




## **Women Still Can't Have It All**

Barriers to Higher Maternal  
Employment in Slovakia



May 2018

## Abstract

Employment of mothers in Slovakia in the first three years of their children's life lags significantly behind the labour outcomes observed in other EU countries. That has a negative impact on their medium-term labour outcomes and wages.

Mothers with higher previous labour market income, higher level of education and longer work experience tend to enter into the labour market faster after childbirth. On the other hand, factors as being a single mother or low availability of informal childcare provided by grandparents have a strong negative impact on maternal employment. Moreover, women appear to be treated unfavourably when applying for jobs typically requiring lower educational background, thus potentially creating an additional barrier to return to work.

Family policies should be aimed at tackling the main barriers to maternal employment such as the lack of quality and affordable childcare facilities, low availability of flexible work arrangements and relatively long parental leave without involvement of fathers.

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## Acknowledgement

The authors thank Zuzana Dančíková (Value for Money Unit, MF SR), Gabriel Machlica (OECD) and Andrej Svorenčík (University of Mannheim) for reviewing this text. The work also benefited from the feedback and useful comments of Lucia Šrámková, Monika Pécsyová, Peter Harvan, Michal Habrman, Tomáš Rizman and Branislav Žúdel (all IFP). The authors also thank the Institute for Social Policy and the Department of Gender Equality and Equal Opportunities (both Ministry of Labour, Social Affairs and Family of the Slovak Republic) for valuable suggestions and comments. Any errors or omissions are exclusively the responsibility of the authors.

## Note

This document presents the views of its authors and of the Institute for Financial Policy (IFP) which do not necessarily reflect the official views of the Ministry of Finance of the Slovak Republic (MF SR). The analyses prepared by the IFP are published to stimulate and enhance professional and general discussion on various economic topics. Therefore, any quotations of this text should refer to the IFP (and not the MF SR) as to the author of these views.

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## Executive Summary

Affordable formal childcare and availability of flexible work arrangements seem to positively affect the employment of mothers in EU and OECD countries. These policies, together with more intensive involvement of fathers in parental care, can ease entry of women into the labour market. Moreover, time spent with father may positively affect the overall child development.

Experiences from other OECD countries also indicate that excessively long paid parental leave (for instance, longer than two years) is linked to lower maternal employment. Policies aimed at shortening the paid parental leave are likely to improve maternal labour market outcomes. At the same time, there is no evidence of significant difference in child development, not even later in life, when returning to work already in the second year after the birth, compared to longer parental leave.

A review of international evidence suggests that relatively short paid parental leave does not hinder the fertility rebound observed in some advanced economies. On the contrary, policies promoting reconciliation between work and family life (support for formal childcare and flexible work arrangements) might even have a positive impact on the fertility rate in countries with relatively shorter paid parental leave. In such cases, positive fertility trends are also associated with higher female employment rates.

Maternal employment in Slovakia in the first three years of child's life lags significantly behind EU and OECD countries and this has a negative impact on the financial well-being of their families and their medium-term labour outcomes. As a result of long parental leave, women with children suffer a wage penalty upon returning to work relative to non-mothers and men.

Higher previous labour income, higher education and longer job history positively affect early maternal employment in Slovakia. Higher income in previous work significantly shortens the effective length of parental leave when compared to mothers with low or no income before childbirth. Further, being a single mother or limited support from grandparents represent significant barriers to employment.

According to our experiment, women appear to be treated unfavourably when applying for jobs typically requiring lower educational background. This may potentially create an additional barrier to women employment. Surprisingly, the overall data also indicate possible unfavourable treatment of females in the capital, but not in Eastern Slovakia.

Based on analysed national data, reviewed policy evaluations and best practices in other countries, the study recommends to:

- Support building and extending quality and affordable childcare facilities by municipalities for children aged 0 to 2 years based on regional needs including increased incentives for parents.
- Introduce a flexible paid parental leave schemes that would enable to choose from different durations of paid leave with corresponding benefit for parents taking up employment.
- Introduce an indirect paternal quota for parental leave implicitly by shortening the eligibility for parental leave taken up by first parent.
- According to best practices in EU and OECD countries, consider a differentiated family tax credit to support more disadvantaged parents.
- Implement simple smart tools that would increase transparency in hiring and wage bargaining practices such as an online wage calculator and gender pay gap statistics.

## 1 Introduction

Maternal employment during a child's early years is a topic heavily discussed among many researchers in various fields. It is indisputable that the first few months after birth are crucial for child development (for example, because of breastfeeding) and the mother's health. However, many studies confirm that return to work after only twelve months appears to not have any detrimental impacts on child development in later age. Early employment uptake has a considerable positive impact on maternal employment rates, resulting in reduced wage penalties for women and increased financial well-being.

This study aims to identify the main factors determining low employment probability of mothers with children below the age of 3 in Slovakia. It reviews international evidence, Slovak administrative data and collected experimental data to identify additional barriers to early maternal employment (such as gender discrimination in the hiring process).

The paper is organised as follows. The second section identifies the main determinants of maternal employment from international evidence and presents observed policy impacts. The third section analyses the probability and timing of (re)entry<sup>1</sup> into employment for mothers after childbirth using Slovak administrative data (2008 – 2011). The fourth part examines potential gender discrimination in the recruiting process in Slovakia using data obtained in a field experiment conducted between July 2016 and March 2017. The final section concludes and introduces policy recommendations.

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<sup>1</sup> The term refers to returning to work or entering new/first employment during or shortly after paid parental leave.

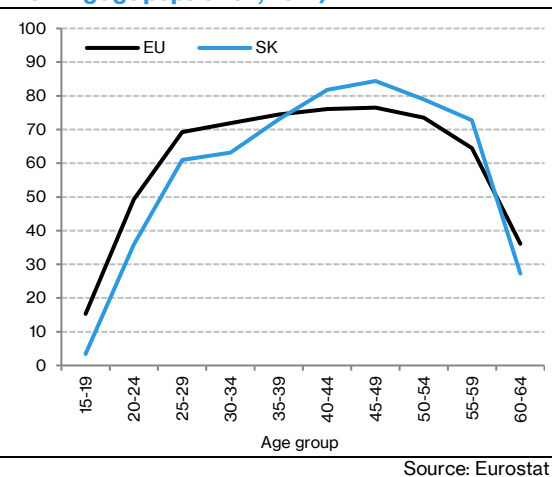
## 2 Mothers in the Labour Market

On average, Slovak mothers (re)enter into the labour market significantly later than mothers in other EU countries. This results in a substantial wage penalty relative to non-mothers and men. Yet, countries with relatively long paid parental leave do not experience higher fertility rates when compared to countries with shorter paid leave. Instead, the fertility rate and the overall well-being of parents can be increased by family-friendly policies improving parents' work-life balance.

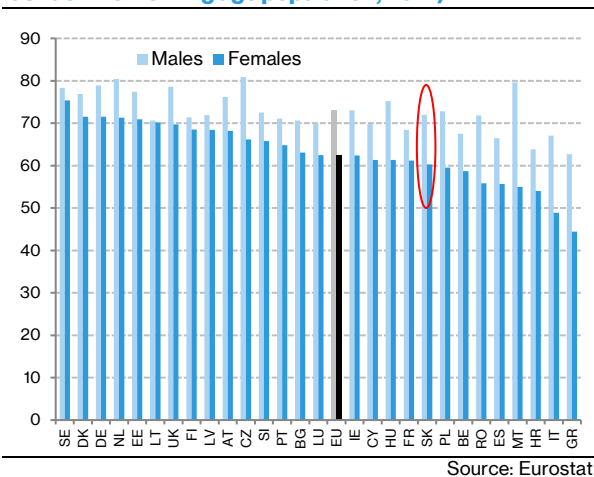
International evidence suggests that excessively long paid parental leave is linked to lower maternal employment. Policies aimed at shortening paid parental leave are likely to increase maternal labour market outcomes. At the same time, there is no evidence of significant difference in child development, not even later in life, when returning to work already in the second year after the birth, compared to longer parental leave. Nevertheless, affordable formal childcare and flexible work arrangements may positively affect the employment of mothers as well. These policies, together with more intensive involvement of fathers in parental care, can ease the entry of women into the labour market. Moreover, time spend with the father may positively affect child development later on.

Labour market outcomes of Slovak mothers with preschool-aged children differ substantially from the outcomes of the top performing EU and OECD countries. The largest negative differences vis-à-vis the EU average women employment rate can be observed among women aged 15 to 34 years and the oldest age cohort (ages 60 to 64). While the former lag is caused by long paid parental leave and university studies, the latter is mostly driven by lower retirement age. The 2012 pension reform has introduced a gradual increase of the retirement age for women<sup>2</sup>. Despite the employment fallout at an earlier age, the women employment rate appears to catch up and outperform the EU average in the 35 to 59 age cohort. Nevertheless, the overall employment gap between genders remains well above the EU average.

**Figure 1: Employment rates of women (% of the working age population, 2017)**



**Figure 2: Gender employment gap (employment rates as % of the working age population, 2017)**



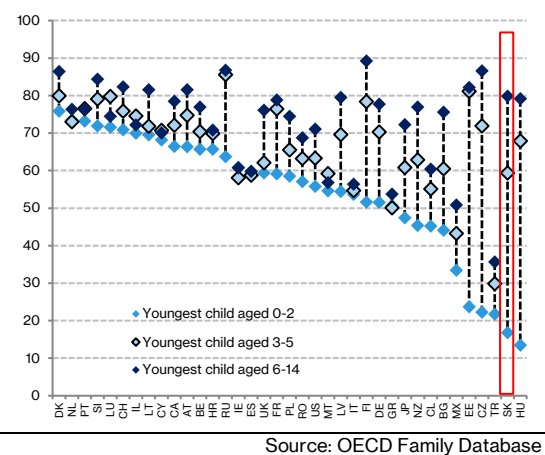
The employment rate of Slovak mothers with children of age 0 to 2 is one of the lowest among EU and OECD countries. Moreover, lower maternal participation in the labour market is also observed for mothers in Slovakia that are no longer eligible for paid parental leave. As a result, the employment rate of mothers with preschool-aged children from 3 to 5 remains well below the OECD average.

The duration of parental leave in Slovakia can be considered as one of the drivers of the gender pay gap. This gap is one of the highest in the EU (IFP, 2017). Mothers returning to work tend to be penalized in terms of lower wage rates relative to non-mothers and men (Anderson et

<sup>2</sup> The statutory retirement age for women and men will be equalised in 2024.

