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Effects of Long Family Leaves on Single and Partnered Mothers' Labour Market Outcomes in Finland

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Abstract: One aim of family leaves is to help mothers combine paid work and childcare, yet longer leaves have been shown to weaken women's labour market positions. Moreover, longer leaves can have differential effects across population groups. This study compares the consequences of longer family leaves for single and partnered mothers' labour market outcomes as measured by unemployment and earnings. We use Finnish register data for 1989 to 2014 to interact mothers' partnership status with the accumulated family leave length. To consider selection into being a single mother, we compare estimates from OLS and FE models. The results indicate that longer leaves are positively associated with post-leave unemployment in both groups but more strongly among single mothers. Longer leaves are linked to similar lower annual earnings among both single and partnered mothers. We conclude that longer family leaves disproportionately disadvantage single mothers' employment chances, highlighting the heterogeneity of consequences. These disadvantages are not due to selection into single motherhood, suggesting potential discrimination or work-family reconciliation problems.

Keywords: single mothers, parental leave, family policy, unemployment, earnings, Finland

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INTRODUCTION

A growing body of literature on economic inequalities has shown that a gender earnings gap exists to women's detriment (Mandel & Semyonov, 2005) and that motherhood leads to disadvantages on the labour market, referred to as the motherhood penalty (Gangl & Ziefle, 2009). Addressing these issues, the Nordic countries implemented policies aimed at facilitating the combination of participating in paid work and having a family. Policies that support the employment of both parents, such as parental leave policies and public childcare, have indeed been associated with higher employment continuity and lower poverty rates among mothers (Maldonado & Nieuwenhuis, 2015; Stier, Lewin-Epstein, & Braun, 2001). However, research has suggested that the consequences of paid family leave[1] depend on the length of the leave, with extended labour market absence due to childcare leading to labour market disadvantages and lower employment rates for mothers (Evertsson & Duvander, 2011; Pettit & Hook, 2005; Stier et al., 2001). Thus, even under family-friendly policy regimes such as those in the Nordic countries, mothers benefit if they return to work sooner rather than later (Aisenbrey, Evertsson, & Grunow, 2009).

Despite prior observations of heterogeneous effects of longer family leaves, no research to date has examined whether single mothers are disproportionately affected. Single mothers, however, may be more strongly influenced by gendered inequalities in the labour market, as they are more likely to bear the responsibility of childcare alone, encounter various socioeconomic disadvantages and are more vulnerable to economic hardship (Härkönen, Lappalainen, & Jalovaara, 2016; Härtull, Cederström, & Saarela, 2017; Maldonado & Nieuwenhuis, 2015; Nieuwenhuis & Maldonado, 2018; Wong, Garfinkel, & McLanahan, 1993). Single mothers are the sole breadwinners of their families; therefore, their employment is critical to reduce their families' poverty risks and ensure their children's economic well-being and educational achievements (Kalil & Ziol-Guest, 2005).

Consequently, given that extended childcare leaves are associated with negative labour market outcomes for mothers and that single mothers often face socioeconomic disadvantages, does a longer childcare leave disproportionately disadvantage single mothers? To answer this question, we compare the labour market consequences for single and partnered mothers following longer labour market absences due to full-time care of their children. High-quality Finnish register data for 1987–2012, ordinary least squares (OLS) and individual fixed-effects (FE) regression models are used to examine long-term labour market consequences as measured by unemployment and earnings. These two measures capture different aspects of mothers' labour market position. Unemployment assesses the availability of paid work and the success of job seekers in the labour market and, as such, examines the potential bias in obtaining work. Earnings, on the other hand, encompasses earnings repercussions conditional on being gainfully employed. Our data also include detailed information on partnership status; single mothers are defined as (residential) mothers who are not in a coresidential partnership, and mothers are defined as partnered if they live with the child's father or another male partner. The results indicate heterogeneous penalties of longer leaves for unemployment but not for earnings net of employment status. Furthermore, we show that the disproportionate disadvantage of single mothers is not merely due to selection. We

[1] In the Finnish context, the family leaves available to mothers include maternity and parental leave as well as subsequent childcare leave (cash-for-care).

conclude that policy makers need to address conflicting policies and help disadvantaged families combine work and family more successfully.

This study contributes to the previous literature on leave consequences by shedding light on the vulnerable group of single mothers. Although the results from Finland cannot be directly generalised to other societies, they are relevant in a broader context. The results contribute to the discussion of social and gender equality by providing knowledge on how family policies can have heterogeneous consequences. If leave policies have the unintended consequence of benefiting or penalising some groups more than others, the idea of universality is lost, and disadvantaged groups may face more unfavourable conditions. In the case of single mothers, this may be reflected in the accumulation of disadvantages across the life course and across generations. Moreover, knowledge of the differential effects of spending a long time out of work contributes to the understanding of economic gender inequalities that affect women's lives.

FAMILY LEAVE EFFECTS ON (SINGLE) MOTHERS' LABOUR MARKET OUTCOMES

Research has shown that countries providing support for employed mothers demonstrate higher employment continuity (Stier et al., 2001), while motherhood penalties are the strongest in countries with fewer policies to support working mothers with young children (Gornick, Meyers, & Ross, 1998). While job-protected parental leave has been associated with positive employment outcomes for mothers, extended leave lengths have opposite effects. Although the definition of a long leave is relative and varies by context, extended leave lengths have been shown to reduce the employment of mothers with young children (Pettit & Hook, 2005), employment entry (Rønsen & Sundström, 2002), the chance of upward occupational mobility (Aisenbrey et al., 2009; Evertsson & Duvander, 2011), and post-leave wages (Evertsson, 2016; Ruhm, 1998).

Differential effects of long childcare leaves on women's employment have been found between rural and urban areas as well as between immigrant and native mothers (Giuliani & Duvander, 2017; Hardoy & Schøne, 2010). Furthermore, educational differences have been reported in Norway, where highly educated women encounter stronger short-term effects on their working hours and labour supply (Naz, 2004; Rønsen, 2009). Focusing on earnings, Drange and Rege (2013) found negative effects of long leaves beyond the years of childcare leave use, but only for lower-educated and low-earning women and until their children turned six or seven. Consequences, therefore, are not equal among all social groups (Hegewisch & Gornick, 2011); instead, more vulnerable groups might suffer greater employment and earnings consequences when taking longer family leaves, and yet no research to date has concentrated on the effects of long family leaves on single mothers' (un)employment or earnings.

THE FINNISH CONTEXT

FAMILY LEAVES IN FINLAND

Finland is a social-democratic welfare state that follows a universalistic approach and provides generous family leaves, which is reflected by the high employment rate of 71% for women (OECD, 2019a), with notably low proportions of women engaging in part-time work (OECD, 2019b) but much lower employment rates among mothers of young children (Eurostat, 2018). Many state policies, including strongly subsidised childcare and family leaves, are targeted at promoting social and gender equality, and overall, Finland is among the most gender-egalitarian nations in the world (The Global Gender Gap Report, 2018). The Finnish system offers maternity, paternity and parental leave as well as cash-for-care (CFC), overall supporting the home care of children under 3 years of age and often their older siblings.

Maternity and parental leave can be taken for approximately ten months (Salmi, Närvi, & Lammi-Taskula, 2018). The benefit is earnings-related, with a replacement rate of 90% for the first 56 days and 70% thereafter. However, very low annual earnings are replaced with a minimum flat rate, and very high earnings are staggered. Maternity leave is used by virtually all mothers (Salmi et al., 2018), and although parental leave can be divided between two parents as they please, almost all of parental leave is taken by mothers, with only two to three percent of fathers taking more than two months (Salmi et al., 2018). The CFC is a benefit that facilitates a comparatively long leave. In 1985, Finland was the first country to introduce this allowance, which is paid to parents whose children under the age of three are not in publicly provided day care. The policy was implemented alongside the establishment of the right to day care for all children under three. Based on the Employment Contracts Act, employed parents of children below three also enjoy, vis-à-vis the employer, the right to childcare leave and the security of being able to return to their jobs after their family leaves. The CFC benefit consists of a basic payment, a means-tested supplement, possible sibling additions, and municipality top-ups (Salmi et al., 2018; Sipilä & Korpinen, 1998). In January 2019, CFC averaged to €412 per recipient per month (Kela, 2019). Almost all families use this benefit; in 2016, 87% of eligible families had received it for at least some time (Salmi et al., 2018). Although parents using the benefit can divide childcare as they wish, it nearly always means that the mother is not in paid work and cares for the child full-time. Unlike maternity and parental leave, CFC use displays a strong educational gradient, with lower-educated mothers being by far the most likely to use the allowance for longer periods of time (Lammi-Taskula, 2017). Overall, Finland is characterised by strong support for mothers' employment. At the same time, however, CFC is a widely used benefit that contradicts most family policy aims in the Nordic countries by, in effect, discouraging parental employment.

