

The Effect of Income Thresholds on Female Labor Supply during Parental Leave

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Abstract

One of the driving forces behind the still-prevailing and substantial gender wage gap is the disproportionate impact of children on the careers of women. Even after pregnancy and lactation, mothers carry the lion's share of unpaid work within the household. Most OECD countries offer a combination of cash benefits and job protection to alleviate income losses during the baby break, and encourage job continuity thereafter. Employment possibilities during parental leave are usually limited by income thresholds. Numerous studies analyze changes in the duration of parental leave and find effects on women's return-to-work behavior, but a very limited impact on labor market outcomes in the longer run. In contrast, the effect of income thresholds during parental leave received little to no attention by economists. Working for a few hours each week or a few days each month during the baby break could foster careers of mothers, strengthen their attachment to the employer, and may help to prevent the loss of human capital, firm-, and job-specific skills. Furthermore, keeping in touch with colleagues could make re-entries for mothers easier. While low income thresholds during parental leave could deter women from any paid work during benefit receipt, higher limits may encourage such behavior. This project aims to overcome the gap in the literature by analyzing the interplay between income thresholds and female labor supply during parental leave.

1 Motivation

Female employment has grown considerably over the last few decades in Austria, while male employment remained stable on a high level.¹ The rising female employment was accompanied by an increase in part-time working arrangements for women.² While the gap in employment rates between childless women and mothers decreased over the last few decades, a parenthood gap in working hours

¹OECD (2020a): Austrian labor force participation rate (ages between 25 and 54):
Females: 1999: 75.7%; 2019: 85.7%; Males: 1999: 93.9%; 2019: 92.4%

²OECD (2020b): Austrian share of part-time employed over dependent employees aged
between 25 and 54: Females: 1999: 27.3%; 2019: 34.4%; Males: 1999: 1.7%; 2019: 5.1%

has emerged (Berghammer and Riederer, 2020).³ The high share of part-time employed women in Austria results in one of the highest unadjusted gender pay gaps in Europe (2018: 19.6% - Eurostat (2020)).

The diverse impact children have on labor market outcomes of women and men received a lot of attention in recent years. Kleven et al. (2019b) find that in Denmark, the part of gender inequality in wages that can be attributed to children has doubled between 1980 and 2013 (from 40 to 80%). They argue that the unexplained part of the gender wage gap found nowadays in most decomposition studies is largely due to children. Kleven et al. (2019a) estimate child penalties in six countries including Austria. They find that women in Austria face the second-largest long-run child penalties among those countries. In contrast to the United States and the United Kingdom, these penalties in Austria are not a result of extensive margin effects (employment), but mostly driven by the intensive margin (hours worked) and wage-rate effects (as seen above in Berghammer and Riederer, 2020).

Considering the huge impact children have on the gender wage gap, the importance of public policies for a more gender-equal society is obvious. Changes in the duration of parental leave induced by reforms were studied intensively and seem to affect women's return-to-work behavior, but the impact on women's labor market outcomes in the medium- and long-run is very limited (e.g. Lalive et al., 2013, Schönberg and Ludsteck, 2014, Dahl et al., 2016). Most parental leave regimes limit women's labor supply during parental leave with income thresholds, but this essential component of parental leave policies received little to no attention by economists. Part-time working arrangements in the first two years after childbirth could strengthen mothers' attachment to the employer and foster labor market careers of mothers. Keeping in touch with colleagues might facilitate an easier re-entry for mothers and working at least some hours per week during the baby break may help to mitigate the loss of human capital, firm-, and job-specific skills. With this project, I intend to analyze the effects of income thresholds on mothers' labor supply during parental leave.

2 Project description

In Austria, the main burden of childcare falls on women, especially for mothers with very young children. The possibility for mothers to work with a young child at home, even in a very reduced form, depends on the availability of childcare arrangements during working hours (institutional childcare or alternatively care provided by fathers, extended family or childminders). However, even if mothers of young children have childcare arrangements that allow them to work

³OECD (2012): Austrian women aged 25-54, childless or with children (< 15):
Employment rate: childless: 82.2%; with children: 74.6%
part-time employment: childless: 27.2%; with children: 52.1%

at least a few days per month, most of them are on a job-protected leave and draw parental leave benefits. Job protection and the receipt of parental leave benefits are conditional on mother's income in Austria.

Two recent reforms changed the income thresholds during parental leave and I intend to evaluate their effect on the labor supply of mothers. The most promising reform happened in 2002. Not only did the limit for income earned during parental leave benefit-receipt quadruple, but also the restrictions for paid work during the job-protected period were softened. Instead of a fixed income limit during job protection equal to the threshold for minor employment (up to €301.54 per month in 2002), women could earn income above this threshold for a quarter of the duration (13 weeks for a whole year). Both rules applied to births after June 30, 2000 and the new thresholds applied to income earned after December 31, 2001. Women who gave birth during this transition period were already eligible for a longer duration of parental leave benefit-receipt (30 instead of 18 months - minimum of 6 additional months reserved for fathers).

