based on that individual's earnings 12 months before birth). A minimum benefit of 300 euros per month is also provided to those not employed previously. The maximum *Elterngeld* transfer is 1,800 euros per month. The benefit is paid to one parent for a maximum of 12 months. The other parent can receive the benefit for an additional two months of employment interruption. The *Elterngeld* system is more generous than the prior means-tested transfer program, *Erziehungsgeld*, which paid a maximum of 300 euros for up to 24 months. *Elterngeld* is provided 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 the benefit period. In the old system, the consideration of labor income in the means test reduced the likelihood of receiving the benefit.[1] Under the new regime, the means test has been abolished. Even parents who work part-time receive the minimum of 300 euros per month and may receive up to two-thirds of their earnings loss due to the reduction in working hours. The reform modified the parental leave benefit and its entitlement period. The transfer no longer targets low-income households but parents in higher-income households who interrupt employment after childbirth. The three-year parental leave period with guaranteed job protection remains unchanged.

The pre-reform means-tested transfer program (*Erziehungsgeld*) provided parents the option of choosing the "budgetary option" of receiving 450 euros (after Jan. 1, 2004; 460 euros before) per month for 12 months rather than 300 euros (after Jan. 1, 2004; 307 euros before) per month for 24 months. The new benefit (*Elterngeld*) can be extended to 14 months for single parents. In addition, it is possible to double the duration of the benefit if the amount is halved. Only a small share of the population uses this option.

We studied the effects of the reform on employment intentions in different groups of mothers who may be affected by it in different ways. Whereas most of the previous research examined average employment responses (e.g., Bergemann / Riphahn, 2011; Spiess / Wrohlich, 2006 and 2008), we differentiated between different groups of mothers in our theoretical predictions and tested the hypotheses using data from the German Socio-Economic Panel.[2] Kluve / Tamm (2009) took a similar approach using data from a survey of members of two health insurance funds to evaluate the development of household incomes, the probability of transfer receipt, and labor force participation. They concluded that the introduction of parents' money reduced the probability of women's returns to the labor force in the first year after childbirth and increased it thereafter.

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

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

We expected the labor supply response to the benefit reform to differ depending both on whether the first or second year of a child's life was considered and 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, we expected, generate an income effect and reduce these women's labor force participation. Mothers from lower-income households used to receive transfers of no more than 300 euros per month, and less if income exceeded certain thresholds. This benefit did not change under the reformed system in the first year after childbirth.[3] The intended labor supply of these mothers might therefore be affected by a change in the treatment of part-time work after birth. Under the old system, all labor income was considered in the means test, which reduced the likelihood of receiving the benefit. The reform made it possible for even parents employed part-time to receive the minimum amount of 300 euros per month and in some cases more than that.[4] Therefore, mothers from lower-income households now have an incentive to seek employment even in the first year after a birth. In addition, their intention to work during the first year may now be affected by the loss of transfers in the subsequent year.

In year two after a birth, there should be an increase in intentions to work among mothers from lower-income households. In contrast to the situation before the reform, they now lose their benefit completely after one year, because either parent can receive the benefit for a maximum of 12 months as compared to 24 months before. Of course, the benefit also runs out after a year for women from higher-income households. One might therefore expect that they are returning to work more slowly since the reform because of the higher transfers received in the first year after childbirth (wealth effect), or simply because they become accustomed to spending time at home. If they return to work when the benefits expire, their overall employment rates should still not exceed those observed prior to the reform.[5] Overall, we expected a somewhat lower rate of intended employment in year two after a birth under the new regime than under the old one. Among lower-income women, we expected a substantial increase in intended employment during the second year after childbirth.

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[3] Erziehungsgeld was paid for the first six months of a child's life if household income was below 30,000 euros per year for couples, or 23,000 euros per year for single parents. The transfer was paid for another 18 months to couples whose income was below 16,500 euros and to single parents whose income was below 13,500 euros per year. The threshold increased in both cases by 3.140 euros 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 now return to work at a higher rate than under the old regime if all of their partners are taking parental leave in months 13 and 14. However, this is quite unlikely.