SINGLE MOTHERS IN FINLAND

The proportion of single-parent families among all families with children has grown in many Western societies, including Finland (Härkönen et al., 2016). In 2016, almost 20% of all families with children were single-mother families (Statistics Finland, 2018). Arrangements for shared physical custody are rather rare (THL, 2019), and although Finland has a guaranteed child maintenance payment scheme, the payments are quite low (Hakovirta & Jokela, 2019). Most single-mother families today are a result of separation or divorce (Heuveline, Timberlake, &

Furstenberg, 2003), which is more likely among lower-educated individuals (Jalovaara, 2013). Additionally, childbearing outside of coresidential partnerships is much more common among lower-educated women (Jalovaara & Fasang, 2015). As a result, single mothers are, on average, lower educated than partnered mothers, and this difference has significantly increased over the past few decades in Finland (Härkönen et al., 2016). Based on this increasingly steep educational gradient as well as the growing differences in employment rates between mothers with high and low levels of education, Härkönen et al. (2016) observed a double disadvantage for single mothers in Finland. Given this double disadvantage for single mothers and that long leaves have negative consequences for mothers' labour market outcomes, single mothers might face an additional disadvantage: stronger negative consequences of family leaves. This scenario would be in line with the suggested triple bind of single parents: challenges in terms of resources, employment and policies (Nieuwenhuis & Maldonado, 2018).

WHY WOULD CONSEQUENCES FOR PARTNERED AND SINGLE MOTHERS DIFFER?

COMPOSITIONAL DIFFERENCES

Single and partnered mothers' employment is largely affected by the same factors, such as educational attainment, age, and the number and ages of children in the household (Destro & Brady, 2011; Härkönen et al., 2016). Older and more highly educated single mothers as well as single mothers with older and fewer children show higher employment rates and earnings capacities (Destro & Brady, 2011; Wong et al., 1993). Nevertheless, single and partnered mothers' circumstances differ. Since single mothers are the sole breadwinners, they should have higher incentives to be in the labour market (Gonzalez, 2004). Being the only carer in the family also implies that single mothers are more dependent on their access to affordable (public) childcare (Connelly & Kimmel, 2003; Destro & Brady, 2011; Misra, Moller, Strader, & Wemlinger, 2012) and are less flexible with respect to work times and distance. Single mothers' labour market supply is more elastic, which means it is more responsive to wage changes (Bargain, Orsini, & Peichl, 2014). An economic perspective suggests that higher wages lead to higher labour supply, yet single mothers are assumed to have higher reservation wages (Ross & Saunders, 1993). In other words, mothers are assumed to work only if the offered wages exceed their reservation wages, and their reservation wages can be affected, for example, by previous wages or benefits (Feldstein & Poterba, 1984). Thus, it has been suggested that generous social policies, especially those targeted at single parents, might increase disincentives for single mothers to work for pay; however, the evidence is mixed (Destro & Brady, 2011).

Being a single mother is temporary and not random; it is associated with a number of sociodemographic factors. Härkönen et al. (2016) showed that the increasing gap between partnered and single mothers' employment in Finland, as in many other countries, is due to a compositional change – a growing proportion of single mothers with low education levels. This supports the idea that selection into single motherhood based on human capital and other characteristics could be the root of employment disadvantages (Destro & Brady, 2011). One possibility is direct selection (i.e., reverse causality), in which, for instance, unemployment or financial difficulties increase the risk of separation (e.g., Jalovaara, 2013) and thus of being a single mother. Indirect selection, on the other hand, would refer to characteristics such as education or

initial labour market position influencing the likelihood of becoming or staying a single mother as well as leave length and labour market outcomes and thus explain the association between these factors. For example, mothers with an initially weaker labour market position may be more likely to be single mothers, more likely to use long leaves and face poorer labour market outcomes in terms of earnings and unemployment. *Consequently, single and partnered mothers' labour market consequences might differ due to compositional characteristics and selection into single motherhood.*

DIRECT VS. INDIRECT EFFECTS

Long family leaves can harm women's labour market positions directly through lost experience or indirectly, for example, through the encouragement of employer discrimination (Mandel & Semyonov, 2005). However, if partnered and single mothers take equally long family leaves, why would the consequences differ between them? The human capital theory suggests that the consequences should not differ (Mincer & Polachek, 1974). This perspective, also called skill depreciation theory, has been used widely in debates on why extended childcare leaves can have negative consequences for mother's employment and earnings (Evertsson & Duvander, 2011). Long disruption of employment, for example due to family leaves, results in atrophy and reduced social and human capital (Gangl & Ziefle, 2009; Giuliani & Duvander, 2017; Stier et al., 2001). These consequences mean that the longer women stay out of the labour market in favour of engaging in full-time childcare, the stronger the depreciation of their human capital will be (Aisenbrey et al., 2009). While it has been argued that the job security accompanying parental leave should prevent firm-specific human capital loss and lead to better career chances (Akgunduz & Plantenga, 2013; Ruhm, 1998), the majority of findings suggest negative consequences of parental leave take-up for careers and earnings (Evertsson, 2016; Stier et al., 2001). Skill deterioration, hence, should increase with longer leave length but should not depend on partnership status. *Therefore, according to the human capital theory, single mothers and partnered mothers who take longer family leaves should face the same negative consequences for both labour market outcomes, i.e., unemployment and earnings.*

The assumption of equal skill deterioration has been questioned in a number of studies. Contradicting human capital theory, a study focusing on Germany, Sweden and the US found differences in occupational mobility with respect to different types of time out (Evertsson, Grunow, & Aisenbrey, 2016). Similarly, Albrecht et al. (1999) found differential effects on wages based on different types of employment disruption in Sweden. Furthermore, it is reasonable to expect that lost experience matters more in some occupations than others. Empirical research, hence, challenges the universality assumption of the human capital theory. Instead, other theories suggest heterogeneous effects for employment consequences. There are at least two processes through which single mothers may face stronger negative consequences of longer leaves than partnered mothers.

First, greater negative effects could be due to choices that single mothers have to make. Women often reduce working hours following the birth of their first child and prefer a stable, familiar work environment over career advancement, but they might change employers based on job security, flexibility and family-friendliness (Aisenbrey et al., 2009; Gangl & Ziefle, 2009). As

single mothers face greater work-family reconciliation issues, they might have to compromise career ambitions more than partnered mothers to take care of their child(ren) (Harkness, 2016). Being the only caretaker in the family, single mothers might encounter more limits in terms of working hours, distance to a job, job-related travel or shift work, which leads to negative labour market outcomes. *Consequently, work-family reconciliation problems for single mothers after taking family leave might force them into lower-paid jobs or even hamper their opportunities to accept certain job offers.*

Another argument is that policies, such as parental leave and CFC, that lead to extended periods of time out of work can indirectly lead to employer discrimination (Mandel & Semyonov, 2005). Such discrimination involves employers hesitating to employ or promote women, especially in top positions, if they might go on family leave for long periods of time (Aisenbrey et al., 2009; Gangl & Ziefle, 2009; Stafford & Sundström, 1996). This is in line with the assumption that time out of employment signals lower work commitment and productivity to employers (Albrecht et al., 1999; Evertsson et al., 2016; Gangl, 2006). Despite protecting women's rights to return to their jobs and increasing labour market attachment, leave and care policies might reduce women's career opportunities when employers practice discrimination due to their concerns about extended leave periods. If employers discriminate against mothers because they are concerned about a loss of productivity due to extended leaves, it is sensible to assume that single mothers face even higher levels of discrimination (Douthitt, Zick, & McCullough, 1990). Single mothers not only are unable to share any leave uptake with a partner but are often also the only parent that cares for the child when the child cannot attend childcare or school (during illness or vacation periods, for instance). *Hence, statistical discrimination would lead single mothers to face greater labour market consequences in terms of unemployment and earnings following longer leaves, as employers may fear greater loss of productivity from single mothers.*

DATA AND METHODS

DATA

We use Finnish administrative total population data for 1989 to 2014 to analyse labour market outcomes for mothers after taking family leaves. In these data, various administrative registers are linked by Statistics Finland, and include full histories of co-residential partnerships regardless of marital status (for rules of inference of cohabitations, see Jalovaara & Kulu, 2018), histories of childbearing and completed educational degrees as well as yearly data on income and employment. We focus on Finnish-born women who had their first child between 1991 and 2005, which enables a follow-up of at least 10 years. We include only women who were at least 18 years of age at first birth. The follow-up starts two years prior to the first birth to capture pre-birth labour market positions; an earlier start was not chosen because the time of entry into the labour market varies greatly by educational background and because partnership status prior to and after childbirth has different meanings. Observations are censored for women who had emigrated, had a twin birth, or were age 60 or above. The analyses cover ca. 300 thousand mothers and more than 5.7 million person-years at risk.

