



Does Postponing Pay Off?

Timing of Parenthood, Earnings Trajectories, and Earnings Accumulation in Sweden 1990-2012

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Abstract: In this paper, we a) study the consequences of parenthood on earnings trajectories over the life-course, and b) analyze the impact of timing of parenthood on cumulative earnings in Sweden. We argue that parenthood can have long-term impacts on earnings trajectories, which can accumulate into considerable effects over time. Such cumulative effects can shape socioeconomic and gender inequalities in earnings and at later age, pensions. We analyze data from Swedish population registers, using the full cohorts of men and women born 1972-81. Our findings indicate that parenthood has negative effects on women's and small effects on men's earnings trajectories. Over time, the former accumulate into major parenthood penalties. These penalties are smaller for women who postpone motherhood due to the shorter time these women have been exposed to motherhood penalties. Parenthood timing can thus affect long-term gender and socioeconomic earnings inequalities.

Keywords: motherhood penalty, fatherhood premia, growth curve analysis, earnings accumulation, gender inequalities, life course

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1. Introduction

Parenthood is a crucial life course transition with different effects on men's and women's earnings. The vast literature of 'motherhood earnings penalties' and 'fatherhood premia' has shown that women's earnings dramatically decrease after parenthood, making mothers earn much less than non-mothers (Budig and England 2001; Budig et al. 2010), especially if they have the first child at young ages (Taniguchi 1999; Miller 2011). Conversely, fathers usually earn more than childless men, especially immediately after the birth of a child, although the effect is small and mainly linked to marriage (Isacsson 2007; Glauber 2008).

However, this literature has primarily focused on estimating these effects from a static perspective, as effects on hourly wages or monthly/annual earnings. Few empirical works studied the impact of (timing of) parenthood on earnings from a dynamic perspective, asking how long penalties and premia last and especially if (and how) they translate and accumulate into life-time advantages or disadvantages, as suggested by Abendroth and colleagues (2014). This issue is substantially relevant, since parenthood effects of life-time earnings can be accumulative if parenthood leads to earnings losses (and gains) in the long-run. Moreover, if parenthood and its timing affect accumulated earnings over the life course, these events will additionally affect future pension levels and gender inequalities therein. In addition, because the timing of parenthood is affected by socioeconomic resources and socioeconomic background (Andersson 2000; Dahlberg 2015), it can furthermore shape inequalities in them and in their intersections with gender.

This paper aims to fill this gap, by analyzing how (the timing of) becoming a parent affects earnings trajectories as well as accumulated earnings over the life course. In other words, we study the consequences of parenthood on earnings trajectories over the life-course and analyze the impact of timing of parenthood on cumulative earnings.

Our analysis focuses on Sweden, which is well-known for its extensive parental leave and childcare policies, which are built to hamper negative consequences of childbearing on female careers and promote combining work and family life (Haas 2003) as well as favoring gender equity (Korpi 2000). Parental leaves are in fact very long and well paid and Sweden designates part of them as the fathers' (Duvander et al. 2010). Moreover, the welfare state provides public childcare services, primarily kindergartens, where a very high percentage of small children have access, increasing the likelihood of mothers to return to the labor market relatively early after the birth of a child (Hobson et al. 2011) and decreasing the 'average' magnitude of the motherhood penalty (Harkness and Waldfogel 2003; Budig et al. 2010). However, Swedish welfare state and its dual-earner family policy model tend to locate

women, especially mothers, in the public sector and in part-time jobs, limiting their access to prestigious occupations, which have characteristics that can be important for wage growth (Magnusson 2010). These peculiarities make the analysis of the effect of parenthood on earnings trajectories and accumulation in Sweden important, since it can shed light on patterns that may not be visible if we study the ‘average’ association between parenthood and income.

The paper is structured as follows. After this introduction, the next two sections focus on the main explanations and evidence on ‘motherhood penalty’ and ‘fatherhood premia’ (Section 2), especially from a life-course perspective (Section 3). Section 4 describes the data, variables, and methods used, as well as the analytical strategy. Section 5 sets out the empirical results, and Section 6 concludes.