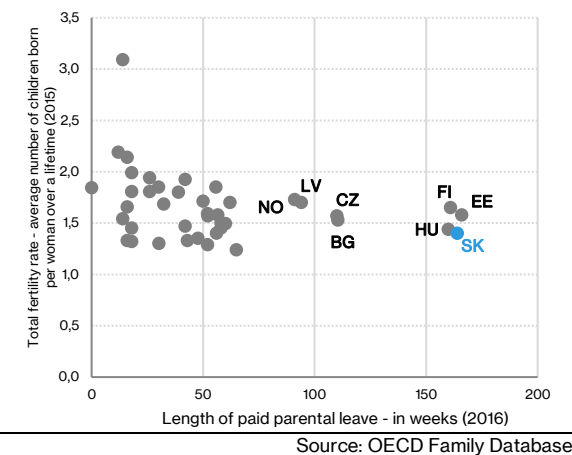
al., 2003; Correll et al., 2007; Fernández-Kranz et al., 2013). One of the potential remedies can be shortening of the eligibility period during which parents can reap the parental benefit. This is expected to induce positive effects in the overall labour market performance in terms of reduced human capital depreciation and wage penalties.

**Figure 3: Maternal employment rates by age of the youngest child (% , 2014 or latest year)**



Source: OECD Family Database

**Figure 4: Fertility rates and the length of paid parental leave**



Source: OECD Family Database

**Countries with relatively shorter paid parental leave policies may experience even higher fertility rates than countries offering excessively long paid leaves.** In general, lower fertility rates observed in developed countries over recent decades can be attributed to increased women's educational investment followed by increased labour market participation. Also, the transformation of values resulting in stronger preference of gender equality could have partially caused the aforementioned decrease (Thévenon, 2009). On the contrary, economic development can to some extent explain the latest rebound in fertility rates in some countries (Myrskylä et al., 2009). And more importantly, there is a positive association between increased women employment and fertility rates which is a result of changes in social norms and institutions promoting work and family life reconciliation (Luci and Thévenon, 2010).

### Role of parental leave

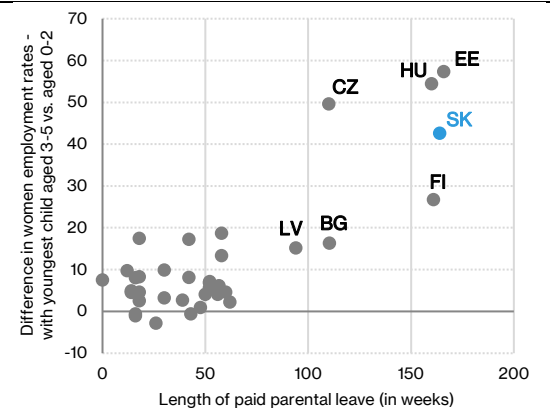
**Relatively long paid parental leave policies are associated with lower employment rates of mothers with small children<sup>3</sup>.** OECD countries with the longest paid leave experience the largest employment gaps between women with the youngest child aged 0 to 2 years and those with the youngest child aged 3 to 5 years. If the total period of paid parental leave does not exceed two years, then it may even have a small positive impact on women's employment and the gender employment gap through job guarantees (Han et al., 2009; Thévenon, 2013). Additional weeks of paid leave influence the employment outcomes only negatively (Thévenon and Solaz, 2013; Olivetti and Petrongolo, 2017). Positive effects stemming from longer paid parental leave can possibly be observed, but only in countries with no mandated paid parental leave scheme<sup>4</sup>.

**Shortening of paid parental leave may induce faster return of mothers to the labour force.** Shorter paid parental leave (one year instead of two) with increased earnings replacement benefits has positively influenced maternal employment in Germany (Huebener et al., 2016). Faster return to work is also said to be caused by a shift in social norms and mothers' preferences for economic independence (Bergemann and Riphahn, 2015). More flexible paid parental leave schemes that allow parents to shorten the duration of the leave while preserving the total cumulative cash support received over time may also increase maternal employment (Bičáková and Kalíšková, 2016).

<sup>3</sup> In the short run: Lalive et al., 2011; Schönberg and Ludsteck, 2014; in the long run with a similar policy setting: Bičáková and Kalíšková, 2016.

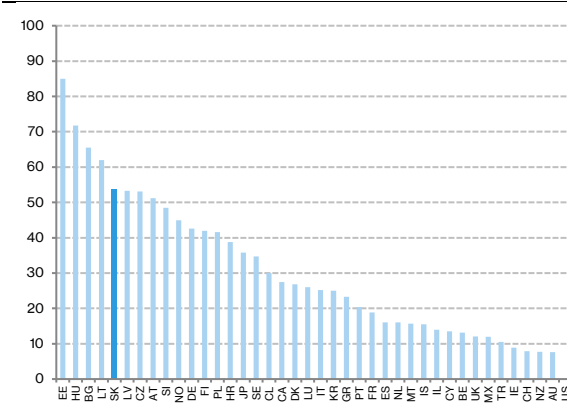
<sup>4</sup> For example in the USA (Byker, 2016).

**Figure 5: Employment rate of mothers with children and length of paid parental leave (2016)**



Source: OECD Family Database

**Figure 6: Total paid leave available to mothers (full-rate equivalent in weeks<sup>5</sup>, 2016)**



Source: OECD Family Database

**Earlier employment of mothers after birth does not appear to have a significant negative impact on children's socio-emotional outcomes later in life** (Brooks-Gunn et al., 2010; Blaskó, 2008; Künn-Nelen et al., 2013; Huebener, 2017). Research shows that such detrimental effects can only be observed if the employment begins in the first year of the child's life (Baum, 2003; Ruhm, 2004). Intensive maternal care during the first months after birth is considered crucial for child development and may even lead to better child's health outcomes later on (Berger et al., 2005; Broadway et al., 2015). Surprisingly enough, return to employment in the second or third year after birth positively influences children's cognitive abilities<sup>6</sup>. Notably, more favourable outcomes are observed for women working part-time rather than full-time (Ruhm, 2004).

**Paid paternal leave schemes may help mothers transition back to employment.** Not so long ago, several countries introduced policies that promote or incentivise paid leave for fathers (OECD Family Database, 2016). Introduction or extension of such entitlements exclusively to fathers may increase their involvement in more demanding childcare activities, thus enabling mothers to return to work (Adema et al., 2014; Eydal, G. and Gíslason, I., 2014). Furthermore, research finds evidence in favour of positive influence on child's cognitive outcomes linked to time spent with father (Huerta et al., 2013; Cools et al., 2015). In Slovakia, fathers can participate in the paid parental leave scheme instead of mothers, but there is no paternity quota that can only be used exclusively by fathers (in addition to the maternal paid leave).

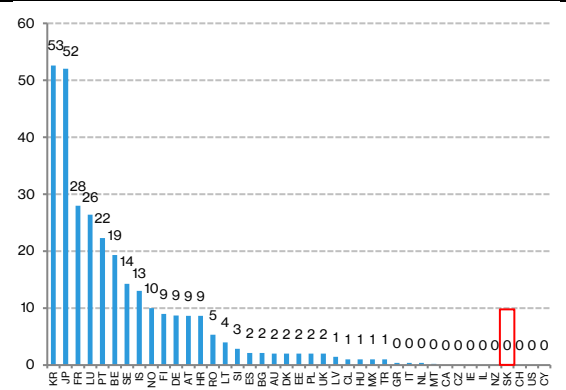
**Paid parental leave policies alone do not have a significant positive impact on the fertility rate. Policies promoting wider availability of childcare facilities and services for children under the age of 3 together with some regular cash support appear to be more relevant** (Luci-Greulich and Thévenon, 2013). Besides policies such as paid leave and job protection, support of families reducing financial costs of childcare can have the greatest impact on the parent's well-being. This is accomplished through better employment outcomes resulting in higher total family income (Glass et al., 2016).

<sup>5</sup> Total paid leave in weeks if the monthly benefit is calculated as an equivalent of the national average wage.

<sup>6</sup> Danzer and Lavy (2018) also find no significant overall impact of the parental leave extension on standardized PISA test scores at age 15. However, they find positive impact on children with highly educated mothers (results are mostly driven by boys). This result suggests the importance of home childcare in an institutional setting with low supply of formal quality childcare.

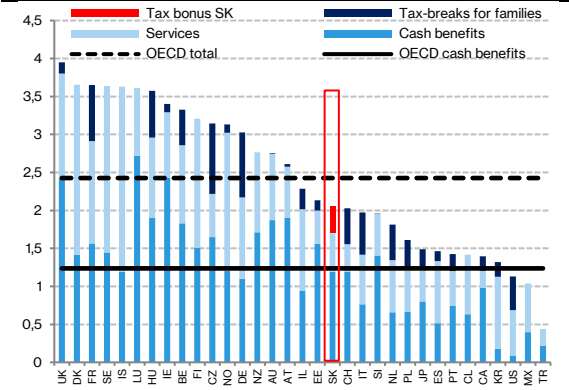


**Figure 7: Length of paid leave for fathers (weeks, 2016)<sup>7</sup>**



Source: OECD Family Database

**Figure 8: Public spending on families (% of GDP, 2013 or latest year)<sup>8</sup>**

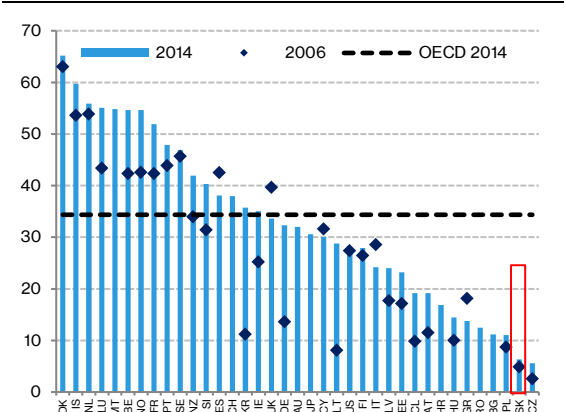


Source: OECD Family Database

### Role of childcare services and flexible work arrangements

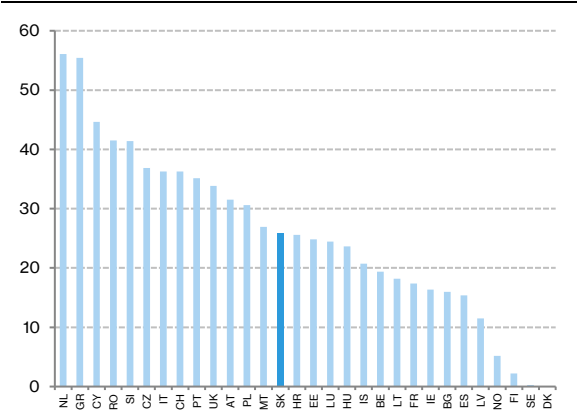
Policies such as childcare support and in-work benefits for working mothers are among the most effective in reducing the gender disparities in employment outcomes (Olivetti and Petrongolo, 2017). Many countries, including Slovakia, typically support families utilising different cash benefit schemes<sup>9</sup>. On the other hand, a few exceptions such as Nordic countries invest heavily in childcare services. The availability of childcare facilities typically has positive effects on employment with even stronger impact on women with less than tertiary education (Del Boca et al., 2008).