KEY MEASURES

Two dependent variables are used to assess labour market outcomes for mothers. First, *unemployment days* are introduced as a yearly updated continuous variable. Data on unemployment originate from the Ministry of Labour's registers and are available for persons who have registered as job seekers (which is a prerequisite for receiving unemployment benefits); the data are linked from the Finnish Longitudinal Employer-Employee Data (FLEED). We calculate annual unemployment days through the start and end dates of unemployment spells in a given year, cumulating the days of multiple spells in a year. Hence, unemployment days are measured relative to the entire calendar year. Secondly, *yearly earnings* are used to assess changes in earnings related to long leaves. This variable is based on wage and salary earnings and entrepreneurial income liable to state taxation. Earnings are kept at absolute euro amounts (deflated to 2011 values) to enable a more straightforward interpretation of the results. We also experimented with models using logged earnings, but the conclusions remained substantively the same. We focus on these two outcomes, as they measure different dimensions of mothers' labour market positions. Unemployment captures the demand and supply of work; as unemployed individuals were registered job seekers, they were searching for jobs, but unsuccessfully due to a lack of offers or maybe a lack of suitable positions. Notably, however, unemployed job seekers are not allowed to turn down a job offer without an acceptable reason; otherwise, they face temporary or permanent cuts to their unemployment benefit (Kela, 2017). Thus, this measure is assumed to signal an unstable, precarious and potentially fractured employment history of the mother, and even more so as the length or frequency of unemployment increases. Earnings net of employment status capture another dimension. Even if an individual is employed, earnings may increase or decrease by different amounts, or revenue might be too low to allow for a sufficient standard of living.

The key independent variables are partnership status and family leave length: first, partnership status is measured as a time-varying binary variable capturing whether a mother residing with child(ren) was in a coresidential partnership in a given year. As this measure is independent of whether the partner was the child's father, it also captures re-partnering. This is necessary because single parenthood is not an absorbing state, and single mothers re-partner at a high rate, for instance (Jalovaara & Andersson, 2018). Secondly, the time a mother spent on family leave is captured as a time-varying measure of accumulated leave length, which is lagged by one year. A mother is categorised as having been on leave if she was eligible with regard to the youngest child's age (under 3 years of age) and received at least €4000 in parental leave or CFC payments during that year. CFC consists of a basic payment of €338 per month (Salmi et al., 2018), which would add up to approximately €4000 if received for a whole year. Every year that a mother received these benefits was then accumulated over time.

Control variables include time-varying measures of age and age squared; the period, number of children, region of residence (urban, semi-urban and rural); and a time-varying measure of the age of the youngest child (see Table 1). Education measures the highest degree attained by the end of the previous year and is categorised according to the ISCED levels as basic, upper secondary, lower tertiary, or higher tertiary. A mother's main economic activity is included in the models on earnings, indicating whether a woman was employed, unemployed, a student, a disability pensioner or otherwise outside the labour force. Economic activity is an annual measure

that captures the situation during the last week of the year. Finally, we include a binary variable measuring whether a mother had been on family leave in a given year.

ANALYTICAL STRATEGY

To estimate the labour market outcomes for single and partnered mothers across different family leave lengths, we estimate non-FE and FE OLS models for the two outcome variables. In the FE models, intra-individual comparisons are made at different time points over the individuals' life courses (Allison, 2009). This approach allows us to control for unobserved heterogeneity: time-constant individual characteristics that can affect both the dependent and independent variables. If (single) mothers with higher earnings or employment continuity differ from those with worse labour market outcomes in terms of, for example, career orientation, then this selection into better labour market outcomes will be reflected in biased OLS estimates. Such selection effects have been found for wage penalties (Evertsson, 2016; Gangl & Ziefle, 2009).

First, we estimate how single and partnered mothers' predicted annual earnings and unemployment days are affected by family leave length by examining a two-way interaction between accumulated leave length and partnership status (both lagged by one year). Secondly, as the leave length is dependent on the number of children, we include a three-way interaction between partnership status, leave length and number of children. The models are run with robust standard errors and are presented in margin plots. Including all interactions, we estimate the following FE model (Allison, 2009):

$$Y_{it} = L_{it}P_{it}Cit + \gamma X_{it} + \alpha_i + \varepsilon_{it}$$

where Y represents a labour market outcome (annual unemployment days or earnings) for mother *i* in year *t*, *L* represents the accumulated leave length for each year, *P* is the partnership status of a mother in each year, and C represents the number of children. A set of predictor variables that vary over time is represented by the vector *X*, α is the individual level fixed effect, and ε is the error term. We compare FE models to random-effects models by means of the Hausman test, which confirms that these models are significantly different and that FE models should be applied (Allison, 2009).

A number of robustness checks were carried out because of the skewness of the measures. Due to the unemployment measure including large numbers of zero unemployment days, these models were also run using a Poisson distribution. Since one cannot have earnings without being employed, additional models were estimated that excluded either mothers without any earnings prior to birth or mothers without earnings in general. Furthermore, a model excluding extreme values was estimated, excluding earnings below 5,000 and above 200,000. All results were robust.

MEASUREMENT ERROR

No precise leave spell data were available for mothers; thus, the leave length is derived from the annual amount paid to recipients as explained above. While this is not problematic concerning parental leave, as almost all mothers take the full parental leave time and hence are at least one

year at home following the birth of a child, the length of CFC use is more problematic. Due to varying supplements based on earnings, number of children and municipality, it is impossible to derive the exact length of benefit receipt from the annual amount received. The leave length is therefore approximated and most likely overestimated. Parents are allowed to receive CFC in two blocks with the minimum leave being one month each (Salmi et al., 2018). This less flexible arrangement means parents cannot use the allowance to extend holidays, for example, yet the worry remains that there may be systematic differences in usage between single and partnered mothers.

We approach these issues in three ways. First, introducing fixed effects controls for unobserved heterogeneity and selection into single motherhood; thus, following individual mothers should eliminate the part of the effect that is due to systematic differences in usage – if they exist. Secondly, as leave length is dependent on number of children, a three-way interaction is included. This allows for a clearer separation of leave length and number of children and shows that even if leave length may be slightly overestimated, the main results are robust. Thirdly, additional models are estimated when leave length was accumulated if any benefit payments were received in a given year. Using a threshold of €4000 in the main model reduces the overestimation of leave use, especially at the lower end of the earnings distribution, as it relates to the basic payment only. Thus, high-earning mothers' leave use may still be overestimated. The two alternative measures of leave length are correlated by 94% and lead to the same results, suggesting that the overestimation is not substantial. Although the measure cannot be interpreted as the exact leave length, this measure still differentiates between relatively shorter and longer leaves.

RESULTS

Descriptive statistics are presented in Table 1, including the outcome variables and control variables. Partnership status is measured over time, independent of whether the partner was the child's father. In this time-varying sense, single mothers contribute approximately 16% of the person-years in the sample. Descriptively, single mothers do differ somewhat from partnered mothers. Single mothers are, on average, one year younger at first birth and less likely to be on family leave at a given time. Furthermore, single mothers have, on average, a lower level of formal education, are less likely to be employed, and more likely to be a student or unemployed and have fewer children than partnered mothers. Single mothers have approximately €2000 lower average overall annual earnings, while they also show, on average, more annual unemployment days.

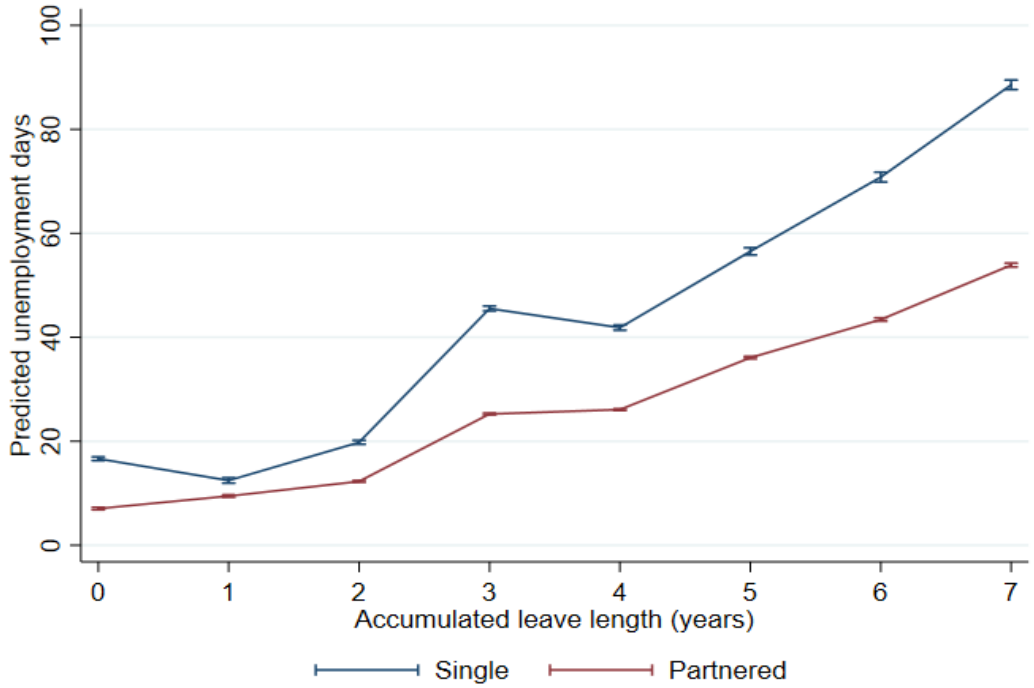
We start with introductory OLS models that control for age of the mother and number of children only. Figures 1 and 2 illustrate the predicted annual earnings and unemployment days for single and partnered mothers by family leave length. Single and partnered mothers differ considerably in their annual unemployment days by leave length. Single mothers have, on average, more unemployment days across all leave lengths, and their number of unemployment days also shows a steeper increase than that of partnered mothers as family leave length increases. Single mothers' annual earnings trajectories are slightly higher than those of partnered mothers up until a leave length of three years. As leave length increases, partnered mothers' annual earnings overtake single mothers' earnings and remain higher. Both groups, however, show decreasing earnings with longer leave lengths. These patterns remain robust when including main activity in this model as well.