Another interesting reform, especially for high-income mothers, was enacted in 2010. Mothers who gave birth before October 2009 could choose between three different versions of flat-rate parental leave benefits (maximum duration between 15 and 30 months, monthly payments between €800 and €436). For mothers who gave birth after December 31, 2009, two additional versions were added. Both granted parental leave benefits up to 12 months after birth (minimum of 2 additional months reserved for fathers), but one offered a monthly flat-rate amount of €1,000 and the other offered substantially higher income-related benefits equal to 80% of pre-birth earnings (floor: €1,000 monthly; ceiling: €2,000 monthly). For the flat-rate versions, an income threshold during benefit-receipt of €16,200 per year applied (or an individual threshold of 60% of pre-birth earnings), but a much lower income threshold of €5,800 per year applied for the income-related benefits. A transition period was granted to mothers who gave birth between October 1, 2009 and December 31, 2009.

By analyzing these two reforms (see appendix for further information about the planned analysis), the effect of income thresholds on mothers' labor supply during parental leave benefit-receipt can be evaluated from two different perspectives. If a positive effect of elevated thresholds (or a negative effect of more constraining limits) could be found, this would suggest that income thresholds actually limit women's labor supply during this time. A related question, which is much harder to answer, is if working part-time during parental leave, instead of staying out of work completely, actually improves mothers' subsequent labor market prospects. If further research suggests such an effect, this could encourage a discussion about the abolishment of income constraints during parental leave.

3 Appendix

Institutional setting

In Austria, the share of fathers over all recipients of parental leave benefits was constantly below 5% between 2008 and 2019 (StatisticsAustria, 2020a). Additionally, the share of children below the age of three in institutional childcare facilities is still quite low, even though it increased from 7.7% in 2000 to 27.6% in 2019 (StatisticsAustria, 2020b).⁴

There is a distinction between the job-protected period after giving birth (*Elternkarenz*) and the period of parental leave benefit-receipt (*Kinderbetreuungsgeld / Karenzurlaubsgeld*) in Austria. Job protection means that employers are obligated to offer women the same or a comparable job after returning from the baby break until the second birthday of the child. During this job-protected period, minor employment (*geringfügige Beschäftigung*: up to € 460.66 per month in 2020) is possible during the whole duration. Since 2002, women could earn income above this threshold for up to a quarter of the duration (13 weeks for a whole year). The pre-birth employers are not obligated to offer any employment during the job protected period, but their consent is required if a woman wants to work for a different employer during this time. The law defines no consequences for exceeding the income threshold during the job-protected period or working during this time without the pre-birth employers consent. A possible consequence would be the end of job protection, but, to my knowledge, not a single case regarding such violations was brought in front of court.

Working during parental leave benefit-receipt is possible, but limited by an income threshold. This threshold was changed several times in the last few decades and so were the sanctions for exceeding it. The most drastic change was implemented through the parental leave reform of 2002. Before 2002, any earnings above the minor employment threshold (up to € 296.2 per month in 2001) meant that parental leave benefits for the whole calendar year needed to be paid back. This threshold was raised to € 14,600 per year in 2002 and another time in 2008 to € 16,200 per year. The rules for exceeding this threshold were also changed in 2008. From that year on, payback only applied to the amount exceeding the threshold. In 2010, an individual threshold was introduced in addition to the fixed amounts. The individual threshold amounted to 60% of the earnings in the calendar year before childbirth and was only applicable if it exceeded € 16,200 per year. For the income-related parental leave benefits, also introduced in 2010, a different, much lower, income threshold applies (2010: € 5,800 per year; 2012: € 6,100 per year; 2013: € 6,400 per year).⁵

⁴StatisticsAustria (2020c): In 2019, only 46.7% of the municipalities offered facilities exclusively dedicated to children below the age of three. 27.3% of those facilities were opened for less than 8 hours per day and 21.3% were closed for more than 25 days per year (StatisticsAustria, 2020d). Additionally, 9.3% of the municipalities offered a facility for mixed ages.

⁵The income regarded for these thresholds lies in-between the gross and net earnings. For

Empirical approach - 2000/2002 reform

To evaluate the impact of the 2000/2002 reform and the elevated income thresholds on mothers' labor supply during the baby break, I restrict the sample to mothers who drew parental leave benefits at least until 18 months after childbirth to make sure a change of the income limit would affect them. The treatment group consists of mothers who gave birth between November 2000 and February 2001. I observe their monthly labor earnings between September 2001 and April 2002. Thus, I consider earnings in four months with a lower and four months with a higher income threshold. Their children were aged between 7 and 10 months in September 2001 and between 14 and 17 months in April 2002. The control group consists of mothers who gave birth between November 1999 and February 2000. For the control group, monthly earnings between September 2000 and April 2001 are considered. While the treatment group was eligible to parental leave benefits until their child was two and a half years old, for the control group the eligibility for parental leave benefits ended 18 months after childbirth. With this setup, I assess the differences in earnings between 2001 and 2002 for the treatment group (lower vs. higher income threshold), relative to differences in earnings between 2000 and 2001 for the control group (only lower income threshold).