**Figure 9: Participation rate for children aged 0 to 2 years in formal childcare (% , 2006 and 2014 or latest available)<sup>10</sup>**



Source: OECD Family Database

**Figure 10: Share of children aged 0 to 2 years utilising informal childcare (% of children, 2014)**



Source: OECD Family Database

**Employment of mothers with young children is positively correlated with the availability of formal or informal childcare arrangements.** Increased affordability of public childcare facilities has a positive causal effect on the labour market participation of mothers (Lefebvre and

<sup>7</sup> In Slovakia, fathers can apply for maternity leave lasting 28 weeks which replaces 75 per cent of the previous work income. It can extend the overall standard length of family's maternal leave from 34 to 62 weeks, but it does not extend the total three-year period of paid parental leave. Therefore, the paternity leave cannot be viewed as a policy exclusively aimed at fathers (according to the OECD methodology).

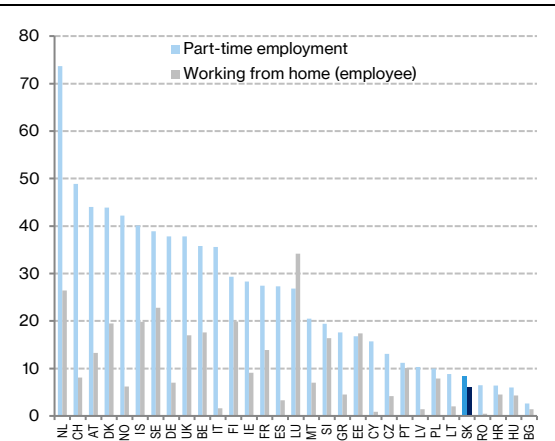
<sup>8</sup> According to the OECD methodology, the child tax bonus in Slovakia is recorded only under cash benefits. The Slovak tax statistics do not include information whether child tax bonus is deducted from the tax liability or returned to the taxpayer in cash in case of any excess over the tax liability. Figure 8 shows the child tax bonus separately.

<sup>9</sup> Cash benefits usually include paid parental leave, childbirth allowances, in-work benefits and child benefits usually paid from birth of the child until the beginning of adulthood.

<sup>10</sup> The OECD data include formal services such as public and private centre-based services (nurseries or day care centres and preschools), organised family day care and care services provided by (paid) professional childminders.

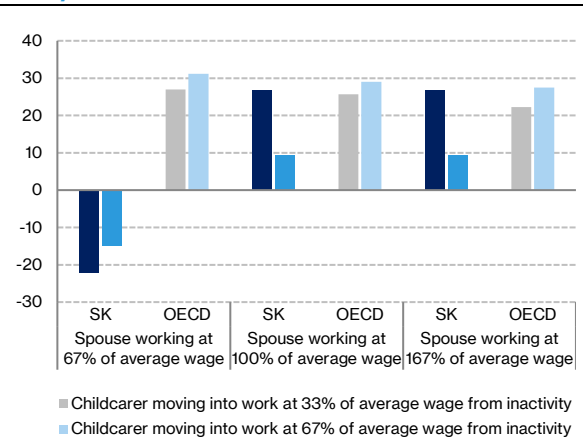
Merrigan, 2008; Geyer et al., 2015; Bauernschuster and Schlotter, 2015). Informal childcare, typically provided by grandparents, can act as a proxy for formal childcare and it appears to have a similar positive impact on the mother's labour supply (Arpino et al., 2012). In countries with limited availability of formal childcare facilities or part-time job arrangements, women depend strongly on the frequent help from grandparents if they want to combine motherhood and work (Bordone et al., 2017). At the same time, investment in formal childcare facilities in combination with appropriate cash benefit schemes seem to be more effective in promoting fertility in advanced countries than paid leave schemes (OECD, 2011; Adema, 2012).

**Figure 11: Flexible forms of employment (% of employed women aged 15 to 39 years, 2017)**



Source: Eurostat

**Figure 12: The impact of tax-benefit system on work incentives of families (participation tax rates in %, 2016)<sup>11</sup>**



Source: OECD Tax and Benefit Systems

**Part-time work has a positive impact on the employment of mothers.** Availability of part-time work arrangements (assuming similar wage rates and job protection as full-time positions) appears to have a positive impact on female labour market participation. The effect is stronger for women with higher educational levels (Del Boca et al., 2008). Moreover, policies promoting two-earner families are also important factors boosting the female labour force participation, in particular in case of part-time employment (Thévenon, 2013; Thomas and O'Reilly, 2016).

An increase in the participation tax rate appears to decrease the female employment probability (Kališková, 2015). This impact is stronger for single mothers, for women with average skill set and in countries with lower rates of female participation. However, the design of the Slovak tax-benefit system does not seem to create higher barriers to employment for mothers compared to other countries (OECD Tax and Benefit Systems, 2016). In general, higher participation tax rates create greater disincentives to work. This might be a decisive factor for households with a spouse working for average wage and a childcarer being employed part-time (Figure 12). In the most severe cases, it might be more profitable for the whole family if the parent working part-time stays at home instead of working. At the same time, Slovakia experiences one of the lowest share of more flexible forms of work when it comes to women's employment.

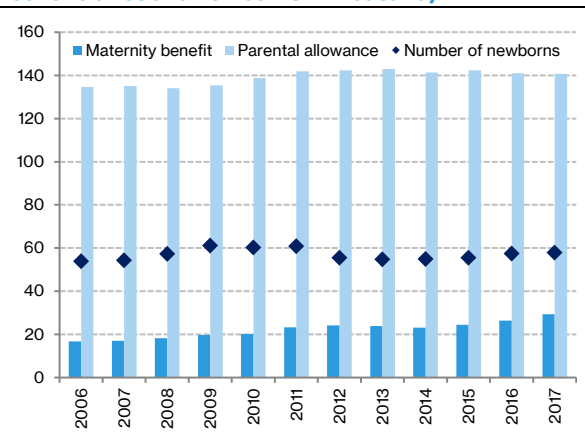
<sup>11</sup> Figure 12 shows the participation tax rates of the inactive childcarer moving into work with below-average income in a married-couple household with a single earner and two children. There is no effect of social benefits, since the above-mentioned household examples are no longer eligible for social assistance. (Dis)incentives to work are determined only by a personal allowance and a dependent spouse allowance that can decrease the taxpayer's tax base. The lower (even negative) value of the participation tax rate, the greater financial gains to work. Higher values represent greater disincentives to work.

### 3 Entry into the Labour Market after Childbirth: Evidence from Administrative Data in Slovakia

Higher previous labour income, higher education and longer job history positively affect mothers' chances to take up employment during paid parental leave in Slovakia. Higher income from previous work significantly shortens the effective length of parental leave when compared to mothers with low or no income before childbirth. Going further, country-specific evidence suggests that being a single mother or limited support from grandparents represent significant barriers to employment. Therefore, affordable formal childcare and more intensive father involvement in home childcare can reduce the opportunity costs of motherhood and boost the employment of mothers with young children.

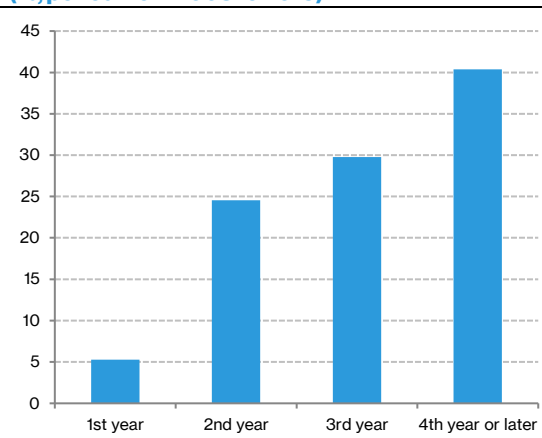
All mothers<sup>12</sup> with children are entitled to a three-year long parental leave with a corresponding job protection and a parental allowance<sup>13</sup>. The non-means tested benefit is available to all families regardless of whether or not they take parental leave (for simplicity we use the term "parental leave" for both cases<sup>14</sup> in this study). In case another child is born within the already running three-year period, the provision of the parental allowance is extended by another three-year long period effectively starting from the date of the another birth. However, parents can only receive one payment of the allowance per month regardless of the number of children. This may motivate parents to have another child in the fourth year or later after the previous birth, suggesting a possible postponement. Around 45 per cent of mothers are also eligible for a maternal benefit. Its value depends on the previous job history<sup>15</sup> and it is provided for a standard period of 34 weeks<sup>16</sup>.

**Figure 13: Parental leave policy in Slovakia (number of beneficiaries and newborns in thousand)**



Source: Slovak Insurance Agency, Statistical Office of the SR

**Figure 14: Timing of decision to have another child (% period from 2008 to 2015)**



Source: IFP based on administrative data

In order to analyse maternal employment during paid leave, we observe every child born as the youngest to a mother during the period from 2008 to 2011. For this period we can track maternal employment during the standard three-year long paid parental leave and at least one year after. The beginning of the period is limited by the availability of other variables. It is possible to observe two types of employment – standard employment and contractual work contracts. In order to narrow down the relevant target group, we take into account only mothers being available to work as opposed to, for instance, disabled mothers or those caring for a disabled child (see Box 1).

<sup>12</sup> Fathers are also entitled to paid parental leave within the shared period of parental leave. Both parents cannot be entitled to paid parental leave at the same time.

<sup>13</sup> Longer job-protected parental leave and corresponding parental allowance is provided in case a child is born with a disability or long-term illness.

<sup>14</sup> Families where a parent stays at home and families where no parent does.