Table 1. Distribution of the covariates by partnership status for mothers who had a child between 1991 and 2005 and were followed from 1989 to 2014, in person-years.

		Single	**Partnered**
		% or mean	% or mean
Age (mean)		34.3	35.2
Age at 1st birth (mean)		26.8	27.8
Currently on leave (tv)	no	86.0	72.7
	yes	14.0	27.3
Leave length in years (tv)	0	17.4	9.2
	1	9.2	11.5
	2	19.5	17.5
	3	18.5	17.9
	4	13.2	17.1
	5	8.6	10.8
	6	6.0	6.9
	7	7.7	9.2
Leave length in years	1	5.0	4.0
(total by the end of the follow-up)	2	16.2	11.6
	3	18.9	17.3
	4	17.0	21.0
	5	12.9	15.1
	6	10.7	11.4
	7	6.8	7.1
	8 and more	12.5	12.6
	mean (total length)	4.6	4.8
Period (tv)	1987–1990	1.9	0.9
	1991–1993	4.6	4.2
	1994–1996	7.0	7.5
	1997–2000	13.5	14.9
	2001–2004	18.4	20.3
	2005–2009	25.0	26.7
	2010–2014	29.8	25.6
Education (tv)	basic	19.9	8.9
	upper secondary	45.5	39.9
	lower tertiary	26.2	36.4
	higher tertiary	8.4	14.9
Economic activity (tv)	employed	67.5	76.6
	unemployed	11.8	6.5
	student	10.2	4.9
	disability pensioner	1.1	0.6
	others outside labour force	9.4	11.5
Region (tv)	urban municipalities	73.4	64.8
	semi-urban municipalities	13.7	17.7
	rural municipalities	12.9	17.5
Number of children (tv)	1 child	55.7	38.1
	2 children	31.3	42.2
	3 children	9.9	15.1
	4+ children	3.1	4.7
	mean number of children	2.2	2.4
Age of the youngest child (tv)	0	5.4	13.6
	1–2	12.2	21.8
	3 or older	64.9	55.4
	no child yet	17.4	9.2
Annual unemployment days	mean	40.0	22.7
Annual Earnings	mean	17,934	19,767
Total person-years	5,703,664	892,018	4,811,646
Total Individuals	302,345		

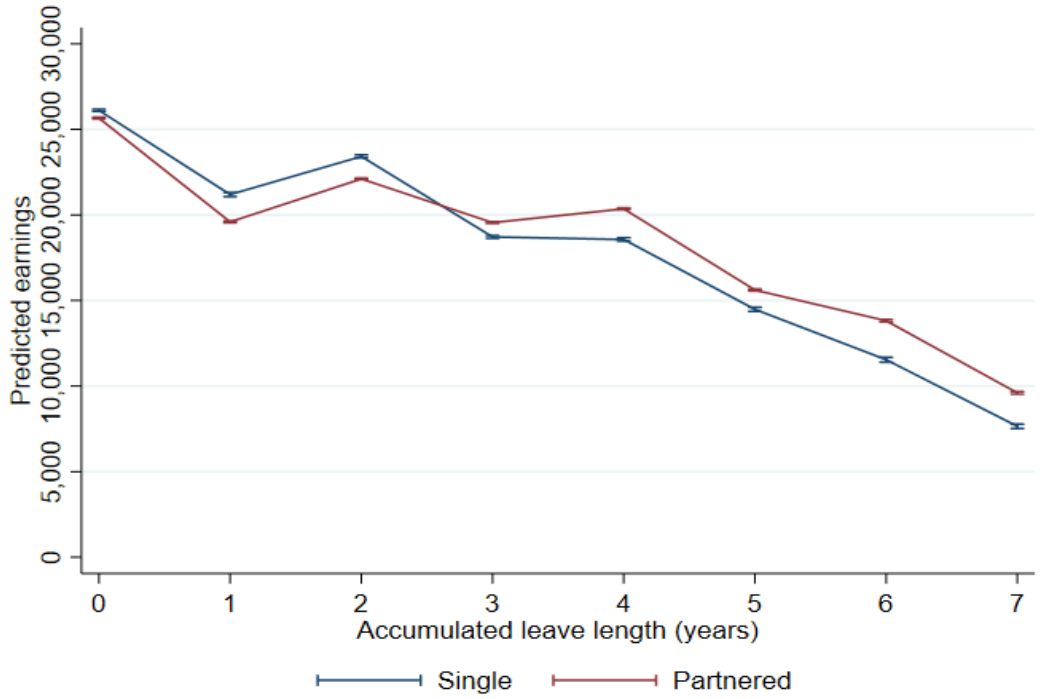
Note: tv=time-varying
All time-varying variables are lagged except for age, period, currently on leave, age of the youngest child and economic activity

Figure 1. Partnered and single mothers' average annual unemployment days by family leave length, controlling for age and number of children (non-FE OLS regression, predictive margins, 95% CIs).



Source: Finnish register data, own calculations

Figure 2. Partnered and single mothers' average annual earnings by family leave length, controlling for age and number of children (non-FE OLS regression, predictive margins, 95% CIs).



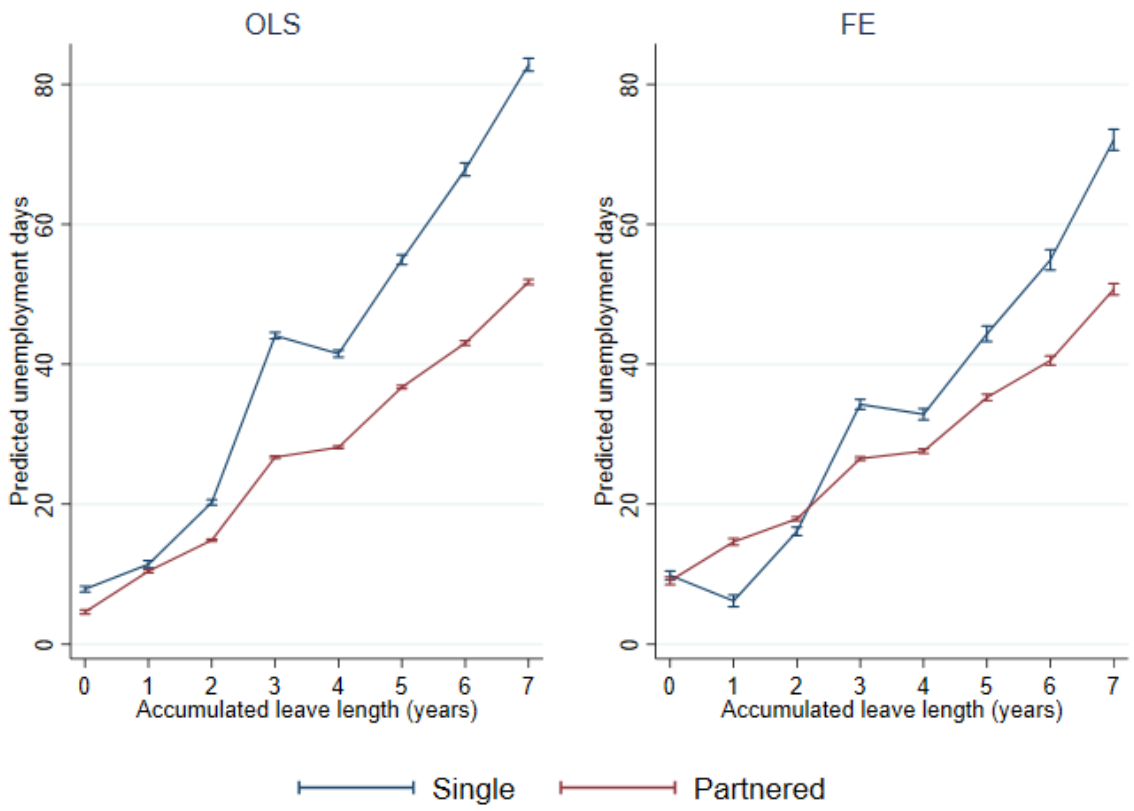
Source: Finnish register data, own calculations

The interaction estimates for leave length and partnership status from the final OLS and FE regression models of the number of unemployment days are shown in Figure 3. The regression coefficients can be found in the appendix (Table A1). The OLS models compare single mothers and partnered mothers and serve as a point of reference for the FE models, where each mother serves as her own comparison over time.