2. Motherhood penalties and fatherhood premia: explanations and evidence

Previous research has discussed several theoretical mechanisms to explain the motherhood penalty. First, according to the human capital theory (Mincher and Polachek 1974), mothers, on average, earn less than non-mothers because they invest less in market human capital than non-mothers do, since they are more likely to spend time out of work for childbearing and childrearing, leading to a loss of experience and of seniority, and to skill depreciation (Hill 1979; Waldfogel 1997; Gangl and Ziefle 2009). Second, New Home Economics approach (Becker 1981) suggests that mothers may be less productive on the job than childless women because they reduce job effort after the birth of a child. Specifically, the loss of productivity and wages arises from a stronger commitment to home activities, by spending non-employment hours and energies in childrearing and household duties and being tired while at work (Budig and England 2001; Anderson et al. 2003). Third, according to the compensating differentials theory, mothers face wage penalties because they prefer “mother-friendly” jobs, allowing them to combine family and work activities (Becker 1981). Some features of these jobs (e.g. flexible hours, on-site day care, location near home, etc.) compensate for their lower earnings (Budig and England 2001; Amuedo-Dorantes and Kimmel 2008). Fourth, motherhood penalty may be explained by employer discrimination, either allocating mothers into less rewarding jobs or paying them less within the same jobs (Becker 1957; Phelps 1972). Some recent studies attempted to test directly discrimination by means of laboratory experiments and audit studies and they confirmed that employers discriminate against mothers (Correll et al. 2007).

Finally, the association between motherhood and wages might be spurious and driven by

selection bias. One source of selection arises from unobserved heterogeneity: mothers and non-mothers may differ by individual characteristics (e.g. family or work orientation, motivation, etc.) that cause both different earnings level and different fertility rates (Davies and Pierre 2005). Another source of selection is endogeneity or reverse causality: for instance, wages might affect childbearing, as it happens if women decide to become pregnant when their wages are low (Petersen et al. 2010; Miller 2011).

Few empirical studies focused on the motherhood penalty in Scandinavian countries. However, they showed that it is relatively low in comparative perspective, especially in Sweden (Harkness and Waldfogel 2003; Budig *et al.* 2010). Small disadvantages for Swedish mothers have been also found in other labour market domains, such as promotion chances (Bygren and Gähler 2012) and occupational prestige (Abendroth et al. 2014; Härkönen et al. 2016). In addition, research on Norway specifically tested some of the abovementioned explanations, finding that women with children earn less than childless women because they are more likely to work in lower-paying occupations and occupation-establishment units, whereas they do not suffer a penalty within the same job (Petersen et al. 2010; 2014).

Research on fatherhood premia is less frequent, since women are still considered as the primary responsible of childrearing activities and the main partner to be affected by the birth of a child (Lundberg and Rose 2002). Nevertheless, some studies have focused on the effect of children on fathers, although most of them have referred to it as linked to the marital premium (i.e. higher wages of married men with respect to unmarried men) (Isacsson 2007), suggesting three main explanations. First, married men and fathers may have higher incentives to work after marriage and/or the birth of a child. Primarily in a male breadwinner context, women provide most of household and childrearing activities and men focus on labor market activities (Becker 1981). This gender-specific division of labor coupled with the birth of a child might imply a stronger effort of men in the workplace, resulting in increasing labor market attachment, higher risks of stable employment, longer working hours and higher pay. Many studies show that marriage and fatherhood increase men's work productivity, working hours and wages and decrease the amount of time that female partner spend in the labor market (Korenman and Neumark 1991; Glauber 2008; Baranowska-Rataj and Matysiak 2014). Second, premia for married men and fathers may be explained by a "positive" employer discrimination. Unlike mothers, employers may hold positive opinions of married fathers, either because of societal norms arising from the male breadwinner model or because they consider them as more productive, on average, than single or childless men. According to this perspective, fatherhood is a signal of greater competency, ability and commitment.

Through laboratory experiments and audit studies Correll and colleagues (2007) confirm that employers do not discriminate against fathers.

Finally, even for men the association between parenthood and income might be driven by a selection bias. Factors that cause married men and fathers to be more productive and receive higher wages are the same factors that cause them to get married and to have children (Korenman and Neumark 1991; Glauber 2008). Furthermore, it is possible that high wages favor the decision to marry or to become parents (Petersen et al. 2011; 2014).

Evidence on fatherhood premia in Northern Europe confirms that these advantages are substantially lower than marriage premia, although statistically significant, as shown by some studies on Denmark (Datta Gupta and Smith 2002; Datta Gupta et al. 2007) and Norway (Petersen *et al.* 2011). If one focus on other labor market outcomes, findings do not differ. In Sweden, men have higher chances of promotion (Bygren and Gähler 2012) as well as higher occupational status (Härkönen et al. 2016) after fatherhood. Although not very strong, the occupational status premium is more visible than the motherhood penalty and it is increasing over time.