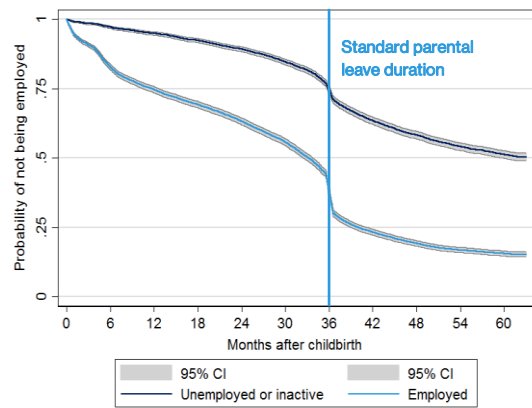
<sup>15</sup> Technically, a woman has to be insured for at least 270 days within the period of two years prior to the delivery. Practically, that means that the woman is employed during this period.

<sup>16</sup> Longer maternal leave is provided for single mothers (37 weeks) and in case of multiple births (43 weeks).

Previously held occupation is a strong determinant of whether a mother takes up employment already during her parental leave. The probability that a mother with above average previous labour income (re)enters the labour market is higher by 10 to 50 percentage points (p.p.) compared to a mother with no or low previous income (see Box 1 on all determinants of maternal employment). Overall, 54 per cent of mothers find a job or return to their previous employer within or immediately after the standard paid leave period is over<sup>17</sup>.

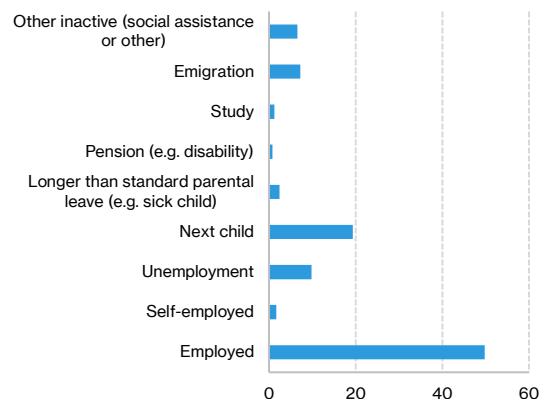
Roughly one quarter of mothers in the sample remain out of employment after the standard paid parental leave period. Additionally, almost 20 per cent of women continue to stay on parental leave due to a consecutive childbirth or a severe sickness of their child. The share of women who are not eligible for paid leave and stay out of the labour market slightly decreases over time. But even five years after birth, around 17 per cent of women are still out of employment. They are either unemployed or inactive due to participation in a social benefit programme.

**Figure 15: (Re)entry into employment by economic status prior to childbirth (children born from 2008 to 2011)<sup>18</sup>**



Source: IFP based on administrative data

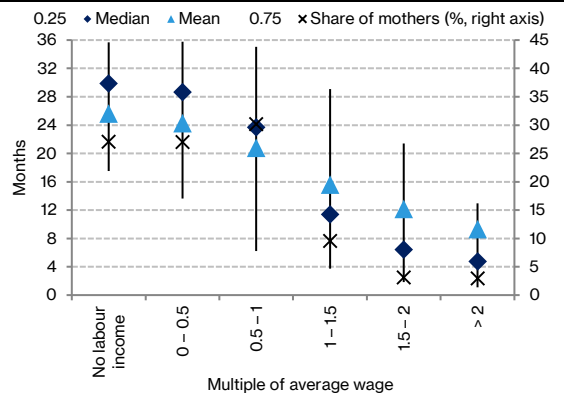
**Figure 16: Socioeconomic status one year after the ending of the parental leave (% of all mothers, children born from 2008 to 2011)**



Source: IFP based on administrative data

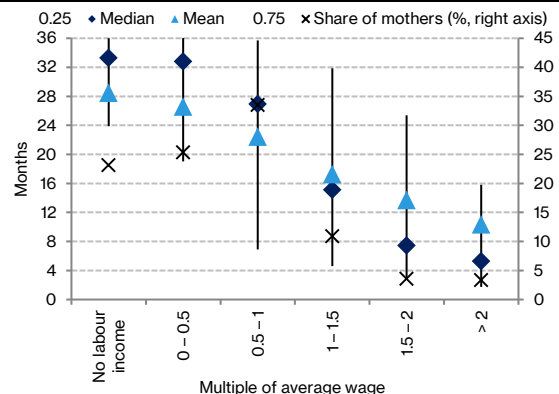
The effective duration of paid leave also depends on the previous labour income. Mothers in the lowest income group spend a significantly longer period of time at home with a child during their paid leave (almost 30 months) compared to the above-average income group. While the median effective parental leave is almost 26 months long, half of the women with at least average previous labour income find a job within 12 months after childbirth.

**Figure 17: Speed of employment (re)entry by previous labour income (permanent or contractual work)**



Source: IFP based on administrative data

**Figure 18: Speed of employment (re)entry by previous labour income (only permanent work)**



Source: IFP based on administrative data

Note: 0.25 and 0.75 represent 25<sup>th</sup> and 75<sup>th</sup> percentile, respectively, within given income groups.

<sup>17</sup> Only 18 per cent find a job in the first year, 30 per cent within the first two years of parental leave.

<sup>18</sup> The calculation includes only active, unemployed and inactive groups from the Figure 18. Due to lack of data, it is not possible to distinguish between various social programmes that cover inactive mothers (material need benefit, carer's allowance and others).

**Flexible work arrangements such as contractual work<sup>19</sup> may speed up the decision to (re)enter the labour market.** If only the permanent contracts are tracked, the median parental leave is 29 months long. If the contractual work is accounted for, the median decreases to 26 months.

**Education and work experience are the key factors determining potential success of mothers on the labour market.** Mothers having on average at least 24 months of work experience prior to birth (compared to mothers with no or a very short work history) increase their probability of becoming employed during or shortly after parental leave by roughly 10 p.p. Nevertheless, previous work experience does not seem to affect the speed of return to work. The outcome is improved only for women with at least five years of previous tenure and it increases the speed of return by two months. University education improves the employment prospects by 12 and 13 p.p. for the overall employment and permanent contracts, respectively. Graduating from the university is associated with faster (re)entry into the labour market by almost two months for both types of contracts.

**Family income seems to be positively correlated with the employment probability of mothers.** Apart from the maternal benefit and the parental allowance, family income during parental leave is mostly determined by the partner's income. Higher partner's income is associated with increased probability of finding a job during parental leave compared to household with no or very low income (less than half the average salary in gross terms)<sup>20</sup>. Only the highest levels of income appear to have no or even slightly negative impact on the employment probability and the timing of (re)entry into the labour market.

**Overall, the probability of being employed decreases with an increasing number of children.** However, this relation does not appear to be significant no matter the number of children and for mothers in all age groups (Technical appendix: Table 10). Moreover, a significant and strong negative impact on the probability of being employed is observed if a multiple birth occurs.

**Being a single mother negatively influences the probability that such parent can (re)enter into employment.** Yet, the negative effect is found only in case of permanent contracts. Significant barriers to full-time employment exist especially for mothers without partners, since lack of formal affordable childcare facilities persists in some regions.

**Informal childcare provided by grandparents may improve employment prospects of mothers.** It may help especially mothers with more children or no affordable childcare facilities at their disposal. The number of grandparents (serving as a proxy for informal, but also formal childcare arrangements) increases the probability of being employed for mothers by up to 5 p.p. The positive impact seems to be slightly stronger for more flexible contractual work compared to permanent work contracts.

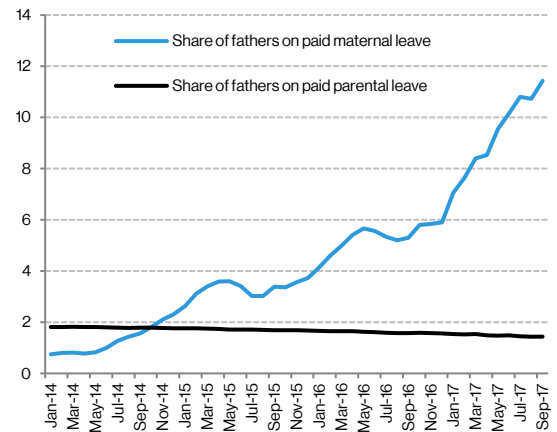
**Policies reducing the opportunity cost of childbearing may help mothers facilitate (re)entry into the labour market.** Lacking childcare capacities create another barrier to employment especially in larger cities. These typically offer better job opportunities for mothers. Another set of policies should promote more intensive involvement of fathers in home childcare through paid paternal leave. It should be noted that Slovakia lags significantly behind the best performing countries (for example Germany, Iceland and Sweden, see Adema et al., 2014).

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<sup>19</sup> Temporary part-time or full-time employment (*dohoda o pracovnej činnosti* or *dohoda o vykonaní práce*).

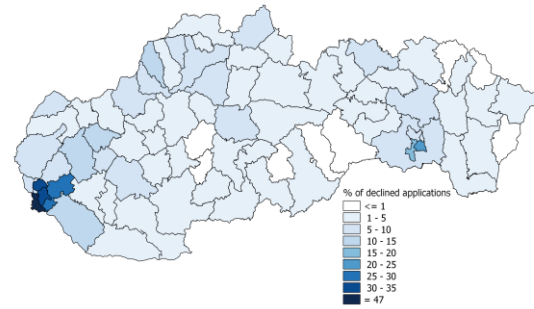
<sup>20</sup> Less than half the average salary in gross terms, which roughly coincides with income below the poverty line (60 per cent of median income).