Prior contributions to the literature generally confirmed the responsiveness of the female labor supply to extensions of family leave policies. Baker and Milligan (2008) showed that an extension of the maternal leave period in Canada lengthened the time women spend at home. Lalive/Zweimüller (2009) studied the effect of changes in the duration of parental leave in Austria in the 1990s. They found a positive effect on the probability of having a second child and a decline in the propensity to return to work after the leave period was extended. Ekberg et al. (2005) studied the introduction of a "daddy month" in Swedish parental leave and found clear short-run effects on the use of this paternal leave. In a comparative study using data from the European community household panel and institutional rules from a variety of countries, Pronzato (2009) concluded that institutional characteristics are important determinants of the return to work for mothers, with longer job protection periods supporting their return to work after childbirth. Ondrich et al. (1996, 2003) found that mothers' probability to return to the labor force declined when parental leave periods were extended. Han et al. (2007) found clear behavior changes following institutional reforms in the United States. Spiess/Wrohlich (2008) conducted an *ex ante* analysis of the reform's expected labor supply effect. They predicted an increase in female participation rates and in the number of hours worked one year after a birth. To date only Bergemann/Riphahn (2011) and Kluve/Tamm (2009) have provided ex-post evaluations of the reform and of the causal effects of a reduction in benefit duration. Both studies estimated average effects and found a positive employment response in the second year after birth, although Bergemann/Riphahn (2011) studied employment intentions rather than employment outcomes. Note that Bergemann/Riphahn (2010) used the national representative SOEP data, whereas Kluve/Tamm (2009) collected their data from members of two health insurance funds. Typically, members of these health insurance funds are older and have lower income than the average German.

2. Data and Method

We used data from the German Socio-Economic Panel (SOEP), a representative panel survey of households and their members. The SOEP annually interviews the same households and their split-offs, mainly in February and March of each year. In 2006, the SOEP sample consisted of 23,000 adult respondents living in 12,000 households.

We considered all women who had reported having a new baby in one of the 2005–2008 surveys, that is, women who had given birth between January 1, 2005, and the end of 2007.[6] We observed 579 births in total, and for 28 women

[6] The SOEP data are provided by DIW Berlin. For more information, see Wagner et al. (2007).

who had given birth to two children in the period under consideration, we dropped the first observed birth, thus focusing solely on last observed births. Overall, we observed 375 births under the old regime and 176 births under the new regime.

We treated the parental leave benefit reform as a natural experiment and identified its effects based on a comparison of the responses of mothers who had their children shortly before and shortly after the reform. A similar identification strategy was used by Kluve / Tamm (2009), Lalive / Zweimüller (2010), and Ekberg et al. (2005). It yields reliable estimates insofar as parents did not anticipate the change in family policy; thus, fertility in the treatment and control group was not affected by the reform, and the exact timing of the birth (e.g., December vs. January) did not affect parental behavior per se. In addition, we assumed that there was no pre-existing time trend in the employment plans of recent mothers that would bias our results. The reform law passed parliament in September 2006 and went into effect on January 1, 2007. Therefore, particularly for the first births of 2007, the reform was exogenous, as parents could not anticipate future events at conception. However, Tamm (2009) used data from birth registers to show that about 8 percent of births had been shifted from the last week of December 2006 to January 2007, but found no evidence of an increase in premature births to avoid the post-reform regime. Thus, there is some evidence of self-selection of parents into the post-regime scenario at its introduction. This delay of childbirth was realistically possible for only a small share of the pregnancies in our data, as only deliveries expected close to the end of one year can be postponed until the next. Any such self-selection or anticipation would generate a downward bias in our results. We compared maternal intentions to return to work and hypothesized that these plans would increase particularly among those (low-income) mothers who did not have an incentive to postpone childbirth. Since these women are – if anything – underrepresented among those with a birth in 2007, we expected to obtain a downward-biased effect of the reform.

We analyzed maternal responses, separating women who would likely have received *Erziehungsgeld* prior to the reform from those who would not (based on their partner's income). We also distinguished between mothers who earned above 1000 euros per month before birth from those who received below that amount in order to identify heterogeneity in work incentives between high- and low-income females. Women without earnings prior to birth were included in the group "below 1000 euros".