3. Cumulative parenthood effects over the life course

Most previous studies on the effects of parenthood on the incomes of women and men have focused on hourly wages levels or monthly earnings in a static framework. The interest has most commonly been on estimating the average penalties or premia in these outcomes. Often, the analytical samples have furthermore been limited to those currently employed, with the aim of estimating the gaps between the wages offered to parents versus non-parents rather than the total earnings losses or gains linked to parenthood. Fewer studies have considered the earnings effects of parenthood from a life course perspective (Elder et al. 2003) with a focus on the accumulated gains and losses over the life course. Such a focus is for many reasons important, not least because long-term earnings are an important determinant of future pensions and other social benefits.

Some studies have shown that parenthood effects persist long after the child is born. For example, Livermore and colleagues (2011) found that in Australia, the wage penalty emerges over time through reduced wage growth rather than through an instantaneous decrease after the birth of a child, especially because of employers' discrimination and a reduction in job effort. Viitanen (2014) shows that the magnitude of motherhood penalty in UK varies over the life-course, but it persists even after 30 years after the birth of a child. On the other hand, Loughran and Zissimopoulos (2009) find that childbearing immediately decreases mothers'

wage, but it does not influence wage growth, differently from marriage, which negatively affects earnings in both the short- and long-run. Kahn and colleagues (2014) find a similar result, showing that the wage gap between mothers and childless women in the US almost disappears for those who have no more than two children, but it remains constant over the life-course for higher parity mothers. Furthermore, the impact of motherhood on labor force participation attenuates over time, presumably because of counter pressures to increase their labor supply to afford the financial needs of older children.

Long-term motherhood penalties are found for other labor market outcomes as well. For instance, Abendroth and colleagues (2014) find that occupational status losses accumulate over the life-course across different countries: motherhood does not impact only after childbirth, but its negative consequences increase over time, probably because of the cumulative effects of forgone opportunities. Furthermore, Härkönen and colleagues (2016) show that in Sweden, motherhood penalty in occupational prestige is negligible immediately after the birth of a child and become visible only some years later, probably as the result of subsequent childbearing, whereas in Germany careers of childless women progress more than those of mothers.

Finally, Sigle-Rushton and Waldfogel (2007) compared long-term earnings of mothers as compared to childless women and men in several countries, using cross-sectional data from the Luxembourg Income Study to predict average earnings trajectories for women following hypothetical life course scenarios. They found that in the Nordic countries, mothers earned on average 9-14 per cent less than childless women; furthermore, the earnings gap depended on whether one had one or two children. These penalties were smaller than in Canada and the United States, and than in the Netherlands, Germany, and the UK in particular. In addition, and of particular interest to our study, the authors also estimated hypothetical earnings trajectories by age. In Sweden, parenthood (and subsequent children) lead to a rather substantial initial decline in earnings, but the gap subsequently diminishes and later closes. Over the life course, however, the relatively long persisting gap in annual earnings can nevertheless accumulate into a sizeable penalty, as also shown by Lersch and colleagues (2017) regarding wealth, finding that in Germany the personal wealth accumulation of mothers is much lower compared to non-mothers, especially because of their discontinuous employment experiences.

Concerning fathers, studies are even scarcer and show mixed results. On the one side, Keizer and colleagues (2010) compare fathers and childless men in The Netherlands and find that the former have most favorable economic positions over the life-course, given the

normative pressure to be a “good provider”. Härkönen and colleagues (2016) show similar results measuring the occupational status: fatherhood premium increases over time since the birth of the child, mainly among very young Swedish cohorts. On the other side, in the US fatherhood has not a significant impact on men’s wage growth (Loughan and Zissimopoulos 2009), as well as in Germany, where parenthood does not generally affect wealth accumulation. Moreover, marriage lowers the wage growth, presumably through constraints that affect male career development and accumulation.

Only few studies have explicitly focused on the importance of the timing of parenthood. However, from the point of view of accumulative earnings effects, the timing of parenthood is of crucial importance. The longer parenthood penalties persist (i.e. the earlier the birth of a child), the bigger their cumulative effect. Beyond simply mechanistic relationships, parenthood timing can affect earnings also because those who postpone parenthood have more time to accumulate work experience and wages prior to childbirth, whereas early parents might lose human capital exactly when careers are developing and earnings are more likely to increase (Mincer 1975). For example, two studies have found a higher motherhood penalty for American women who became mothers relatively early (Taniguchi 1999; Miller 2011). Miller (2011) reported that motherhood postponement leads to an increase in earnings of 9 per cent per year of delay and an increase in wage rates of 3 per cent. Furthermore, she found that mothers’ earnings decrease around the time of first birth and the wage profile becomes flatter thereafter, concluding that early mothers are not able to catch-up childless women and late mothers over time. Small decreases in wage growth at relatively young ages could result in large decreases in lifetime earnings (Loughan and Zissimopoulos 2009) and wealth accumulation (Lersch et al. 2017), even though the findings by Abendroth and colleagues (2014) suggest that postponing parenthood does not decrease occupational status penalty over the life-course.