**Figure 19: Men's participation on parental leave (% of all beneficiaries)**



Source: IFP based on administrative data

**Figure 20: Lack of capacities in Slovak kindergartens (declined applications as % of total enrolments)**



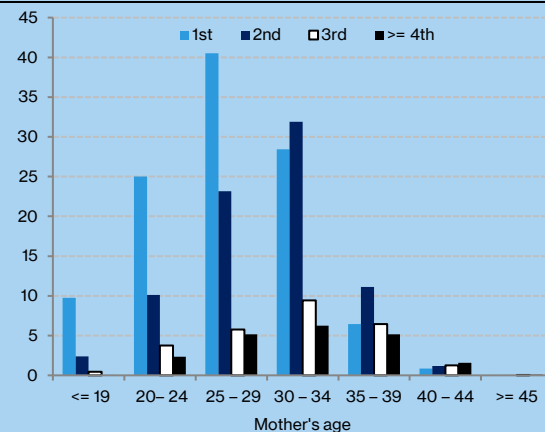
Source: CVTI SR

### BOX 1: What are the determinants of maternal employment?

Using a cross-sectional logit and tobit regressions we analyse factors that may influence employment of mothers (the probability and the timing of entry or return) between the age of 20 and 40 during or shortly after the standard length of paid parental leave:

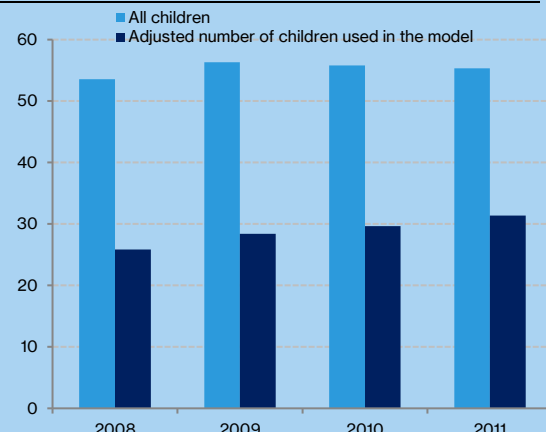
- We combine data from different administrative sources that contain information about:
  - family relationships (children, parents, grandparents) with birthdates (Registry of Population, Ministry of Interior);
  - employment status, labour incomes and pensions (Slovak Insurance Agency database);
  - unemployment status (Registry of Jobseekers, Central Office of Labour, Social Affairs and Family);
  - university studies (Central Registry of Students, Ministry of Education);
  - health insurance as a proxy for emigration (Central Registry of Insured Persons, Health Care Surveillance Authority).
- The period of interest starts with a birth of the youngest child from 2008 to 2011. That allows us to investigate the standard length of paid parental leave (three years after childbirth). Observations are dropped in case of another birth taking place within the aforementioned three-year period.

**Figure 21: Number of children by mother's age and birth order (thousands, children born from 2008 to 2011)**



Source: IFP based on administrative data

**Figure 22: Number of children – real vs. adjusted for the model (thousands, mothers aged 20 to 40 years)**



Source: IFP based on administrative data

- The total number of observations is adjusted for by dropping mothers living abroad, self-employed (as a more specific form of employment), mothers eligible for longer paid leave (e.g. sick child), students, pensioners (e.g. disability) and cases where the mother or the child died prematurely.
- **Employment** is measured as a first record of employment in the administrative data during paid leave or within one year after the three-year long paid leave period ended. In order to be included in the analysis, a woman must be hired and effectively work for at least two consecutive months.
- Moreover, **two types of contracts** are included in the sample. Permanent work contracts can be seen as a proxy for full-time employment, contractual work represents a more flexible form of work arrangement.
- The **speed of (re)entry into employment** is then calculated as the difference between two dates – the date of childbirth and the date of the first record of employment in the data.
- **Work experience** in years is based on employment history (employment is counted when it lasts at least 6 months each year) available from 2004 in the Slovak Insurance Agency database.
- **Unemployment prior to birth** is coded as a dummy variable and it indicates whether a mother was unemployed for at least one day during the year preceding childbirth.
- The variable coding **educational level** is derived from the data on obtained university degrees (undergraduate, graduate and postgraduate) recorded in the Central Registry of Students.
- The Registry of Population includes information about family relations, so it is possible to link children with their **parents** and **grandparents**:
  - **Number of living grandparents** is coded as a dummy variable equal to one if at least one grandparent on both parents' sides is alive.
  - An information about the **father of a child** can be used as a proxy for the mother's husband/partner to calculate the family income.
  - The marital status (single, divorced or widowed) is used to create a dummy variable indicating a **single mother**. However, it is possible to obtain only actual marital statuses valid to the date of data export in 2016.
  - Other factors controlled for are **woman's age at childbirth**, **number of children** (birth order) and number of children born at the same time (coded as a dummy variable equal to one if a **multiple birth** occurs).
- **Family income** consists only of the partner's labour income or pension benefit, since no data for social benefits were available for the purpose of this study. **Mother's wage** represents her labour income during the year preceding childbirth. Both variables are calculated as a ratio to the national average wage for a given year.



**Table 1: Determinants of employment during or shortly after paid parental leave**

	Probability of employment (p.p.)		Number of days until the employment	
	Permanent + contractual	Permanent	Permanent + contractual	Permanent
<b>Mother's age at birth</b>	-8.5***	-0.6***	1.4	0.7
<b>Number of children (birth order)</b>				
1 <sup>st</sup>				
2 <sup>nd</sup>	5.7***	5.7***	-15.6	-19.2
3 <sup>rd</sup>	2.3	3.2**	-32.4*	-25.0
>= 4 <sup>th</sup>	-10.4***	-8.2***	-39.5	-26.4
<b>Work experience</b>				
Impact of one additional year of experience on employment	4.8***	5.2***	-6.9**	-13.3***
<b>Education</b>				
No university education (baseline)				
University education	12.2***	13.2***	-48.9***	-51.7***
<b>Unemployment prior to birth</b>				
No (baseline)				
Yes	-7.6***	-12.1***	12.5	33.9
<b>Mother's wage prior to birth (multiple of average wage)</b>				
No labour income (baseline)				
0 – 0.5 x	8.6***	7.9***	-47.4***	-51.7***
0.5 – 1 x	22.1***	21.0***	-142.8***	-154.8***
1 – 1.5 x	32.2***	31.7***	-276.8***	-276.2***
1.5 – 2 x	39.9***	40.6***	-376.2***	-383.9***
> 2 x	48.7***	51.8***	-481.2***	-508.5***
<b>Family income during parental leave (multiple of average wage)</b>				
No labour income (baseline)				
0 – 0.5 x	1.6	1.6	17.6	17.9
0.5 – 1 x	3.9***	3.7***	44.9***	40.7**
1 – 1.5 x	5.9***	5.7***	68.3***	56.0***
1.5 – 2 x	7.5***	7.3***	35.7	16.1
> 2 x	9.7***	9.7***	42.5**	27.3
<b>Marital status</b>				
Married (baseline)				
Single/divorced/widowed	0.1	-2.3**	-21.0*	-10.0
<b>At least one grandparent on both father's and mother's side</b>				
No (baseline)				
Yes	4.7***	3.9***	23.2*	20.3
<b>Multiple birth</b>				
No (baseline)				
Yes	-12.8***	-10.6***	60.9*	73.2**
<b>N</b>				
(5% sample from the population)	11,282	11,282	6,079	5,105

Note: \*\*\* - statistically significant at the 1% level; \*\* - statistically significant at the 5% level; \* - statistically significant at the 10% level



## 4 Is There Gender Discrimination in the Recruiting Process?

*In general, the results from a field experiment in Slovakia do not show preferential treatment of any gender in the recruiting process, but there are some occupation- and region-specific observations. Females appear to be treated unfavourably when applying for jobs typically requiring lower educational background. Surprisingly, the data indicate possible unfavourable treatment of females in the capital, but not in Eastern Slovakia. No difference is found for jobs requiring tertiary education. The results also do not prove discrimination against applicants within specific age cohorts. Moreover, in general, women returning to the labour market after maternity leave do not appear to be treated unfavourably, at least in the early stages of the recruiting process.*

**A number of studies prove discrimination of subjects based on their ethnical background or race when applying for a job** (Riach and Rich, 1991; Bertrand and Mullainathan, 2004; Bartoš et al., 2016). A field experiment conducted in Slovakia shows that Roma applicants are discriminated against in the recruitment process (Machlica et al., 2014). **In general, gender discrimination is still present and women may encounter unfair treatment more frequently than men in hiring** (Riach and Rich, 1987; Neumark et al., 1996; Petit, 2006). Also, young heterosexual women are found to be penalized more frequently because of their higher expected probability of going on parental leave, compared to lesbian women (Baert, 2014).

**However, unequal treatment based on gender can be seen as an occupation-specific effect and not a general trend.** Riach and Rich (2006) show that while male participants are discriminated against when applying for a female dominated job (secretary), females are unequally treated within a male dominated occupation (engineer). They also find that males are discriminated against even in mixed occupations where none of the genders dominated on the total employment (trainee chartered accountant, computer analyst programmer). These results are to some extent replicated in Booth and Leigh (2010), but they focus only on strongly female dominated occupations. Statistically significant rates of unequal treatment of men are found only for occupations where females account for more than 80 per cent of all employees in the sector. The results are inconclusive for mixed occupations.

**Our field experiment** based on Machlica et al. (2014) assesses discrimination based on gender in Slovakia. In total, 1 820 applications were sent in response to 732 different job advertisements posted on the largest online job portal in Slovakia<sup>21</sup>. The cumulative response rate, which is defined as the proportion of all responses received from all of the employers to the total number of sent applications, was equal to 37.7 per cent. In other words, 686 responses were recorded. Out of these, 543 were invitations for interviews, hence, the total call-back rate was equal to 29.8 per cent.

**Overall, men are more likely to receive an answer of any type and to be invited for an interview. However, this difference is not statistically significant.** Out of 732 applications, the males' cumulative call-back rate equals to 31.6 per cent while the females' cumulative call-back rate equals to 28.7 per cent (out of 1 088 applications)<sup>22</sup>.

**The comparison by region shows that females are significantly less likely to be invited for an interview in the capital city. The data for Eastern Slovakia do not indicate unequal treatment.** In the capital city, the actual females' call-back rate amounts to 29.2 per cent while the males' call-back rate is greater by 6.3 p.p., i.e. 35.5 per cent. However, this effect size is only small in magnitude. Interestingly enough, no evidence of preferential treatment based on gender is found in Eastern Slovakia.

<sup>21</sup> [www.profesia.sk](http://www.profesia.sk)

<sup>22</sup> p-value on the difference is equal to 0.188.

**Table 2: Call-back rates by region**

Region	Call-back rate Males (%)	Call-back rate Females (%)	Difference (3)-(2)	Cohen's d
Bratislava	35.5 (n=400)	29.2 (n=600)	-6.3 p.p. (0.035)	0.14
Eastern Slovakia	26.8 (n=332)	28.1 (n=488)	1.3 p.p. (0.691)	0.03
Whole country	31.6 (n=732)	28.7 (n=1 088)	-2.9 p.p. (0.188)	0.06

Note: Column (4) - value in the parentheses stands for the non-parametric Mann-Whitney p-value. Column (5) - Cohen's d calculated as the difference in means divided by pooled standard deviation.