Our dependent variables indicate women's intentions to return to work and the planned time until returning to work. One possible advantage of using planned labor force participation is that this outcome is probably unaffected by labor market constraints or a low supply of child care. Due to the small number of observations, combined with the nonlinear nature of the response categories, we coded a *likely return* to the labor force if a woman chose *probably, yes*

definitely, or *already employed* from the following answer options: *yes definitely, probably, probably not, no definitely not, already employed.* In addition, we coded a *fast return* to work if a woman answered that she planned to return within one year after the interview or sooner (answer options: *no definitely not, in the distant future in more than five years, in the next two to five years, next year, as soon as possible, already working*).[7] Eighty-nine percent of the new mothers indicated that it was likely that they would return to work, and 53 percent indicated that they would return within one year.

Below, 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 controlled for various covariates, such as the age of the child at the time of the interview, whether the mother was a single parent, whether this was her first child, and whether she lived in East Germany (where childcare 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. We found no significant differences with respect to the potential covariates. However, with respect to

Table 1

Descriptive Statistics

	Old regime (N = 375 births)			New regime (N = 176 births)	
	Mean	Std. Error		Mean	Std. Error
Dependent Variable:					
Likely return (0/1)	0.896	0.016		0.892	0.023
Intended fast return (0/1)	0.453	0.025	^{o}	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	0.014		0.131	0.026
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 ^{o} indicate statistically significant differences in the subgroup means at the 1, 5, and 10 percent levels, allowing for unequal variance. Note that we have one missing when distinguishing single and non-single mothers in the new regime.

[7] Women who had already returned to work at the time of the interview were coded as "likely" and "fast" returners.

the outcome variables, we found a significant difference in the speed of return. Women who gave birth after Jan. 1, 2007, intended to return to the labor market faster than women who gave birth before that date.

3. Results

Table 2 presents mothers' estimated probabilities of returning to the labor force and the speed with which they intended 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: the mothers in Panels A and C had rather low household incomes or their own pre-birth earnings. For them, both the propensity and the intended speed of return to the labor force were higher under the new than under the old regime. This matched our expectations for this group. However, only the difference with respect to the intended speed of return was significantly different from zero.

Table 2

Descriptive Statistics on the Dependent Variable by Subsample

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

Note: The figures in parentheses indicate the number of observations in the old vs. new regime. **, * and º indicate statistically significant differences in the subgroup means at the 1, 5, and 10 percent levels. Yearly partner income was measured on the basis of the monthly net wage in the month before the interview multiplied by 13. Monthly pre-partum income was measured as the monthly net wage taken from the interview that preceded the birth.

For women with relatively high partner or personal pre-birth income, the patterns are less clear. The return probability seems to decline, whereas the speed of the intended return increases. For this group, which presumably received the

parental benefit for the first time under the new regime, it appears that those women who wanted to return to the labor market anyway intended to return more quickly after the reform.[8] The observed differences are statistically significant only for the lower income groups. Additionally, it is interesting to compare the figures across groups in the two regimes: in both, females with higher pre-partum personal earnings tended to return to the labor force faster than those with incomes below 1,000 euros per month. Under the new *Elterngeld* regime, it was the group of mothers from lower-income households (comparing panels A and B) who intended to return to work more quickly.

Next, we applied multivariate regression analysis in order to account for potential composition effects between the two subsamples of mothers giving birth before and 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 planned to return to work ("likely return") and the expected time until the intended return ("fast return"). If the 2007 reform increased the probability and speed of intended return, we would expect a positive average marginal effect of the "birth in 2007" variable in all regressions. The table presents the results of three model specifications. The first specification controlled only for the age of the child and its square, and the second also considered indicators for whether the child was the firstborn, the age of the mother, whether the mother was a single parent (i.e., with no partner living in the household), whether the family lived in East Germany, and whether they were of foreign origin. The third specification also controlled for the gender and health status of the baby and the education of the mother.[9]

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's effects on the propensity to return to the labor force were positive, although not precisely estimated. For females with higher incomes, the effects were 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 an intended fast return to the labor market confirmed this only in part. Here we obtained statistically sig-

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

[9] We conducted a number of sensitivity analyses with respect to the age of the child. This is especially important for the outcome variable "speed of intended return," as this outcome was measured at the time of the interview. Naturally, the age of the children varied here. It turns out that the results are not sensitive to whether higher-order terms for the age of the child were included or whether a large number of age dummies were used instead. In further sensitivity analyses, we also excluded unhealthy babies and babies born close to the cut-off date, i.e., in December 2006 and January 2007. The results are robust to these exclusions.

