European Economic Review 000 (2018) 1–21

Contents lists available at ScienceDirect

European Economic Review

journal homepage: www.elsevier.com/locate/euroecorev

The role of parenthood on the gender gap among top earners☆

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ARTICLE INFO

Article history:
Received 7 February 2017
Accepted 11 May 2018
Available online xxx

Keywords:
Top earners
Gender differences
Child penalty

ABSTRACT

Is the wage penalty due to motherhood larger among highly qualified women? In this paper, we study the effect of parenthood on the careers of high-achieving women relative to high-achieving men in a set of high-earning professions with either nonlinear or linear wage structures. Using Norwegian registry data, we find that the child earnings penalty for mothers in professions with a nonlinear wage structure, MBAs and lawyers, is substantially larger than for mothers in professions with a linear wage structure. The gender earnings gap for MBA and law graduates is around 30%, but substantially less for STEM and medicine graduates, 10 years after childbirth. In addition, we provide some descriptive statistics on the role of fertility timing on the child earnings penalty.

1. Introduction

In recent decades, gender differences have converged in relation to labor force participation, paid hours of work, hours of work at home, lifetime labor force experience, and occupations (Blau and Kahn, 2017; Goldin, 2014). In addition, women have outnumbered men in higher education for several decades (see, e.g., Goldin et al., 2006). However, despite a considerable decrease in the gender wage gap, substantial gender inequality persists in many industrialized countries. Recent literature has shown that the convergence in earnings has been slower in the upper part of the earnings distribution, where middle-aged men remain dominant in the highest earning occupations (Albrecht et al., 2003; 2015; Arulampalam et al., 2007; Bertrand et al., 2010). Moreover, in 2016, only 5% of the largest publicly listed companies in the European Union had a female CEO and only 7% had a female chairperson on the board (European Union, 2016).

A large and growing literature suggests that the career paths of women are negatively affected by childbearing (see, e.g., Angrist and Evans, 1998; Bronars and Grogger, 1994) and that the gender wage gap increases at the onset of parenthood (Angelov et al., 2016; Bertrand et al., 2010; Goldin, 2014; Kleven et al., 2018; Paull, 2008). There are several potential explanations for this divergence in wages postbirth. First, there is empirical evidence that the labor force participation of women changes at both the extensive and the intensive margin postbirth (Angelov et al., 2016; Kleven et al., 2018). Second, Hotz et al. (2017) document a strong tendency for job changes to more family-friendly firms following childbirth. Finally,

☆ We gratefully acknowledge comments by two anonymous referees, Marco Francesconi, and conference participants at the 31st Annual Conference of the European Society for Population Economics. This work was partially supported by the Research Council of Norway through its Centres of Excellence Scheme, FAIR project no. 262675, and by NORFACE-DIAL project no. 462-16-091.

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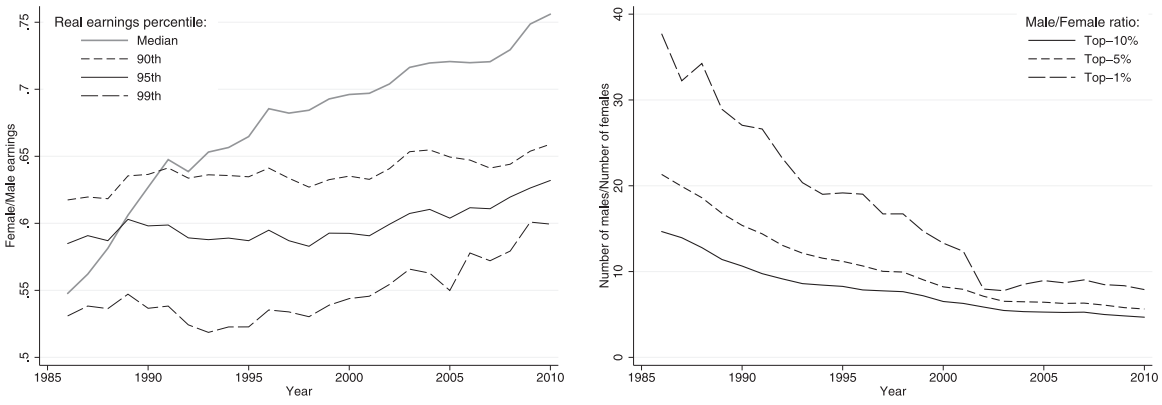
https://doi.org/10.1016/j.euroecorev.2018.05.008
0014-2921/



(a) Gender gap in earnings (b) Female representation

Fig. 1. Gender gap in earnings in Norway, 1986–2010.
Note: Panel (a) plots the female–male ratio of median yearly earnings from 1985 to 2010. Panel (b) plots the number of men per woman in the top 10%, 5%, and 1% of the earnings distribution from 1985 to 2010. Both panels include earnings data for the working age population (24–64 years).