The overall difference between the male and the female call-back rate is driven entirely by a single job type: machine operator. Data for other occupations do not provide evidence of different treatment based on gender. While the differences within all the other occupations are not statistically significant, the result for the occupation machine operator indicates that females are discriminated against in the recruiting process. Females' call-back rate equals only to 41.3 per cent while the corresponding males' rate equals to 53 per cent, which is a difference of almost 12 p.p.

In other words, a female applicant is by 20 per cent less likely to be invited for an interview than her male counterpart. Since it is a male dominated job type, this corroborated the result observed in Riach and Rich (2006). However, also in this case the difference still implies only a small effect size.

**Table 3: Call-back rates by occupation type**

Occupation	Call-back rate Males (%)	Call-back rate Females (%)	Difference (3)-(2)	Cohen's d
Shop assistant	31.5 (n=200)	30.3 (n=300)	-1.2 p.p. (0.782)	0.03
Machine operator	53 (n=200)	41.3 (n=300)	-11.7 p.p. (0.010)	0.23
Administrative clerk	9.1 (n=132)	11.7 (n=188)	2.6 p.p. (0.457)	0.08
Sales representative	25 (n=200)	25 (n=300)	0 p.p. (1)	0

Note: Column (4) - value in the parentheses stands for the non-parametric Mann-Whitney p-value. Column (5) - Cohen's d calculated as the difference in means divided by pooled standard deviation.

Further, we do not find robust evidence for women being discriminated against for taking parental leave or returning to the labour market. As for the older cohort of 42 years old applicants, the males' call-back rate amounts to 30.1 per cent while the females' call-back rate is equal to 27.9 per cent, the difference is not statistically significant. As for the younger cohort, it consists of three different types of individuals: a 31 years old male, a 31 years old female and a 34 years old female returning to the labour market after parental leave. The results show that the males' call-back rate is 33.1 per cent while the females' call-back rate is only 29.1 per cent. Yet, the 4 p.p. difference is not statistically significant. Moreover, none of the pairwise comparisons within this cohort indicates significant differences<sup>23</sup>.

**Table 4: Call-back rates by age cohorts**

Occupation	Call-back rate Males (%)	Call-back rate Females (%)	Difference (3)-(2)	Cohen's d
Older cohort	30.1 (n=376)	27.9 (n=376)	-2.1 p.p. (0.521)	0.05
Younger cohort	33.1 (n=356)	29.1 (n=712)	-4.1 p.p. (0.173)	0.09

Note: Column (4) - value in the parentheses stands for the non-parametric Mann-Whitney p-value. Column (5) - Cohen's d calculated as the difference in means divided by pooled standard deviation.

<sup>23</sup> 31 years old female and male – p-value is equal to 0.421. 31 years old female and 34 years old female – p-value is equal to 0.458. 31 years old male and 34 years old female – p-value is equal to 0.122.

## **BOX 2: Is there gender discrimination in the recruiting process?**

This field experiment investigating gender discrimination in the recruiting process was conducted between July 2016 and March 2017. In total, we created 40 different fictitious applicant identities that were responding to matching job advertisements posted online on the job market.

Afterwards, the **response rates** and the **call-back rates**<sup>24</sup> were compared in order to investigate whether these groups actually encountered similar or different treatment in the recruiting process. Since the qualifications of the candidates are the same, the gender should not really be the decisive factor. On average, we would expect equal treatment and thus no difference in the response or call-back rates. Further discussion of advantages and disadvantages of this particular design can be found in Riach and Rich (2006).

**We summarize the results using a logit model with odds ratios (Table 4). The results confirm that the gender of the applicant is not a significant predictor of the probability whether an individual is invited for an interview.** None of the specifications indicate statistical significance of this variable. Hence, in reality, we expect to find one successful male applicant for every successful female applicant.

**However, the gender specific effect is present among the machine operator applicants.** Within this group, the odds of receiving a call-back for an interview is more than two times greater for males than females. In general, the odds of success differ across occupations significantly with machine operator being the most successful. The variable capital is significant which implies higher chances of a success in the region of the capital city. Chance of a success for a man in the capital is 1.4 higher than the chance for a woman.

**Moreover, the results also indicate that the odds of receiving a call-back decrease over time.** A smaller sample is analysed using one additional variable workdays, which stands for the number of days between sending the application and receiving an answer of any type. The sample size is restricted because only observations receiving an answer could be included in this regression. The odds of receiving a positive response decrease with each additional day.

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<sup>24</sup> While the response rate accounts for all of the answers received by the fictitious applicants, the call-back rate presents only the ratio of all positive outcomes to the total number of all applications sent.

**Table 5: Estimated logit model, odds ratios**

Dependent variable: Call-back	(1)	(2)	(3)	(4)	(5)	(6)
Male	1.147 (0.119)	0.755 (0.285)	1.139 (0.183)	0.938 (0.150)	0.518 (0.231)	0.553 (0.387)
Shop assistant		<b>3.285***</b> (0.852)			<b>3.536***</b> (0.931)	<b>3.218***</b> (1.242)
Machine operator		<b>5.316***</b> (1.358)			<b>5.733***</b> (1.488)	<b>12.102***</b> (5.828)
Sales representative		<b>2.515***</b> (0.662)			<b>2.704***</b> (0.722)	<b>4.787***</b> (2.005)
Male*Shop assistant		1.400 (0.497)			1.565 (0.678)	1.555 (0.977)
Male*Machine operator		<b>2.121*</b> (0.892)			<b>2.429**</b> (1.043)	4.390 (4.189)
Male*Sales representative		1.325 (0.574)			1.471 (0.646)	1.056 (0.695)
Age 34 years			0.885 (0.146)		0.879 (0.149)	0.585 (0.191)
Age 42 years			0.890 (0.145)		0.932 (0.156)	1.057 (0.377)
Male*Age 42 years			0.974 (0.222)		0.916 (0.156)	1.050 (0.375)
Capital city				1.055 (0.142)	<b>1.277*</b> (0.180)	0.814 (0.236)
Male*Capital city				<b>1.424*</b> (0.300)	<b>1.994***</b> (0.349)	0.9998 (0.380)
Workdays						<b>0.900***</b> (0.014)
Baseline	<b>0.402***</b> (0.027)	<b>0.133***</b> (0.030)	<b>0.435***</b> (0.050)	<b>0.390***</b> (0.039)	<b>0.116***</b> (0.032)	<b>2.569**</b> (1.177)
Observations	1 820	1 820	1 820	1 820	1 820	686

## 5 Policy Recommendations

The main determinants causing low maternal employment during early years of a child's life are the governmental policy promoting long paid parental leave, the severe lack of childcare facilities and poorly incentivised flexible work arrangements.

Based on international evidence, smart public policy designs can indeed result in better labour market participation and higher income for families with children. This can be ensured while no harm is done to the children's development. Moreover, increased income tax revenue stemming from higher total employment compensates for costs of these policies and consequently imply only negligible overall fiscal burden. This study proposes the following policy recommendations within the defined problematic areas such as:

### *Support for formal childcare facilities*

- Increasing support for **building and extending quality and affordable childcare facilities** by municipalities for children aged 0 to 2 years based on regional needs<sup>25</sup>.
- **Improving financial incentives for parents promoting balance between work and childcare, in particular by providing childcare allowance additionally to the three-year amount of parental allowance.** The enhanced support would be aimed to help parents who decide to take up employment and place their children in childcare facilities, mostly in regional capitals<sup>26</sup>.

### *Design of paid parental leave policies*

- **Development of wider net of quality and affordable formal childcare would be complemented with introducing flexible paid parental allowance schemes.** Parents would be allowed to choose from several durations tracks of paid parental leave. The total cumulative nominal parental allowance would be the same no matter the chosen duration:
  - Eligibility for the parental allowance paid during periods of **1 year, 1.5 years and 2 years** of paid leave would be conditional on social security contributions prior to birth (this effectively comprises families eligible for the paid maternity leave).
  - Eligibility only for longer duration tracks would not be conditional. Hence, all families could choose from durations of **2 years or 2.5 years**, while being eligible for the same three-year amount of the parental allowance.
- **Introducing an indirect paternal quota for parental leave implicitly by shortening the eligibility for parental leave taken up by first parent.** The maximum duration of both maternity and parental benefit<sup>27</sup> allocated per parent would be shortened from 3 years to 2.5 years<sup>28</sup>. Three-years-long paid leave option would still be available, but only to families where a second parent<sup>29</sup> stays on parental leave for 6 months.

### *Incentives to use up part-time and flexible form of employment*

- **Incentivizing employers to increase maternal employment.** The support of part-time and flexible job opportunities together with childcare services provided by employers could be considered.

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<sup>25</sup> Calls for proposals for development of childcare facilities in both less and developed regions are open from October 2017 to June 2018.

<sup>26</sup> Nowadays, employed parents are entitled to childcare allowance, but the amount of the benefit is relatively low compared to the parental allowance (maximum amount of EUR 280 depending on the childcare expenditure compared to EUR 213.20). There is no incentive to apply for the allowance, if parents pay EUR 200 or less for the childcare facility, since they can receive the parental allowance instead.

<sup>27</sup> Some families may not be eligible for the paid maternity leave. Such parents would receive only parental allowance.

<sup>28</sup> A six-years-long parental allowance would not be affected in any way. Such support is currently offered for specific cases such families with a child with long-term unfavourable health condition.

<sup>29</sup> No changes would be introduced to the already existing legislative rules defining the eligibility for the maternity paid leave. The total cumulative nominal allowance would still be fixed per child.

*Support for disadvantaged families with children*

- **According to best practices in EU and OECD, considering the introduction of differentiated levels of a family tax credit for disadvantaged parents.** The level would be increased for parents with specific obstacles to raising children, such as parents of multiples, parents with a disability, parents caring for a child with a disability, etc.

*Higher transparency in wages to decrease gender pay gap*

- **Introducing simple smart tools that would increase transparency in hiring and wage bargaining practices.** Despite the implementation of compulsory indication of wage in job advertisement from 2018 in Slovakia, further measures should be considered. Online calculator for gender wage comparison and gender pay gap statistics may contribute to tackling unfair wage differences between genders.

*Quality and availability of data for public policy design and evaluation*

- **Collecting more detailed data that would enable better monitoring and evaluation of implementation of family and gender policies.** Such data should be collected for example on availability and use of childcare in regions and administrative labour market data for part-time contracts at economic sector/employer level.