Results for fathers point in the same direction, without finding any accumulation of fatherhood premia. Dariotis and colleagues (2011) show that teen fathers in the US have cumulative disadvantages with respect to early 20s fathers, such as lower earnings at older ages. According to the authors, early fatherhood limits the acquisition of human capital by interrupting education or by preventing fathers from putting extra effort to acquire human capital at work, which in turn limits opportunities for later human capital acquisition and makes disadvantages accumulate over the life-course. Focusing on the same country but on another outcome, namely working hours, Weinshenker (2015) finds similar results. Early fathers work longer hours immediately after childbirth, especially if unmarried, but in the

long-term they work less as a result of parenthood. On the contrary, those who become fathers later increase work hours over time.

4. Data, variables and methods

We use data from the Swedish population registers, which include income, socio-demographic, education and labor market data as well as childbearing histories on all residents in Sweden. We focus only on individuals born in Sweden for whom there is information for at least one biological or adoptive parent. We selected the cohorts born between 1972 and 1981, which we followed from 1990 until 2012.¹ After excluding foreign-born individuals as well as those for whom we lack information for the whole observation period (usually due to stays abroad or due to mortality), the final analytical sample includes 941,031 individuals and 17,132,602 person-years.

The main dependent variable is the natural log of yearly income from work and self-employment, adjusted for inflation with year 2010 as the baseline.² Because we are interested in life course earnings trajectories and the accumulation of earnings, we include women and men into the analyses regardless of employment. The natural log of earnings for those without incomes for a specific year was set to zero. This is a novel strategy in the literature, which also helps us to control those biases driven by selection into employment, primarily for women. Indeed, by including both employed and unemployed or inactive women in the analysis, we can control the fact that those who work are not a random sample drawn from the population, but they are selected according to observed and unobserved characteristics, especially if they have already had a child.

Our main independent variables measure the time since one has become a parent, starting from pregnancy. These are entered as dummy variables, one for the time during pregnancy, and yearly dummies until the sixth year and from the nineteenth to the twenty first year after the birth of the first child, whereas from the seventh to the eighteenth year since parenthood we use 3 yrs dummies. We performed several alternative specifications of the independent variables (e.g. time since parenthood including also yearly dummies for the three years before

¹ Since available data cover the period from 1990 to 2012, we are interested in studying life-course trajectories from age 18 to 40. Therefore, our main focus is the cohort born in 1972. However, we decided to include also earlier cohorts in the analysis in order to control for the potentially difficult labor market-entry of the 1972 cohort, which took place during a period of economic recession and high unemployment in Sweden (1990-1993).

² We also performed analysis using the yearly income from work, self-employment and other social benefits (e.g. illness, parental leave, social assistance, pensions, etc.) as dependent variable and results do not substantially differ.

the first birth) and the results were substantially the same (results are available upon request).

To capture the basic age pattern of earnings growth, we control for age using splines (18-20, 21-22, 23-27, 28-31, 32-35, 36-38, and 39-40 years), which enable flexible specification of non-linear age patterns. Additionally, we control for period effects to account for macro-economic trends (1990-1993; 1994-1996; 1997-2000 (reference); 2001-2006; 2007-2012), educational attainment (less than completed secondary, secondary, lower tertiary, and tertiary) and educational enrolment (dummy).

We analyzed these data using fixed effects (FE) panel regression models (Wooldridge 2002). FE models carry the advantage of controlling for all time-invariant observed (e.g. social background, birth cohort, etc.) and unobserved factors (e.g. personality, ambition, preferences, career and family orientation, and so on) which can affect both parenthood and earnings. In other words, these models control for the unobserved heterogeneity bias, according to which individuals (in our case, mothers and non-mothers, fathers and non-fathers) can differ according to unobservable characteristics that bias the results if they are omitted from the models (Baltagi 2005). Hence, by estimating the effects from within-individual variation, the estimates tell how parenthood affected earnings of each individual.