The following model is estimated:

$$\begin{aligned}
 Y_{ictm} = & \sum_{n \in \{Nov, Dec, Jan, Feb\}} \alpha_n \mathbb{1}\{m = n\} + \\
 & + \sum_{u \in \{Sep, Oct, Nov, Jan, Feb, Mar, Apr\}} \beta_u \mathbb{1}\{t = u\} + \theta D_c + \\
 & + \sum_{u \in \{Sep, Oct, Nov, Jan, Feb, Mar, Apr\}} \gamma_u D_c \mathbb{1}\{t = u\} + \varepsilon_{ictm}
 \end{aligned} \tag{1}$$

Y_{ictm} represents the earnings in calendar month t (September-April) of mother i of birth cohort c who gave birth in calendar month m . D_c is an indicator equal to one if the mother gave birth during the transition period of the 2002 reform (treatment group – births between November 2000 and February 2001) and equal to zero for births unaffected by the 2002 reform (control group – births between November 1999 and February 2000). $\mathbb{1}\{.\}$ is the indicator function. The overall mean difference in outcomes between treatment and control group is captured by θ . Birth-month fixed effects α_n control for seasonality and effects of the age of the child on mothers' labor supply. The parameters β_u measure

example in 2002, the earnings ceiling amounted to a gross salary of around €1,130 per month (around €15,820 per year including special payments).

the monthly time profile of earnings in the control group and γ_u measure the difference in time profiles between the treatment and control group relative to the reference month December. The coefficients of interest are the γ_u for the months January to April. If the elevated income thresholds had any effect on earnings, these coefficients would be significantly different from zero.

Empirical approach - 2010 reform

To evaluate the effect of the 2010 reform and the lower income limit for income-related benefits on mothers' labor supply, the sample for the econometric analysis must be constructed carefully. Mothers could be eligible for income-related benefits above €1,000 monthly, but choose a flat-rate version, because of the more generous income constraints. To ensure that only mothers who would choose the income-related parental leave benefits are included, the sample is restricted to mothers with pre-birth earnings that grant income-related parental leave benefits of at least €1,500 per month. Requirements for the eligibility for income-related benefits must be met as well (e.g. employed for the last 6 months before childbirth) and the sample is restricted to mothers who drew parental leave benefits at least until the first birthday of the child. I assess the difference in accumulated earnings in the first 12 months after birth between mothers who gave birth between January and April 2010 (affected by the reform) and mothers who gave birth between June and September 2009 (neither affected by the reform nor the transition period). To control for seasonality, a pre-reform cohort is added (mothers who gave birth between June and September 2008 and between January and April 2009).

The following difference-in-differences model is estimated:

$$Y_{ict} = \beta_0 + \beta_1 POST_t REFORM_c + \beta_2 POST_t + \beta_3 REFORM_c + X_i' \gamma + \varepsilon_{ict} \quad (2)$$

Y_{ict} represents the accumulated earnings in the first 12 months after birth of mother i who gave birth in the calendar month t (June – September, and January – April) of birth cohort c . $POST_t$ equals one for births in the months of January, February, March, and April. $REFORM_c$ equals one for births in the reform cohort (January – April 2010 and June – September 2009) and zero otherwise (January – April 2009 and June – September 2008). Mother's characteristics are described by X_i' .⁶ The coefficient β_1 identifies the impact of the lower income threshold on mothers' labor supply in the first year after birth.

⁶Mother's characteristics, X_i' , include mother's age at birth, labor market performance indicators measured 12 months before birth (tenure, experience, unemployment, cumulative income, daily wage), and dummies for industry, region and white collar.

Data

The empirical analysis in this project is based on data from the Arbeitsmarktdatenbank (AMDB des AMS Österreich und des BMA). The AMDB is a linked firm-worker data set that covers the whole workforce in the Austrian private sector from 1972 onward (very similar to the ASSD - Zweimüller et al., 2009). Information on a daily basis is available for spells of employment, unemployment, maternity leave (*Wochengeld*), parental leave benefit-receipt (*Kinderbetreuungsgeld / Karenzurlaubsgeld*) and childbirth. For each calendar year and employer identifier, individual earnings are recorded. Employment spells contain information about the type of employment used to distinguish between blue- and white-collar employees. On the firm level, the data offers additional information about the geographical location and the industry affiliation. Major drawbacks of this data set are that earnings are top-coded (*Höchstbeitragsgrundlage*: €75,180 gross per year in 2020) and there is no information about working hours.

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