The results of the interaction effect between leave length and partnership status from the OLS model that includes all control variables are shown in the left graph in Figure 3. As all mothers were taken to be on leave during the first year, the zero category refers to the years prior to their first birth. The leave length of mothers is positively associated with annual unemployment days. This association is somewhat stronger for single mothers than for partnered mothers. For partnered mothers who were on family leave for approximately three years, predicted unemployment length is almost 30 days a year on average, while this figure rises to over 50 days if the mother had been on leave for approximately seven or more years. For single mothers, on the other hand, the model predicts approximately 45 days of unemployment after approximately three years of family leave and more than 80 days of annual unemployment after approximately seven or more years of leave. This finding indicates that single mothers might be confronted with more fragmented employment trajectory and insecurity after a relatively long family leave, as they face repeated or long-term unemployment. Hence, it seems that single mothers fare more poorly on the labour market than partnered mothers who have been on family leave for about the same amount of time.

Controlling for unobserved time-constant characteristics, the FE models give a somewhat more precise picture of the effect of leave on unemployment days (right panel, Figure 3). Given the economic disadvantages that single mothers face, the increase in unemployment days could be due to time-constant unobserved characteristics associated with being a single parent. However, when accounting for unobserved heterogeneity, the relationship between leave length and annual unemployment days is still positive. The effect slightly weakens when mothers are single but not when they are partnered, causing the estimates for single and partnered mothers to converge slightly. Nevertheless, intra-individual comparisons reveal that longer leaves are still more disadvantageous when mothers are single than when they are partnered. Approximately three years of family leave leads, on average, to approximately 10 more unemployment days when mothers are single than when they are partnered, and the difference is almost 20 days when mothers have been on leave for approximately 7 or more years. Very short leaves seem to have a greater protective effect when mothers are single, as they show fewer predicted unemployment days than when mothers are partnered if mothers have been on leave for only one or two years. Our results indicate that pre-leave labour market differences and time-constant differences between single and partnered mothers do not fully explain the differential effect of long family leave. Instead, single mothers fare worse when taking long family leave, independent of selection.

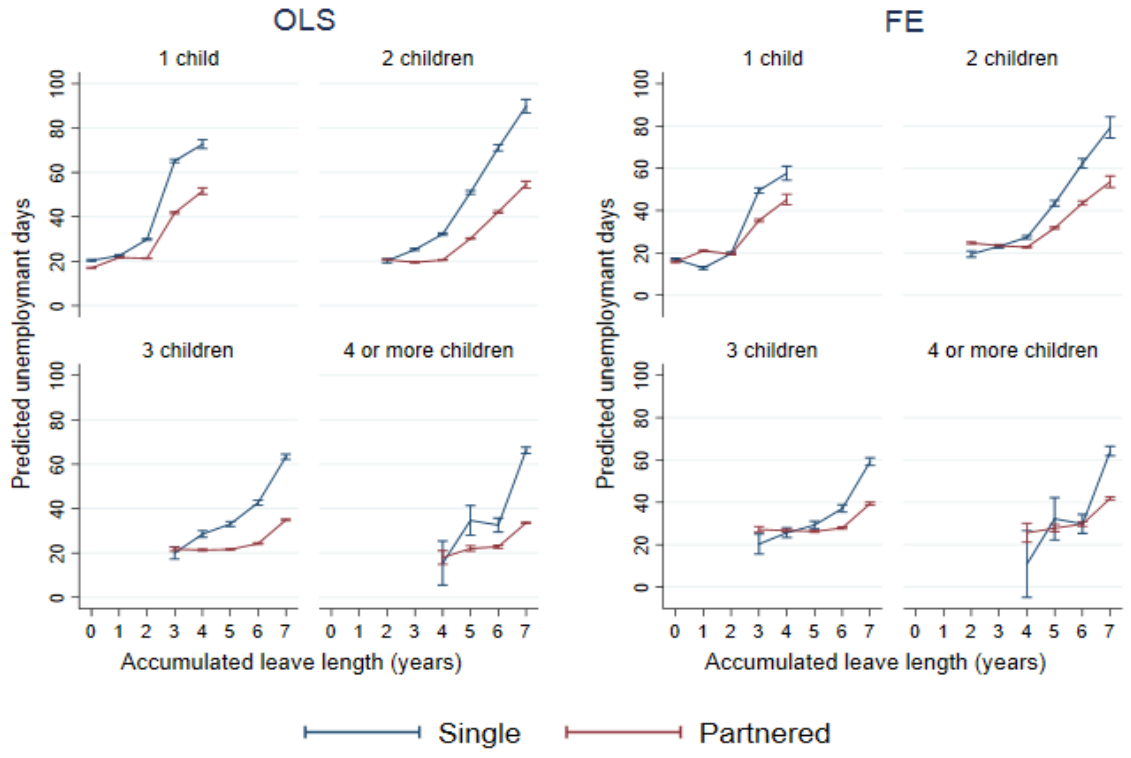
Figure 3. Predicted annual unemployment days for single and partnered mothers by family leave length (non-FE and FE OLS regression, predictive margins, 95% CIs).



Source: Finnish register data, own calculations
Mothers who had a child between 1991 and 2005 and were followed from 1989 to 2014. Based on an interaction between family leave length and partnership status.
Controlling for age, age squared, period, education, region, number of children, age of the youngest child and currently on leave.

Extending the analysis to a three-way interaction of family leave length, partnership status and number of children shows whether the leave length effect differs by number of children for single and partnered mothers (Figure 4). Although the results above are net of the number of children, some leave lengths may not be possible with different numbers of children. The three-way interaction thus confirms the effect of leave length by number of children. For single and partnered mothers with one, two or three children, Figure 4 shows a difference in the effect of family leave on predicted unemployment days. The FE results (right panel, Figure 4) confirm that for women with only one child, a leave length of approximately three or more years predicts increasing disadvantages for single mothers. For mothers with two children, the effects for single and partnered mothers start to diverge after approximately four years of family leave, while for mothers of three children, this divergence occurs after approximately six years of family leave. Only the longest leaves display differences when mothers have four or more children (which is relatively rare). Comparing the FE results to the OLS models verifies that unobservables explain part of the association, but differences remain similar. Hence, selection into single motherhood does not fully explain the consistently higher predicted unemployment days single mothers face when having been on family leave for longer periods of time.

Figure 4. Predicted annual unemployment days for single and partnered mothers across family leave length by number of children (non-FE and FE OLS regression, predictive margins, 95% CIs).



Source: Finnish register data, own calculations

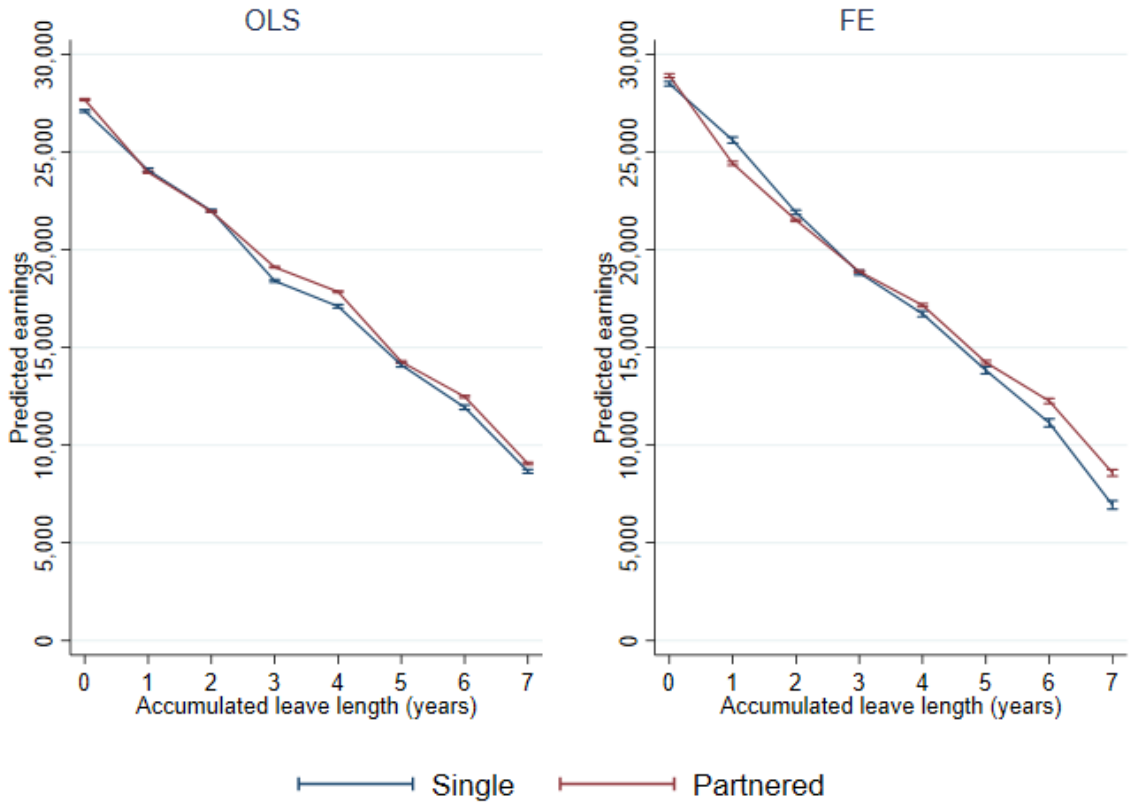
Mothers who had a child between 1991 and 2005 and were followed from 1989 to 2014. Based on a three-way interaction between family leave length, partnership status and the number of children.