Our analysis can be interpreted as a version of Growth Curve Analysis (Halaby 2003; Steele 2008), which is a method recently recognized in the study of occupational attainment and social mobility across the life-course (Härkönen and Bihagen 2011; Barone *et al.* 2011; Manzoni *et al.* 2014; Härkönen *et al.* 2016). Growth curve models can be distinguished from other panel regression models by their explicit attention on the time variables, in our case age and time since parenthood. By including age splines, we can in fact estimate the general age trajectory of earnings growth. By including covariates on the time since parenthood, we can further estimate the trajectory of the earnings effects of parenthood over the life course. Our main growth curve model can be written as

$$y_{it} = \alpha + \sum_{k=1}^7 \beta_{1k} Age_{itk} + \sum_{l=1}^{14} \beta_{2l} SinceKid_{itl} + \beta_3 Preg_{it} + \beta_3 Z_{it} + \varepsilon_{it},$$

where *Age* captures how earnings change with an additional year in the life course, *SinceKid* measures how earnings change with an additional year of parenthood, *Preg* estimates how earnings change during the year of pregnancy and *Z* includes a set of time-varying control variables (see above).

Our use of longitudinal data over ages 18 to 40 together with fixed effects modeling

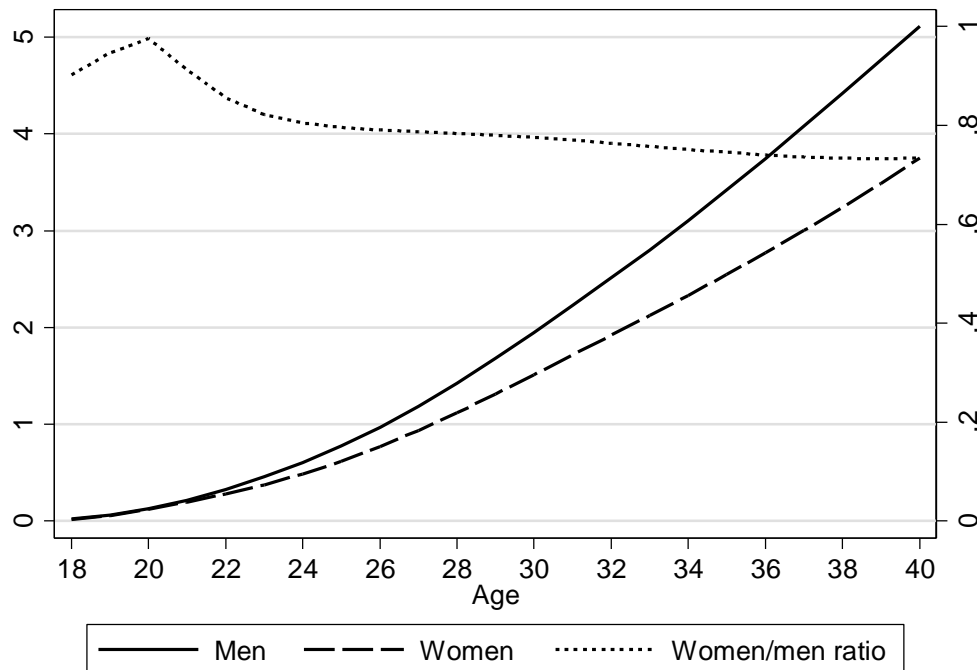
enables us to estimate trajectories and long-term earnings penalties from individual-level time-series, clean from bias from time-constant unobserved variables, which presents an advantage to similar previous analyses based on cross-sectional data (Sigle-Rushton and Waldfogel 2007). A limitation of fixed effects models is, however, that they do not control for time-varying unobserved variables.

The empirical strategy analyses men and women, separately. First, we estimate the effect of first parenthood on earnings trajectories over the life-course, especially focusing on timing of motherhood and fatherhood. To present a clearer picture of the parenthood effects on earnings trajectories, we plot the predicted annual earnings based on the model estimates, comparing childless women and men to those who became parents at ages 24 and 34, respectively. The control variables are kept at their reference values. Then, we study if (timing of) parenthood affect cumulative earnings. Therefore, from the predicted earnings trajectories, we calculated the cumulative earnings trajectories of parents at age 24 and 34, relative to childless women and men, respectively.

5. Empirical results

Before presenting results from our FE growth curve models, we report some descriptive findings on cumulative income and on the relationship between age at first birth and cumulative income. Figure 1 shows the accumulated income from ages 18 to 40 for women and men, together with their ratio. The difference between men's and women's cumulative income starts in the early twenties and continues to increase. On average, cumulative incomes do not differ by gender at age 20, but women's accumulation is already 80 per cent of men's five years later: 776,144 SEK is the average cumulative income for men at age 25, whereas it is 617,733 SEK for women. Women's accumulation is then 3,751,463 SEK at age 40, 37 per cent less than men's (5,109,995 SEK) are.