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### BOX 3: Gender discrimination – technical details of the experimental setup

This field experiment investigating gender discrimination in the recruiting process was conducted between July 2016 and March 2017. In total, we created 40 different fictitious applicant identities that were responding to matching job advertisements posted online on the job market.

**In order to investigate whether there are differences in the call-back rates within Slovakia, two regions were included in the experiment.** Out of the 40 different fictitious applicants, the first half of them had their residence in Bratislava and these applicants responded only to offers posted within the area surrounding the capital city. Rest of the applicants had their permanent residence in smaller cities in the central part of Eastern Slovakia and these individuals were applying for job openings within the whole region of Eastern Slovakia.

In case of Eastern Slovakia, three cities were chosen as suitable places for applicants' residences: Humenné, Vranov nad Topľou, Michalovce. Moreover, any matching job vacancies in the predefined job categories posted within the Košice and Prešov regions were applied for. This was due to the fact, that while the job market in Bratislava evolved fast enough and large numbers of new postings appeared on the portal every day, the market in the other part of Slovakia was significantly slower. Therefore, we decided to incorporate two regions to ensure that large enough sample could be collected within a reasonable time.

**Four different job occupations were chosen as suitable for the experimental purposes and the applicants' resumes were adjusted to match the average particular job requirements.** The job categories used were shop assistant, machine operator (both requiring a high-school diploma), administrative clerk and sales representative (both typically requiring a university diploma). This particular choice was influenced mostly by the high total number of open job postings available online, which again allowed us to collect large enough sample. Some of the chosen categories could be defined as female dominated, more specifically the occupations shop assistant (with 74 per cent share of women) and administrative clerk (with almost 67 per cent share of females). The other two job types could be viewed as mixed occupations. For this reason, we intended to explore whether the presence of different treatment based on gender was correlated with a specific occupational type.

**Table 6: Proportions of workers who are women by occupational type (2016)**

Occupation	Men	Women	Sum	Share of women (%)
Sales representative	17 767	26 278	44 045	60
Administrative clerk	53 588	106 521	160 109	67
Shop assistant	51 217	148 321	199 538	74
Machine operator	66 889	47 562	114 451	42
Overall	1 380 393	1 191 230	2 571 623	46

Sources: LFS, IFP

**Applicants were also divided into two age cohorts.** The older age cohort consisted of individuals being 42 years old while the younger age cohort consisted of three individuals: a 31 years old male, a 31 years old woman and a 34 years old women returning to work after three years long parental leave. It can be seen that while the male employment rate follows the general trend observed in the EU, the female employment rate indicates that women behave differently than their average EU counterparts. More precisely, while women in their thirties participate significantly less on the employment, the trend is reverted later in their forties where it can be seen that the participation is even greater than the EU average. Therefore, we investigated whether these observations were possibly driven by

discrimination against young women expected to go on parental leave or returning to the job market after parental leave (Figure 2).

It should be also noted that this experiment tested for the gender discrimination in the recruiting process only with respect to the majority population in Slovakia. Hence, all of the personal characteristics such as names and addresses were matched to mirror average Slovak male or female applicants.

When a suitable job posting matching all of the personal characteristics stated in the resume appeared on the portal, the first applicant responded through the official site using the predefined response template. Then, we waited for two days with the second application and two more if the younger age cohort was being investigated. This time lag was incorporated to avoid sending two or three almost identical resumes within a very short period of time, which could possibly raise suspicion among employers. The order in which the applicants responded to new postings was rotating to ensure that none of the applicants got more offers just because he or she was always faster than the other corresponding fictitious applicants. Moreover, if we did not manage to send both resp. all three resumes in response to one posting, such observation was dropped from the sample altogether. We were collecting observations until we managed to send 50 resumes for every fictitious applicant. Note that due to the limited amount of offers within the occupation administrative clerk in Easter Slovakia, the original target could not be fulfilled.

Resumes were carefully matched so that any differences in the call-back rates could be directly attributed to the differences in sex. To be more precise, every resume included personal information such as name, address, age and e-mail contact. Although one could include a phone contact for higher call-back rates, including only e-mail contact exercised greater control over the experiment. In case of the 34 years old female, the resume included a specific statement that she has been on parental leave during the last three years. Although we know that female applicants are not required to reveal this particular information, we wanted to investigate whether unequal treatment occurs with respect to the return to job market. Therefore, we included this information directly to prevent creating confusion on the employers' end, hence, making sure that the signal gets through. Otherwise, the resumes controlled for qualifications, skills, educational background.

**Table 7: Probability of employment (p.p.) – permanent + contractual work**

```
. logit job1 c.age##c.age##i.child_rank exper educ unempl_t0 c.wage_t0##c.wage_t0 ///
c.family_income##c.family_income single grandparents multiple_birth i.child_yr if single != 99
```

```
Iteration 0: log likelihood = -7786.0434
Iteration 1: log likelihood = -6295.6684
Iteration 2: log likelihood = -6268.3893
Iteration 3: log likelihood = -6268.1925
Iteration 4: log likelihood = -6268.1925
```

```
Logistic regression                Number of obs   =    11,282
                                   LR chi2(24)      =    3035.70
                                   Prob > chi2       =     0.0000
Log likelihood = -6268.1925        Pseudo R2      =     0.1949
```

	job1	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]
	age	-.3098665	.0932514	-3.32	0.001	-.492636 - .1270971
	c.age#c.age	.0038611	.0016479	2.34	0.019	.0006312 .0070909
	child_rank					
	2	-7.869003	1.841689	-4.27	0.000	-11.47865 -4.259359
	3	-17.16028	2.878377	-5.96	0.000	-22.8018 -11.51877
	4	-15.37365	5.326466	-2.89	0.004	-25.81333 -4.933971
	child_rank#c.age					
	2	.5122779	.1291215	3.97	0.000	.2592044 .7653514
	3	1.065964	.1913587	5.57	0.000	.6909084 1.441021
	4	.7969082	.3353311	2.38	0.017	.1396712 1.454145
	child_rank#c.age#c.age					
	2	-.0077869	.002232	-3.49	0.000	-.0121615 -.0034123
	3	-.0159238	.0031506	-5.05	0.000	-.0220989 -.0097487
	4	-.0099365	.0052361	-1.90	0.058	-.0201992 .0003261
	exper	.2562213	.015211	16.84	0.000	.2264083 .2860343
	educ	.6506376	.0629825	10.33	0.000	.5271941 .7740811
	unempl_t0	-.4058681	.0605025	-6.71	0.000	-.5244509 -.2872853
	wage_t0	1.557725	.0868274	17.94	0.000	1.387547 1.727904
	c.wage_t0#c.wage_t0	-.1725111	.0153309	-11.25	0.000	-.2025591 -.1424631
	Family_income	.3079444	.0445986	6.90	0.000	.2205329 .395356
	c.family_income#c.family_income	-.0463698	.0066849	-6.94	0.000	-.059472 -.0332676
	single	.0048344	.0525988	0.09	0.927	-.0982573 .1079262
	grandparents	.2456172	.0563947	4.36	0.000	.1350856 .3561487
	multiple_birth	-.6796417	.1527413	-4.45	0.000	-.9790091 -.3802743
	child_yr					
	2009	-.0331307	.0628318	-0.53	0.598	-.1562787 .0900173
	2010	-.0719173	.0633949	-1.13	0.257	-.196169 .0523343
	2011	-.1913825	.0641643	-2.98	0.003	-.3171422 -.0656228
	_cons	4.333987	1.293855	3.35	0.001	1.798078 6.869897

. margins, dydx(\*)

Average marginal effects                      Number of obs        =        11,282  
Model VCE        : OIM

Expression    : Pr(job1), predict()  
dy/dx w.r. t. : age 2.child\_rank 3.child\_rank 4.child\_rank exper educ unempl\_t0 wage\_t0 family\_income  
                 single grandparents multiple\_birth 2009.child\_yr 2010.child\_yr 2011.child\_yr

	Delta-method					[95% Conf. Interval]	
	dy/dx	Std. Err.	z	P> z			
age	-.0085408	.0011772	-7.26	0.000	-.010848	-.0062335	
child_rank							
2	.0570285	.0112783	5.06	0.000	.0349234	.0791335	
3	.0230956	.0149952	1.54	0.124	-.0062946	.0524857	
4	-.1046099	.0212181	-4.93	0.000	-.1461967	-.0630231	
exper	.048178	.0027158	17.74	0.000	.0428551	.0535009	
educ	.1223413	.0116555	10.50	0.000	.099497	.1451856	
unempl_t0	-.0763165	.011288	-6.76	0.000	-.0984405	-.0541926	
wage_t0	.2751393	.0147271	18.68	0.000	.2462747	.3040038	
family_income	.0456732	.0069359	6.59	0.000	.032079	.0592674	
single	.000909	.0098903	0.09	0.927	-.0184756	.0202937	
grandparents	.0465269	.0107256	4.34	0.000	.0255051	.0675487	
multiple_birth	-.127795	.0286353	-4.46	0.000	-.1839192	-.0716707	
child_yr							
2009	-.0062094	.0117743	-0.53	0.598	-.0292866	.0168679	
2010	-.0134889	.0118839	-1.14	0.256	-.0367809	.0098032	
2011	-.0359513	.0120173	-2.99	0.003	-.0595048	-.0123978	

Note: dy/dx for factor levels is the discrete change from the base level.