Goldin (2014) and Goldin and Katz (2016) present evidence of heterogeneity in child wage penalty for college-educated women across majors. They argue that the production structure or work organization differs across industries; in particular, Goldin (2014) documents that in some occupations, increasing the number of hours worked per month has a large effect on earnings, indicating a disproportionate and strongly convex earning structure. Hence, there is a very large increase in compensation for workers who can work for long hours and particular hours, even though they may not have a higher level of human capital than other workers. One reason for this is that, in some professions, e.g., trial lawyers or consultants, the roles cannot be easily performed by other workers who are not close substitutes. Hence, there is a high demand and, correspondingly, high compensation for personalized services and face-to-face time in these sectors. As a result, some professions have a highly nonlinear or convex wage structure. If mothers of young children prefer more flexible hours and shorter workdays, sectors with a nonlinear wage structure, such as professions in the finance and consulting sector, are less attractive and, therefore, mothers might be willing to trade lower pay for more flexible work hours. Hence, the wage penalty for motherhood might be much stronger in sectors with a nonlinear wage structure. On the other hand, in science, medicine, and pharmacy, tasks are less personalized, working hours are better regulated, and the wage structure is more linear (Goldin and Katz, 2016). Thus, the wage penalty for motherhood might be less pronounced in these professions.

In this paper, we extend the most recent literature from the US, which documents that the largest child earnings penalties occur among highly skilled women (Azmat and Ferrer, 2017; Bertrand et al., 2010; Wilde et al., 2010). More specifically, Goldin (2014) and Goldin and Katz (2016) present evidence of heterogeneity in child wage penalty for college-educated women across majors. We extend this work by using rich, population-wide register data to compare the effect of parenthood on the careers of high-achieving women relative to high-achieving men in a set of high-earning professions, which differ with respect to the convexity of wage structures. We analyze the effect of having a first child by examining how career trajectories are affected by the sudden increase in time constraints, following the approach of Kleven et al. (2018). The career effect is calculated as the percentage change in annual pretax earnings following childbirth, relative to the year before the event. We use rich Norwegian population-wide, register data to compare the effect of parenthood on the careers of high-achieving women relative to high-achieving men in a set of high-earning professions. We define high achievers as men and women who have completed a graduate degree in one of four professional areas – an MBA, law, medicine, or science, technology, engineering and mathematics (STEM) – who rank among the top 20% earners compared with others with the same degree and from the same graduating cohort, in any of the first three years after graduation. Hence, we focus on a subset of the population with very high potential earnings who are likely to end up in professions with different wage structures.

Norway and other Nordic countries are particularly interesting to study, as a substantial gender wage gap remains in these countries, despite the fact that they are at the forefront of implementing various gender-equalizing policies. These policies include extensive parental leave programs, universal day care, and generous sickness leave insurance (Carneiro et al., 2015; Havnes and Mogstad, 2011). In international rankings, Norway is ranked number one in terms of opportunities for women (World Economic Forum, 2016). Gender differences in labor force participation rate have steadily decreased in recent decades. In particular, the participation rate of women with young children (six years old or younger) has increased dramatically to about 80%, and is currently almost at the same level as the participation rate of women without children. Moreover, the median unconditioned earnings gap between men and women has narrowed steadily since 1980 (see panel (a) of Fig. 1) and is currently around 75%. However, this general picture contrasts with the low representation of women in the upper part of the earnings distribution. Panel (b) of Fig. 1 counts the number of men per woman at different parts of

Please cite this article as: A. Bütikofer et al., The role of parenthood on the gender gap among top earners, European Economic Review (2018), https://doi.org/10.1016/j.euroecorev.2018.05.008