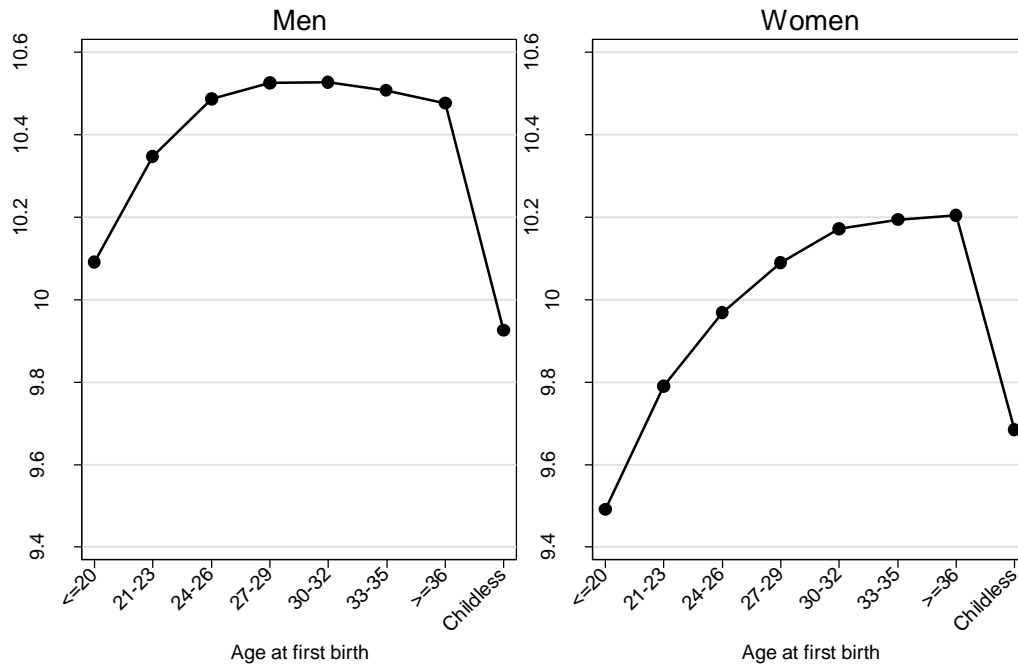
Figure 1. Mean cumulative income by age and gender and Women's cumulative earnings as a percentage of men's cumulative earnings



Source: Swedish Registers (1990-2012)

Figure 2 shows predicted values of cumulative income in 2012 (at age 40) by age at first birth, from simple OLS models. The results show that for women, in particular, postponement was associated with higher accumulated incomes. For men, most of the positive association between age at first child and the cumulative income seems to occur between the ages of 21 to 26, whereas the relationship is flat for later ages. For women the cumulative incomes continue to increase with increased age at becoming a mother up to the early thirties where the growth seems to level off. Obviously, these figures do not include control variables and also reflect other life course differences, such as educational attainment and graduation. Interestingly, childlessness is associated with a lower cumulative income both among women and among men. This finding, especially for women, appears to contradict much of what is known before. However, additional inspection of these findings reveals that this dip is driven by women and men, who do have earnings only from a few or no years, in many cases potentially reflecting poor health and disabilities.

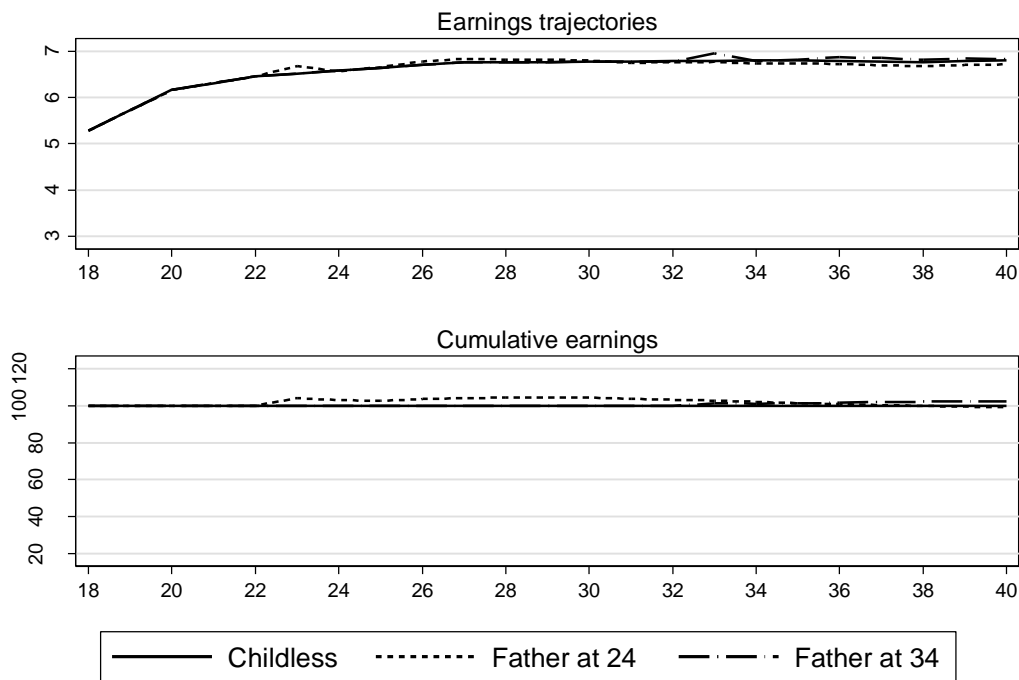
Figure 2. Predicted cumulative log(income) at age 40, by gender and age at first birth. OLS