Controlling for age, age squared, period, education, region, number of children, age of the youngest child and currently on leave.

EARNINGS

How does accumulated leave length affect the earnings of single and partnered mothers? The interaction estimates for leave length and partnership status from the OLS and FE models of annual earnings are shown in Figure 5 (regression coefficients in Appendix Table A2). For both the OLS and FE models, a negative linear association between leave length and annual earnings can be seen for single and partnered mothers with no differences when employment status is taken into account. Accounting for unobserved heterogeneity does not change this effect of leave length on annual earnings for either single or partnered mothers. While the general interpretation that there are no great differences between single and partnered mothers in terms of earnings consequences remains, shorter lengths of leave seem to be somewhat more negative for partnered than single mothers, whereas this relationship is inverted with a leave length of four or more years. In general, these results indicate a dramatic drop in annual earnings when long family leaves have been taken for both partnered and single mothers.

Figure 5. Predicted annual earnings for single and partnered mothers by family leave length (non-FE and FE OLS regression, predictive margins, 95% CIs).

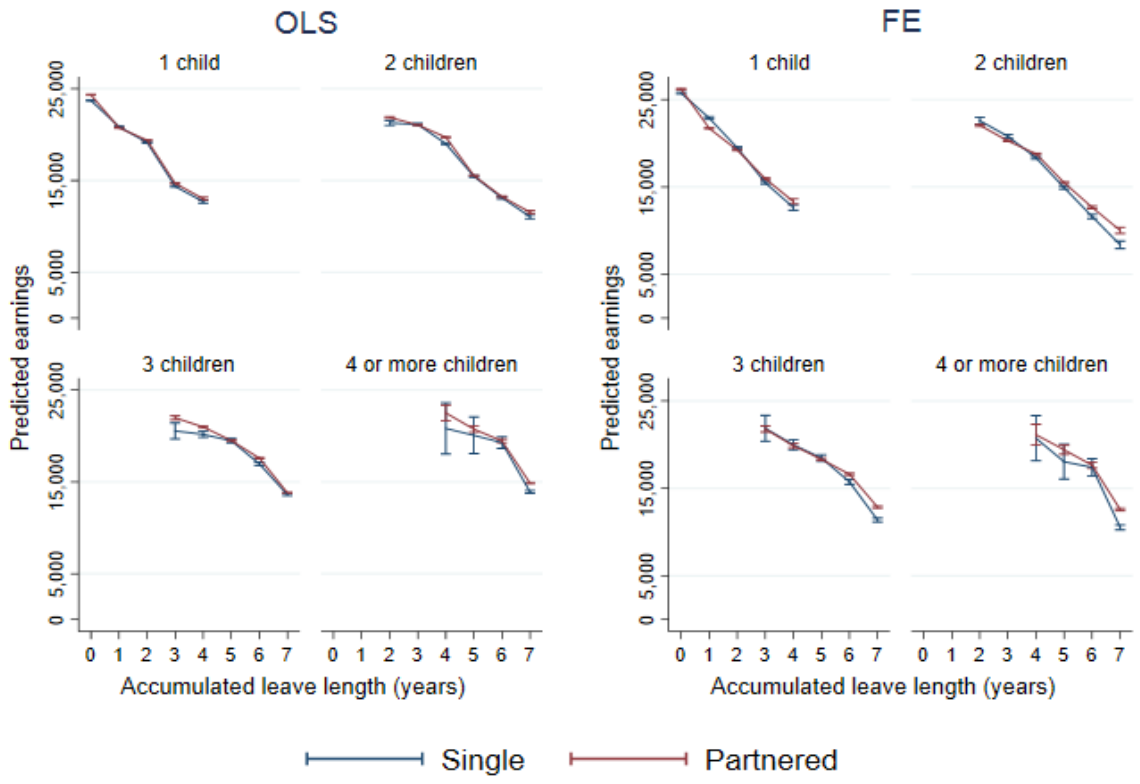


Source: Finnish register data, own calculations
Mothers who had a child between 1991 and 2005 and were followed from 1989 to 2014. Based on an interaction between family leave length and partnership status.

Controlling for age, age squared, period, education, region, number of children, age of the youngest child, currently on leave, and main activity.

A three-way interaction between family leave length, partnership status and number of children for the OLS and FE models is displayed in Figure 6. The results again show merely slight to no differences between single mothers and partnered mothers' annual earnings with increasing family leave length; the result is independent of how many children mothers had. Longer leave lengths decrease earnings somewhat more when mothers are single than when they are partnered (right panel, Figure 6). Nevertheless, these results confirm that mothers in general face notable earnings repercussions of relatively long leaves, independent of the number of children and partnership status.

Figure 6. Predicted annual earnings for single and partnered mothers across family leave length by the number of children (non-FE and FE OLS regression, predictive margins, 95% CIs).



Source: Finnish register data, own calculations
Mothers who had a child between 1991 and 2005 and were followed from 1989 to 2014. Based on a three-way interaction between family leave length, partnership status and number of children.
Controlling for age, age squared, period, education, region, age of the youngest child, currently on leave, and main activity.

DISCUSSION & CONCLUSIONS

Policies that facilitate the combination of work and family promote mothers' employment (Stier et al., 2001). The opposite is the case, however, if family leave is comparatively long. While long leaves have been found to be detrimental to women's labour market outcomes, less attention has been paid to differential effects for single mothers. This study addresses this gap by comparing labour market outcomes – in terms of unemployment and earnings – after longer family leaves when mothers are single or partnered.

Comparing cross-sectional and panel models for annual unemployment and annual earnings consequences, our study showed increasing unemployment with longer leave length for partnered and single mothers. The longer the leave, however, the worse off single mothers are compared to partnered mothers. The differences start to emerge with a leave of approximately three years, indicating that longer leaves may lead to more frequent or longer unemployment spells for single mothers than partnered mothers. This finding is persistent across different numbers of children and indicates more fragmented, less stable employment trajectories for single mothers who take longer leaves. These differences, however, only hold for leave length consequences on annual unemployment days and not for annual earnings net of employment status.

Despite the human capital theory suggesting no differences in consequences for single and partnered mothers, single mothers differ from partnered mothers in unemployment consequences. Leave length consequences for earnings, however, seem to be in line with the human capital hypothesis (Mincer & Polachek, 1974). Both single and partnered mothers show steep earnings losses the longer they are out of the labour market, and no differences between the groups are observed. This finding could suggest that human capital is more important in determining an individual's earnings than in influencing their chances of obtaining or maintaining a job. Further, this finding could imply that selection takes place for entry into employment, but once employed, single mothers do not differ greatly from partnered mothers in their leave consequences. On the other hand, the greater negative effects on single mothers' than partnered mothers' unemployment might suggest the presence of either discrimination in the labour market or structural difficulties in balancing work and family for single parents. Employers may perceive single mothers to be less productive and committed, as they are the sole carers for their children. Likewise, single mothers may be less flexible in terms of working hours and distance, which reduces their ability to take or hold certain jobs. While the latter explanation seems very likely in terms of time-allocation of single mothers (Douthitt et al., 1990), it should not be assumed that (single) mothers turn down work in favour of unemployment benefits, as these benefits come with the obligation to take on work offered to them (Kela, 2017). Finally, our results are not in line with the idea that stronger labour market disadvantages of longer leaves for single mothers are due to compositional differences. Instead, selection and unobserved heterogeneity only partly explain the stronger disadvantages that single mothers face in terms of unemployment.

The limitation of this study concerning measurement error is discussed above. In short, leave length was derived from annually paid benefits; hence, the leave length was approximated and most likely overestimated and must be interpreted in relative terms. Nevertheless, even if we could not measure exact lengths, receipt of leave payments of at least €4000 in each of the years indicates that mothers left work for at least some time, and the accumulation provides a relative measure of longer leaves. Hence, we cannot interpret the results in the number of full years of leave but in the number of years not fully present in the labour market. Future research should aim to use more detailed data on leave length. Furthermore, earnings and unemployment days are just two possible outcomes to analyse in regard to labour market outcomes of single mothers. Another avenue of this topic could be occupational mobility or segregation (Hegewisch & Gornick, 2011). The literature on the motherhood penalty suggests that the penalty increases with the number of children (Kahn, García-Manglano, & Bianchi, 2014); however, our three-way interactions imply that it may be the increased family leave length of a mother when having more children and not necessarily the number of children itself that leads to labour market disadvantages. Future studies may want to examine this avenue further.