Table 3

Probit Estimates – Dependent Variables: Likely Return and Intended Fast Return Marginal Effects of the "Birth after the Reform" Indicator

	Specification 1			Specification 2			Specification 3		
	AME		Std. Err.	AME		Std. Err.	AME		Std. Err.
Dependent Variable: Likely Return									
1 Yearly partner income < 16.500	.043		.033	.038		.032	.020		.040
2 Yearly partner income ≥ 16.500	-.050		.043	-.045		.039	-.050		.041
3 Monthly pre-partum income < 1.000	.013		.036	.018		.035	.003		.039
4 Monthly pre-partum income ≥ 1.000	-.035		.039	-.065		.053			
Dependent Variable: Intended Fast Return									
5 Yearly partner income < 16.500	.136	*	.067	.124	o	.065	.248		.200
6 Yearly partner income ≥ 16.500	.022		.060	.032		.059	-.002		.063
7 Monthly pre-partum income < 1,000	.099	o	.055	.098	o	.054	.056		.059
8 Monthly pre-partum income ≥ 1,000	.058		.076	.051		.078	.048		.078

Note: AME stands for average marginal effect. Each AME was estimated in a separate regression. The samples differ by row. Two different dependent variables and two different specifications were used. Specification 1 only controlled for the age of the child using a second-order polynomial term. Specification 2 additionally controlled for whether the child was the firstborn, the age of the mother, whether she was single, whether she lived in East Germany, and whether she was of foreign origin. Specification 3 also controlled for the education of the mother, the gender of the child, and whether the child was healthy. Yearly partner income was measured on the basis of the monthly net wage in the month before the interview multiplied by 13. Monthly pre-partum income was measured as the monthly net wage taken from the interview that preceded the birth.

All models include an intercept term. **, * and o indicate statistical significance at the 1, 5, and 10 percent level. The number of observations varies between the four subsamples and specifications. For specifications 1 and 2, the observations amount to 240 for rows 1 and 5; 311 and 310 for rows 2 and 6; 365 for rows 3 and 7; and 186 and 185 for rows 4 and 8. For specification 3, the observations amount to 203 for rows 1 and 5; 271 for rows 2 and 6; 320 for rows 3 and 7; and 154 for row 8. Specification 3, row 4, cannot be estimated due to a lack of observations.

nificant outcomes, suggesting that particularly mothers with low-income partners experienced a substantial increase in their self-assessed propensity to return quickly to the labor force. This reaffirms Kluve / Tamm's (2009) finding that the reform significantly increased the return to employment at 1.5 years after childbirth. Compared to an average of about 45 percent, the marginal effect of 12 to 20 percentage points is considerable. For the better-off mothers, the speed of the intended return generally 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 accelerated the intended return among those mothers who, prior to the reform,

would have intended to return later. Overall, the estimation results are robust to controls for covariates, as they hardly differ across the three specifications.

4. Conclusion

We evaluated the causal effect of a reform that increased parental leave benefits and shortened their payment period. We expected the family benefit reform to yield heterogeneous effects because the income thresholds under both the old and the new regime generate a variety of effects and incentives. We hypothesized that labor force attachment would increase among those who received less under the new than under the old regime, and that the new parental benefits would reduce labor force attachment, at least in the short run.

The hypotheses were tested on data from the German Socio-Economic Panel (SOEP). Studying new mothers' intentions to return to the labor force, we indeed found evidence of increased labor force attachment among those likely to lose out under the reform. However, the results for those likely to win were less clear. While on average their propensity to return to the labor force declined, those who intended to return may have returned sooner. This would contradict our theoretical predictions. The results are robust to different empirical specifications and to the exact definition of the outcome measure.

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