Source: Swedish Registers (1990-2012)

We now turn to the analysis of the effect of parenthood and its timing on earnings trajectories. The upper panel of Figure 3 presents the earnings growth trajectories predicted from the FE regressions in hypothetical scenarios in which men have their first child at age 24 compared to age 34. These are compared to those who remained childless. Results show not relevant differences according to fatherhood and its timing, but only a modest and temporary premium after the birth of the first child, as shown by the literature (e.g. Glauber 2008). Moreover, earnings slightly grow during the year before the first birth. This probably reflects selection to timing of fatherhood when earnings have increased, which affects the level of parental benefits, as confirmed by additional analysis including also dummies for earlier years before parenthood. However, this increase in earnings does not reflect in a permanent premium for fathers and earnings do not substantially change at age 40 according to (timing of) fatherhood.

Figure 3. Predicted logged earnings trajectories and cumulative earnings of childless men, fathers at age 24 and fathers at age 34. FE growth curve models. Controls: educational attainment, educational enrolment, calendar year



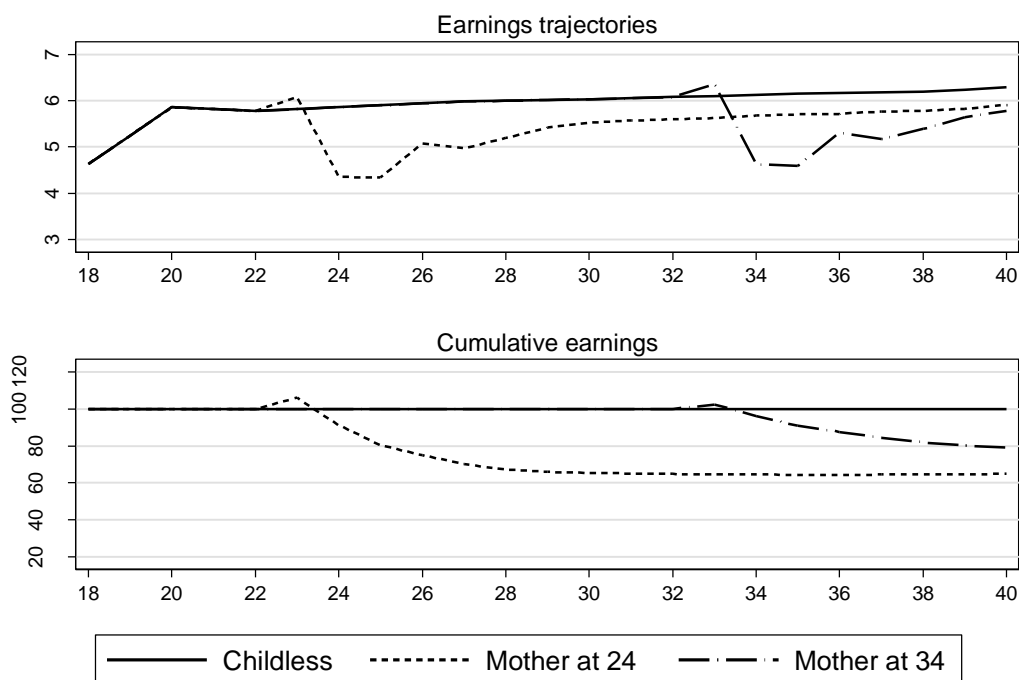
Source: Swedish Registers (1990-2012)

The lower panel of the graph shows cumulative earnings over the life-course for fathers at 24 and fathers at 34, with childless men as the baseline (set at 100). Values above 100 indicate that fathers have accumulated higher earnings than non-fathers, vice-versa for values below 100. If values are equal to 100, then cumulative earnings do not change according to parenthood. The figure shows that the very small fatherhood premium does not translate in a relevant higher accumulation of earnings for fathers, independently from age at first birth. Indeed, differences in cumulative earnings between young fathers and those still childless appearing around the birth of the child are erased at age 40, whereas those who have postponed the first birth have only accumulated 2 per cent more earnings by age 40 than childless men.