Reducing negative labour market consequences for mothers, and especially single mothers, would have several benefits for mothers, their children and wider society. Single mothers face poverty more often than partnered mothers do, and fragmented employment increases the likelihood of at least short spells of poverty through employment instability (Destro & Brady, 2011). Poverty, furthermore, has negative consequences for health, well-being and future earnings. In addition to single mothers' own well-being, their poverty and insecure employment situation tends to translate into negative outcomes for their children. An American study showed, for example, that children of mothers in bad jobs are more likely to repeat years in school, while the

mothers' unemployment increases the likelihood of their children dropping out of school (Kalil & Ziol-Guest, 2005). The Nordic welfare states constitute a mobility regime in which the influences of parental background on child outcomes can be weakened (Esping-Andersen & Wagner, 2012), but previous research has also revealed socioeconomic disparities in child outcomes in these countries (see Kallio, Kauppinen, & Erola, 2016). When CFC was implemented, it was portrayed to be in the child's best interest (Hiilamo & Kangas, 2009), yet when mothers and, in particular, single mothers face labour market disadvantages following long leaves, this premise may be questioned. In general, reducing labour market consequences after family leave would improve the reconciliation of work and family, reduce the motherhood penalty and benefit children.

Overall, the availability of very long leaves might not only increase gender occupational inequality or women's occupational mobility (Evertsson & Duvander, 2011; Mandel & Semyonov, 2005) but also have differential effects on more vulnerable groups. This finding highlights the negative consequences of CFC, which has been previously criticised as working against gender equality (Hiilamo & Kangas, 2009), as long leaves are primarily taken by women. Korpi, Ferrarini, and Englund (2013) argued that the gains of policies aimed at increasing maternal employment are distorted if they hamper women's career opportunities at the same time, but they noted that such outcomes may also reflect varying policy effects on different social strata. This argument highlights the conflicting nature of parental leave and CFC in Finland. Parental leave was implemented to support women in combining work and family, yet CFC seems to negate the positive effects of parental leave by extending the available leave length. Family policies are needed that help vulnerable groups more successfully to combine work and family.

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REFERENCES

Aisenbrey, S., Evertsson, M., & Grunow, D. (2009). Is there a career penalty for mothers' time out? A comparison of Germany, Sweden and the United States. *Social Forces, 88*(2), 573-605.

Akgunduz, Y. E., & Plantenga, J. (2013). Labour market effects of parental leave in Europe. *Cambridge Journal of Economics, 37*(4), 845-862.

Albrecht, J., Edin, P., Sundström, M., & Vroman, S. B. (1999). Career interruptions and subsequent earnings: A reexamination using Swedish data. *Journal of Human Resources, 34*(2), 294-311.

Allison, P. D. (2009). *Fixed effects regression models*. California: SAGE publications.

Bargain, O., Orsini, K., & Peichl, A. (2014). Comparing labor supply elasticities in Europe and the United States new results. *Journal of Human Resources, 49*(3), 723-838.

Connelly, R., & Kimmel, J. (2003). Marital status and full–time/part–time work status in child care choices. *Applied Economics, 35*(7), 761-777.

Destro, L., & Brady, D. (2011). Does european-style welfare generosity discourage single-mother employment. In D. Brady (Ed.), *Comparing european workers part B: Policies and institutions (research in the sociology of work, vol. 22 part 2)* (pp. 53-82). Bingley: Emerald Group Publishing Limited. doi:https://doi.org/10.1108/S0277-2833(2011)000022B005

Douthitt, R. A., Zick, C. D., & McCullough, J. (1990). The role of economic and demographic factors in explaining time-use of single and married mothers. *Lifestyles, 11*(1), 23-51.

Drange, N., & Rege, M. (2013). Trapped at home: The effect of mothers' temporary labor market exits on their subsequent work career. *Labour Economics, 24*, 125-136.

Esping-Andersen, G., & Wagner, S. (2012). Asymmetries in the opportunity structure. intergenerational mobility trends in Europe. *Research in Social Stratification and Mobility, 30*(4), 473-487.

Eurostat. (2018). Eurostat database. Employment and unemployment (labour force survey). Retrieved from https://ec.europa.eu/eurostat/web/lfs/data/database

Evertsson, M. (2016). Parental leave and careers: Women's and men's wages after parental leave in Sweden. *Advances in Life Course Research, 29*, 26-40.

Evertsson, M., & Duvander, A. (2011). Parental Leave—Possibility or trap? Does family leave length effect Swedish women's labour market opportunities? *European Sociological Review, 27*(4), 435-450.

Evertsson, M., Grunow, D., & Aisenbrey, S. (2016). Work interruptions and young women's career prospects in Germany, Sweden and the US. *Work, Employment and Society, 30*(2), 291-308.

Feldstein, M., & Poterba, J. (1984). Unemployment insurance and reservation wages. *Journal of Public Economics, 23*(1-2), 141-167.

Gangl, M. (2006). Scar effects of unemployment: An assessment of institutional complementarities. *American Sociological Review, 71*(6), 986-1013.

Gangl, M., & Ziefle, A. (2009). Motherhood, labor force behavior, and women's careers: An empirical assessment of the wage penalty for motherhood in Britain, Germany, and the United States. *Demography, 46*(2), 341-369.

Giuliani, G., & Duvander, A. Z. (2017). Cash-for-care policy in Sweden: An appraisal of its consequences on female employment. *International Journal of Social Welfare, 26*(1), 49-62.

Gonzalez, L. (2004). Single mothers and work. *Socio-Economic Review, 2*(2), 285-313.

Gornick, J. C., Meyers, M. K., & Ross, K. E. (1998). Public policies and the employment of mothers: A cross-national study. *Social Science Quarterly, 79*(1), 35-54.

Hakovirta, M., & Jokela, M. (2019). Contribution of child maintenance to lone mothers' income in five countries. *Journal of European Social Policy, 29*(2), 257-272.

Hardoy, I., & Schøne, P. (2010). Incentives to work? The impact of a 'Cash-for-care'benefit for immigrant and native mothers labour market participation. *Labour Economics, 17*(6), 963-974.

Harkness, S. E. (2016). The effect of motherhood and lone motherhood on the employment and earnings of british women: A lifecycle approach. *European Sociological Review, 32*(6), 850-863.

Härkönen, J., Lappalainen, E., & Jalovaara, M. (2016). Double disadvantage in a nordic welfare state: A demographic analysis of the single mother employment gap in Finland, 1987–2011. (Stockholm Research Reports in Demography No. 2016:11). Stockholm: Stockholm University.

Härtull, C., Cederström, A., & Saarela, J. (2017). Income poverty in households with children: Finland 1987–2011. *Research on Finnish Society, 10*, 43-59.

Hegewisch, A., & Gornick, J. C. (2011). The impact of work-family policies on women's employment: A review of research from OECD countries. *Community, Work & Family, 14*(2), 119-138.

Heuveline, P., Timberlake, J. M., & Furstenberg, F. F. (2003). Shifting childrearing to single mothers: Results from 17 western countries. *Population and Development Review, 29*(1), 47-71.

Hiilamo, H., & Kangas, O. (2009). Trap for women or freedom to choose? The struggle over cash for child care schemes in Finland and Sweden. *Journal of Social Policy, 38*(3), 457-475.

Jalovaara, M. (2013). Socioeconomic resources and the dissolution of cohabitations and marriages. *European Journal of Population/Revue Européenne De Démographie, 29*(2), 167-193.

Jalovaara, M., & Andersson, G. (2018). Disparities in children's family experiences by mother's socioeconomic status: The case of Finland. *Population Research and Policy Review, 37*(5), 751-768.

Jalovaara, M., & Fasang, A. E. (2015). Are there gender differences in family trajectories by education in Finland? *Demographic Research, 33*(44), 1241-1256. doi:10.4054/DemRes.2015.33.44

Jalovaara, M., & Kulu, H. (2018). Separation risk over union duration: An immediate itch? *European Sociological Review, 34*(5), 486-500.

Kahn, J. R., García-Manglano, J., & Bianchi, S. M. (2014). The motherhood penalty at midlife: Long-term effects of children on women's careers. *Journal of Marriage and Family, 76*(1), 56-72.

Kalil, A., & Ziol-Guest, K. M. (2005). Single mothers' employment dynamics and adolescent Well-Being. *Child Development, 76*(1), 196-211.

Kallio, J. M., Kauppinen, T. M., & Erola, J. (2016). Cumulative socio-economic disadvantage and secondary education in Finland. *European Sociological Review, 32*(5), 649-661.

Kela. (2017). Right to unemployment benefits: If you decline offered work or training. Retrieved from https://www.kela.fi/web/en/if-you-decline-offered-work-or-training

Kela. (2019). Child care subsidies: Number of recipients and subsidies paid out [e-application]. Retrieved from http://raportit.kela.fi/ibi_apps/WFServlet?IBIF_ex=NIT113AL&%20YKIELI=E

Korpi, W., Ferrarini, T., & Englund, S. (2013). Women's opportunities under different family policy constellations: Gender, class, and inequality tradeoffs in western countries re-examined. *Social Politics: International Studies in Gender, State & Society, 20*(1), 1-40.

Lammi-Taskula, J. (2017). Fathers on leave alone in Finland: Negotiations and lived experiences. In M. O'Brien, & K. Wall (Eds.), *Comparative perspectives on work-life balance and gender equality. Fathers on leave alone* (Life Course Research and Social Policies, vol 6. ed., pp. 89-106). Cham: Springer. doi:DOI 10.1007/978-3-319-42970-0_1

Maldonado, L. C., & Nieuwenhuis, R. (2015). Family policies and single parent poverty in 18 OECD countries, 1978–2008. *Community, Work & Family*, *18*(4), 395-415.