**Table 8: Probability of employment (p.p.) – permanent work**

```
. logit job2 c.age#c.age#c.i.child_rank exper educ unempl_t0 c.wage_t0#c.wage_t0 ///
c.family_income#c.family_income single grandparents multiple_birth i.child_yr if single != 99
```

```
Iteration 0: log likelihood = -7769.0796
Iteration 1: log likelihood = -5982.5046
Iteration 2: log likelihood = -5965.8147
Iteration 3: log likelihood = -5965.3064
Iteration 4: log likelihood = -5965.3042
Iteration 5: log likelihood = -5965.3042
```

```
Logistic regression           Number of obs   =    11,282
                             LR chi2(24)         =    3607.55
                             Prob > chi2          =     0.0000
Log likelihood = -5965.3042   Pseudo R2       =     0.2322
```

job2	Coef.	Std. Err.	z	P> z	[95% Conf. Interval]	
age	-.3149096	.0978612	-3.22	0.001	-.506714	-.1231051
c.age#c.age	.004326	.0017161	2.52	0.012	.0009626	.0076895
child_rank						
2	-9.08064	1.990746	-4.56	0.000	-12.98243	-5.178849
3	-10.76766	3.001052	-3.59	0.000	-16.64962	-4.885711
4	-21.20703	7.236995	-2.93	0.003	-35.39128	-7.022775
child_rank#c.age						
2	.6060955	.1379491	4.39	0.000	.3357204	.8764707
3	.6715526	.198919	3.38	0.001	.2816785	1.061427
4	1.157233	.4440606	2.61	0.009	.2868905	2.027576
child_rank#c.age#c.age						
2	-.0095288	.0023614	-4.04	0.000	-.0141571	-.0049004
3	-.0099905	.0032661	-3.06	0.002	-.0163919	-.0035891
4	-.0154439	.006774	-2.28	0.023	-.0287206	-.0021671
exper	.2927607	.0154598	18.94	0.000	.2624601	.3230612
educ	.7489166	.0615944	12.16	0.000	.6281938	.8696395
unempl_t0	-.685195	.068598	-9.99	0.000	-.8196446	-.5507453
wage_t0	1.546391	.0848137	18.23	0.000	1.380159	1.712623
c.wage_t0xc.wage_t0	-.1887905	.0177707	-10.62	0.000	-.2236204	-.1539606
family_income	.3171836	.0447622	7.09	0.000	.2294513	.4049159
c.family_income#c.family_income	-.0468174	.0067663	-6.92	0.000	-.0600791	-.0335557
single	-.1317438	.0551786	-2.39	0.017	-.2398919	-.0235957
grandparents	.2223819	.0595793	3.73	0.000	.1056086	.3391552
multiple_birth	-.6020971	.1580753	-3.81	0.000	-.911919	-.2922751
child_yr						
2009	-.0990496	.0646276	-1.53	0.125	-.2257173	.0276182
2010	-.1726176	.0655334	-2.63	0.008	-.3010606	-.0441745
2011	-.2686788	.0664802	-4.04	0.000	-.3989775	-.1383801
_cons	3.657292	1.368104	2.67	0.008	.9758577	6.338726

. margins, dydx(\*)

Average marginal effects                                      Number of obs       =       11,282  
 Model VCE        : OIM

Expression    : Pr(job2), predict()  
 dy/dx w.r. t. : age 2.child\_rank 3.child\_rank 4.child\_rank exper educ unempl\_t0 wage\_t0 family\_income  
                  single grandparents multiple\_birth 2009.child\_yr 2010.child\_yr 2011.child\_yr

	Delta-method					[95% Conf. Interval]	
	dy/dx	Std. Err.	z	P> z			
age	-.0060281	.0011812	-5.10	0.000	-.0083432	-.0037131	
child_rank							
2	.0571622	.0106529	5.37	0.000	.036283	.0780415	
3	.0319422	.0148599	2.15	0.032	.0028173	.0610671	
4	-.0821064	.0212818	-3.86	0.000	-.123818	-.0403948	
exper	.0516693	.0025639	20.15	0.000	.0466441	.0566944	
educ	.1321761	.0106265	12.44	0.000	.1113486	.1530037	
unempl_t0	-.1209299	.0119345	-10.13	0.000	-.144321	-.0975388	
wage_t0	.2508375	.0130304	19.25	0.000	.2252984	.2763767	
family_income	.0434592	.0063946	6.80	0.000	.030926	.0559924	
single	-.0232514	.0097307	-2.39	0.017	-.0423233	-.0041796	
grandparents	.0392127	.010471	3.74	0.000	.0186899	.0597356	
multiple_birth	-.106264	.027839	-3.82	0.000	-.1608275	-.0517005	
child_yr							
2009	-.0175371	.0114369	-1.53	0.125	-.0399529	.0048788	
2010	-.0304943	.0115587	-2.64	0.008	-.0531488	-.0078397	
2011	-.0473015	.0116501	-4.06	0.000	-.0701354	-.0244677	

Note: dy/dx for factor levels is the discrete change from the base level.



**Table 9: Number of days until the employment – permanent + contractual work**

```
. tobit duration_job1 age child.rank exper educ unempl_t0 i.wage_group i.family_income single ///
grandparents multiple if single != 99, ul
```

```
Tobit regression                               Number of obs   =    6,079
                                                LR chi2(20)    =   674.59
                                                Prob > chi2    =    0.0000
Log likelihood = -44607.059                    Pseudo R2      =    0.0075
```

duration_job1	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
age	1.418498	1.492827	0.95	0.342	-1.507975 4.344971
child_rank					
2	-15.59812	12.49212	-1.25	0.212	-40.08711 8.890868
3	-32.38374	18.50933	-1.75	0.080	-68.66861 3.901137
4	-39.45534	29.80411	-1.32	0.186	-97.882 18.97132
exper	-6.882366	3.179854	-2.16	0.030	-13.11601 -.6487213
educ	-48.91747	11.73671	-4.17	0.000	-71.9256 -25.90934
unempl_t0	12.50529	16.64611	0.75	0.453	-20.12699 45.13758
wage_group					
1	-47.35686	13.85352	-3.42	0.001	-74.51469 -20.19904
2	-142.7585	15.03675	-9.49	0.000	-172.2359 -113.2811
3	-276.812	20.48896	-13.51	0.000	-316.9777 -236.6464
4	-376.231	31.35436	-12.00	0.000	-437.6967 -314.7653
5	-481.2259	32.26388	-14.92	0.000	-544.4746 -417.9773
family_income					
1	17.56408	15.51241	1.13	0.258	-12.84575 47.97391
2	44.90606	16.58655	2.71	0.007	12.39052 77.4216
3	68.30234	18.58244	3.68	0.000	31.87415 104.7305
4	35.70479	22.63167	1.58	0.115	-8.661329 80.0709
5	42.54213	21.29632	2.00	0.046	.7937751 84.29048
single	-21.01737	11.99273	-1.75	0.080	-44.52737 2.492639
grandparents	23.18654	13.3137	1.74	0.082	-2.913053 49.28613
multiple_birth	60.93983	34.27503	1.78	0.075	-6.251414 128.1311
_cons	728.2452	43.70537	16.66	0.000	642.5672 813.9233
/sigma	373.9299	3.39318			367.278 380.5817

```
0 left-censored observations
6,074 uncensored observations
5 right-censored observations at duration_job >= 1130
```

**Table 10: Number of days until the employment – permanent work**

```
. tobit duration_job2 age child.rank exper educ unempl_t0 i.wage_group i.family_income single ///
grandparents multiple if single != 99, ul
```

```
Tobit regression                Number of obs    =    5,105
                                LR chi2(20)         =    710.13
                                Prob > chi2          =    0.0000
Log likelihood = -37422.211      Pseudo R2        =    0.0094
```

duration_job2	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
age	.7125857	1.644699	0.43	0.665	-2.511732 3.936903
child_rank					
2	-19.16624	13.41952	-1.43	0.153	-45.47428 7.14181
3	-25.0294	20.16552	-1.24	0.215	-64.5625 14.50371
4	-26.383	33.21713	-0.79	0.427	-91.50288 38.73689
exper	-13.30296	3.458355	-3.85	0.000	-20.08283 -6.523095
educ	-51.65002	12.18855	-4.24	0.000	-75.54482 -27.75522
unempl_t0	33.87613	20.60718	1.64	0.100	-6.522815 74.27507
wage_group					
1	-51.71172	15.72373	-3.29	0.001	-82.53699 -20.88644
2	-154.8313	16.19192	-9.56	0.000	-186.5744 -123.0881
3	-276.2276	21.37619	-12.92	0.000	-318.1342 -234.3211
4	-383.8986	32.0681	-11.97	0.000	-446.7659 -321.0313
5	-508.5235	33.55657	-15.15	0.000	-574.3088 -442.7382
family_income					
1	17.92289	17.2949	1.04	0.300	-15.98256 51.82833
2	40.69424	18.15338	2.24	0.025	5.105805 76.28268
3	55.96472	20.18844	2.77	0.006	16.38668 95.54275
4	16.07825	24.06752	0.67	0.504	-31.10444 63.26095
5	27.32087	22.46312	1.22	0.224	-16.71651 71.35826
single	-9.983147	13.25277	-0.75	0.451	-35.96429 15.998
grandparents	20.32465	14.53517	1.40	0.162	-8.170546 48.81985
multiple_birth	73.20102	36.11281	2.03	0.043	2.404355 143.9977
_cons	842.9444	48.83353	17.26	0.000	747.2097 938.6792
/sigma	370.6595	3.669417			363.4659 377.8531

```
0 left-censored observations
5,102 uncensored observations
3 right-censored observations at duration_tpp >= 1130
```

**Table 11: Interaction of mother's age and number of children**

margins, at(birth\_order=(1 2 3 4) age=(20 25 30 35 39))

	Delta-method		z	P> z	[95% Conf. Interval]	
	Margin	Std. Err.				
20y and 1st	.5692477	.0204649	27.82	0.000	.5291373	.6093582
20y and 2nd	.4332459	.030084	14.40	0.000	.3742823	.4922095
20y and 3rd	.3399339	.0556587	6.11	0.000	.2308448	.449023
20y and 4th	.0529258	.0469991	1.13	0.260	-.0391907	.1450424
25y and 1st	.4626411	.0089371	51.77	0.000	.4451248	.4801575
25y and 2nd	.4830931	.0105965	45.59	0.000	.4623243	.5038619
25y and 3rd	.4239822	.0234252	18.10	0.000	.3780697	.4698946
25y and 4th	.1785236	.0482421	3.70	0.000	.0839709	.2730763
30y and 1st	.3964968	.009694	40.90	0.000	.377497	.4154967
30y and 2nd	.4875412	.0075446	64.62	0.000	.472754	.5023284
30y and 3rd	.463091	.0147049	31.49	0.000	.4342699	.4919121
30y and 4th	.3332064	.0264437	12.60	0.000	.2813777	.3850351
35y and 1st	.3685673	.0150852	24.43	0.000	.3390009	.3981337
35y and 2nd	.4463234	.0095468	46.75	0.000	.4276121	.4650348
35y and 3rd	.4529975	.0125491	36.10	0.000	.4284017	.4775932
35y and 4th	.4320324	.0209411	20.63	0.000	.3909886	.4730763
39y and 1st	.3719826	.0324195	11.47	0.000	.3084415	.4355237
39y and 2nd	.382506	.022198	17.23	0.000	.3389988	.4260133
39y and 3rd	.409932	.0285571	14.35	0.000	.3539612	.4659028
39y and 4th	.4456011	.0388716	11.46	0.000	.3694142	.5217879