Figure 4 shows the corresponding results for women using the same hypothetical scenarios (mothers at 24 and 34 compared to childless women). Unlike men, women have very different earnings trajectories according to parenthood and its timing. First, results show a slight increase in earnings during pregnancy, which is probably related to selection into (timing of) motherhood. Even women, hence, seem to decide to have the first child when their earnings are increasing, as confirmed by robustness checks showing steeper careers for

future mothers during the three years before first birth compared to childless women. However, findings show a sharp drop in earnings immediately after becoming a parent, which reflects the reduced labor supply of mothers of small children. Earnings recover partly after this drop, but remain lower than for childless women, probably because of allocation of mothers in flexible jobs with part-time contracts and lower wage.

Figure 4. Predicted logged earnings trajectories and cumulative earnings of childless women, mothers at age 24 and mothers at age 34. FE growth curve models. Controls: educational attainment, educational enrolment, calendar year



Source: Swedish Registers (1990-2012)

Timing of motherhood is not a crucial factor behind earnings differences at age 40, since the gap between mothers at 24 and mothers at 34 is very small at the end of the observational window. However, since motherhood has a long-term negative effect on earnings, postponing parenthood has positive effects on cumulative earnings, as shown in the lower panel of Figure 4, because who became mothers at a later age experience penalties for a shorter time. Findings suggest major cumulative earnings penalties of motherhood, which are considerably smaller for women who became mothers at a later age. Women who had the first child at age 24 have accumulated 35 per cent less earnings by age 40 than childless women, whereas women who became mothers at age 34 have 20 per cent less in accumulated earnings than childless women. If we compare mothers, those who had their first child at age 24 have

accumulated 20 per cent less earnings by age 40 than those who became mothers ten years later.

6. Conclusions

Research has extensively studied ‘motherhood penalties’ and ‘fatherhood premia’, but only few studies focused on the effect of parenthood over the life-course and its potential effects on long-term earnings and accumulation of income. This work aimed to fill this gap, by analyzing how (the timing of) becoming a parent affects earnings trajectories as well as accumulated earnings over the life course in Sweden. Focusing on a more holistic methodological perspective, our analysis extended previous findings from the literature, showing that parenthood has different effects on earnings trajectories according to gender. Fatherhood is related to a modest and only temporary increase in men’s earnings, which however does not translate in substantive premia for fathers across the life course. Conversely, motherhood strongly affects women’s earnings in the very short run, given the temporary labor market withdrawal for mothers with small children, favored by parental leave policies. Nevertheless, this drop becomes permanent in the long-run, and mothers cannot catch up to earnings trajectories of childless women, at least up to age 40, independently from the timing of motherhood.

Our analysis also showed that these negative effects of motherhood accumulate into long-term penalties, and mothers accumulate around 20-35 per cent less earnings at age 40 than childless women. In this situation, mothers who postpone childbearing can substantially reduce these long-term disadvantages, because they experience income penalties for a shorter time and they have also more time to accumulate experience, skills and earnings before forming a family (Mincer 1975; Sigle-Rushton and Waldfogel 2007; Miller 2011). Concerning men, cumulative earnings at age 40 do not differ according to fatherhood and its timing.

Taken together, these findings point to major long-term gender earnings inequalities, which are not likely to emerge if one study only the ‘average’ effect of parenthood on wage, as shown by previous literature (Harkness and Waldfogel 2003; Budig et al. 2010). These inequalities exist even in a country like Sweden, which is known for its family-friendly social policies aimed at favoring gender equity and encouraging women’s careers (Korpi 2000; McDonald 2000). Nevertheless, women are still the major responsible for childrearing and even in Sweden they take the highest share of parental leave (Albrecht et al. 1999), increasing the probabilities of withdrawing the labor market immediately after parenthood (Duvander et

al. 2010). Moreover, gender inequalities emerging around the first birth establish in the long-run, since earnings penalties for Swedish mothers accumulate into long-term penalties over the life course, also because mothers are more likely to work in occupations that penalize their wage growth (Magnusson 2010). If we consider that life-course earnings (partly) determine pensions, these gender inequalities will also persist later into the life course.

The findings also suggest that postponement of motherhood helps to alleviate cumulative earnings penalties. From this point of view, thus, our answer to the question raised in the title is positive (for women). Postponing parenthood can help women to reduce penalties in accumulation of income and, hence, gender inequalities. Moreover, because the timing of parenthood is related to socioeconomic resources (Andersson 2000) and social background (Dahlberg 2015), timing of motherhood can affect inequalities by these factors and their intersections with gender.

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