Mandel, H., & Semyonov, M. (2005). Family policies, wage structures, and gender gaps: Sources of earnings inequality in 20 countries. *American Sociological Review, 70*(6), 949-967.

Mincer, J., & Polachek, S. (1974). Family investments in human capital: Earnings of women. *Journal of Political Economy, 82*(2, Part 2), S76-S108.

Misra, J., Moller, S., Strader, E., & Wemlinger, E. (2012). Family policies, employment and poverty among partnered and single mothers. *Research in Social Stratification and Mobility, 30*(1), 113-128.

Naz, G. (2004). The impact of cash-benefit reform on parents' labour force participation. *Journal of Population Economics*, *17*(2), 369-383.

Nieuwenhuis, R., & Maldonado, L. C. (2018). *The triple bind of single-parent families*. Bristol: Policy Press.

OECD. (2019a). Employment rate (indicator). Retrieved from doi: 10.1787/1de68a9b-en

OECD. (2019b). Part-time employment rate (indicator). Retrieved from doi: 10.1787/f2ad596c-en

Pettit, B., & Hook, J. (2005). The structure of women's employment in comparative perspective. *Social Forces, 84*(2), 779-801.

Rønsen, M. (2009). Long-term effects of cash for childcare on mothers' labour supply. *Labour, 23*(3), 507-533.

Rønsen, M., & Sundström, M. (2002). Family policy and after-birth employment among new mothers–A comparison of Finland, Norway and Sweden. *European Journal of Population/Revue Europeenne De Demographie, 18*(2), 121-152.

Ross, R., & Saunders, P. (1993). The labour supply behaviour of sole mothers and married mothers in Australia: Evidence from the 1986 income distribution survey. *Australian Economic Papers, 32*(60), 116-133.

Ruhm, C. J. (1998). The economic consequences of parental leave mandates: Lessons from Europe. *The Quarterly Journal of Economics, 113*(1), 285-317.

Salmi, M., Närvi, J., & Lammi-Taskula, J. (2018). 'Finland country note'. In Blum, S., Koslowski, A., Macht, A. and Moss, P. (Ed.), *International Review of Leave Policies and Research 2018.* Retrieved from http://www.leavenetwork.org/lp_and_r_reports/

Sipilä, J., & Korpinen, J. (1998). Cash versus child care services in Finland. *Social Policy & Administration, 32*(3), 263-277.

Stafford, F. P., & Sundström, M. (1996). Time out for childcare: Signalling and earnings rebound effects for men and women. *Labour, 10*(3), 609-629.

Statistics Finland. (2018). Families 2017. Retrieved from https://www.stat.fi/til/perh/2017/perh_2017_2018-05-25_en.pdf

Stier, H., Lewin-Epstein, N., & Braun, M. (2001). Welfare regimes, Family-Supportive policies, and women's employment along the Life-Course. *American Journal of Sociology, 106*(6), 1731-1760.

THL. (2019). *THL 2019. Lapsen elatus ja huolto sekä isyyden selvittäminen 2018. terveyden ja hyvinvoinnin laitos, tilastoraportti 9/2019.* doi:http://urn.fi/URN:NBN:fi-fe2019050914879

Wong, Y. I., Garfinkel, I., & McLanahan, S. (1993). Single-mother families in eight countries: Economic status and social policy. *Social Service Review, 67*(2), 177-197.

World Economic Forum. (2018). The Global Gender Gap Report. Retrieved from http://www3.weforum.org/docs/WEF_GGGR_2018.pdf

APPENDIX

Table A1. Regression coefficients of leave length on annual unemployment days (non-FE and FE OLS regression and interaction models).

		OLS - Model 1		OLS - Model 2		FE	
Age		-4.0	***	-2.4	***	-5.8	***
Age squared		0.0	***	0.0	***	0.1	***
Currently on leave		-16.4	***	-19.0	***	-20.0	***
Accumulated leave length (years)	0	-1.1	***	-3.5	***	3.7	***
	2	4.7	***	8.9	***	9.9	***
	3	29.6	***	32.7	***	28.1	***
	4	25.5	***	30.1	***	26.7	***
	5	39.7	***	43.5	***	38.2	***
	6	53.3	***	56.4	***	48.7	***
	7+	69.7	***	71.4	***	65.9	***
Partnered	yes	-0.6	*	-1.0	***	8.4	***
Accumulated leave length (years) ## Partnered (yes)	0	-4.3	***	-2.3	***	-9.2	***
	2	-4.7	***	-4.4	***	-6.6	***
	3	-17.9	***	-16.4	***	-16.2	***
	4	-14.4	***	-12.4	***	-13.7	***
	5	-19.1	***	-17.2	***	-17.5	***
	6	-26.2	***	-23.8	***	-22.8	***
	7+	-33.0	***	-30.1	***	-29.8	***
Period (ref: 2005–2009)	1987–1990			-31.8	***	-36.8	***
	1991–1993			10.0	***	5.3	***
	1994–1996			23.5	***	19.1	***
	1997–2000			12.6	***	9.2	***
	2001–2004			5.1	***	3.3	***
	2010–2014			-0.6	***	1.6	***
Education (ref: secondary)	basic			10.1	***	-11.4	***
	lower tertiary			-7.2	***	12.0	***
	higher tertiary			-10.0	***	20.2	***
Region (ref: urban)	semi-urban			1.0	***	0.0	
	rural			2.7	***	1.1	***
Youngest child age (ref: no child, 0)	1–2			-6.0	***	-4.4	***
	3+			-4.0	***	-0.1	***
Number of children (ref: 0–1)	2	-15.8	***	-16.1	***	-7.4	***
	3	-26.8	***	-26.2	***	-14.9	***
	4	-29.3	***	-28.5	***	-14.5	**
Constant		122.8	***	82.6	***	142.7	***
Number of observations		5,678,418		5,678,418		5,678,418	
Number of groups						302,345	
log-likelihood		-3.20E+07		-3.20E+07		-3.11E+07	
rho						0.29	
Hausman test (df)						33,474.45(33)	
p-value						0.00	

* p<0.05; ** p<0.01; *** p<0.001
All variables time-varying
All variables are lagged except for age, period, currently on leave, age of the youngest child and economic activity.

Table A2. Regression coefficients of leave length on annual earnings (non-FE and FE OLS regression and interaction models).

		OLS - Model 1		OLS - Model 2		FE	
Age		1,918	***	-187	***	778	***
Age squared		-15	***	6	***	2	***
Currently on leave		-11,824	***	-6,440	***	-7,175	***
Accumulated leave length (years)	0	1,112	***	2,871	***	2,688	***
	2	344	***	-2,023	***	-3,649	***
	3	-4,946	***	-5,568	***	-6,637	***
	4	-5,458	***	-6,835	***	-8,736	***
	5	-9,858	***	-9,817	***	-11,599	***
	6	-13,255	***	-11,994	***	-14,295	***
	7+	-18,142	***	-15,280	***	-18,529	***
Partnered	yes	124	*	-177	***	-1,242	***
Accumulated leave length (years) ## Partnered (yes)	0	2,766	***	794	***	1,696	***
	2	140		133	*	868	***
	3	1,949	***	913	***	1,367	***
	4	2,207	***	937	***	1,715	***
	5	1,555	***	340	***	1,650	***
	6	2,574	***	720	***	2,351	***
	7+	2,592	***	569	***	2,883	***
Period (ref: 2005–2009)	1987–1990			-2,636	***	4,736	***
	1991–1993			-6,822	***	-1,727	***
	1994–1996			-7,900	***	-3,753	***
	1997–2000			-3,409	***	-298	***
	2001–2004			-2,210	***	-510	***
	2010–2014			1,540	***	-588	***
Education (ref: secondary)	basic			-512	***	-155	**
	lower teriary			3,516	***	3,625	***
	higher tertiary			15,527	***	11,782	***
Region (ref: urban)	semi-urban			-1,327	***	-327	***
	rural			-2,251	***	56,018	
Youngest child age (ref: no child, 0)	1-2			3,203	***	3,489	***
	3+			6,732	***	6,399	***
Number of children (ref: 0–1)	2	5,371	***	4,617	***	3,791	***
	3	9,301	***	7,784	***	6,571	***
	4	9,354	***	8,956	***	6,731	***
Main activity (ref: employed)	unemployed			-13,968	***	-9,044	***
	student			-14,205	***	-10,503	***
	disability pensioner			-24,503	***	-20,849	***
	other outside labour force			-12,555	***	-7,415	***
Constant		-25,460	***	19,343	***	-7,611	***
Number of observations		5,678,418		5,678,418		5,678,418	
Number of Groups						302,345	
log-likelihood		-6.30E+07		-6.21E+07		-6.04E+07	
rho						0.47	
Hausman test (df)						99,923.01(37)	
p-value						0.00	

* p<0.05; ** p<0.01; *** p<0.001
All variables time-varying
All variables lagged except for age, period, currently on leave, age of the youngest child and economic activity

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