

Children and gender inequality: Evidence from Denmark

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Despite considerable convergence over time, substantial gender inequality persists in all countries. Using Danish data, this column argues that this gap persists because the effects of having children on the careers of women relative to men are large and have not fallen over time. Additional findings suggest this effect may be related to inherited gender identity norms.

The last century has brought considerable convergence in the labour market outcomes of men and women. However, despite the reversal of gender gaps in educational achievements and the implementation of strong anti-discrimination policies, a significant amount of gender inequality in earnings and wage rates remains in developed countries, and the process of convergence appears to have slowed down (Blau and Kahn 2018).

In a recent paper ([Kleven et al. 2018](#)), we provide a simple explanation for the persistence of such significant levels of gender inequality – the effects of children on the careers of women relative to men are large and have not fallen over time. As a result, almost all of the remaining gender inequality can be attributed to children.

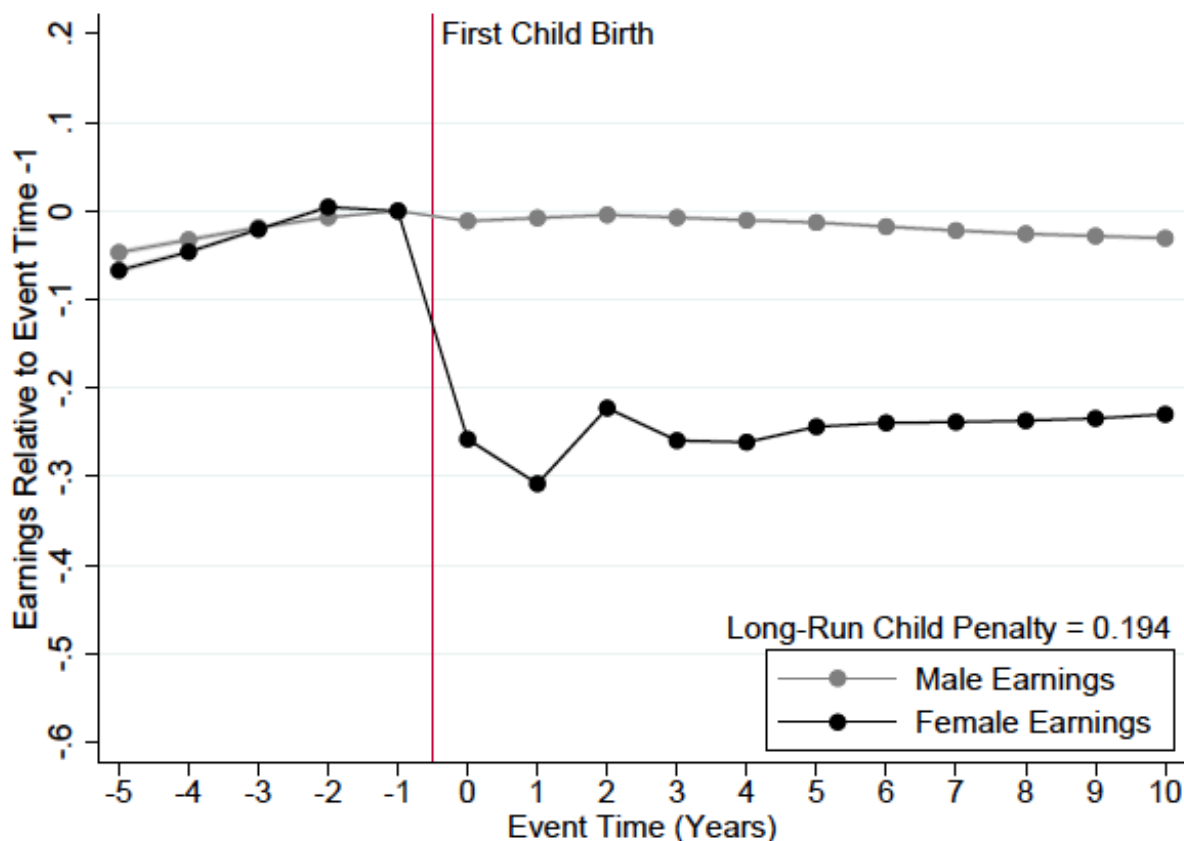
To reach this conclusion we leverage unique administrative data for the full population of Denmark since 1980 and follow couples who have a child together over a period from five years before they have their first child to ten years after. For a range of labour market outcomes, we find large and sharp effects of children – women and men evolve in parallel until the birth of their first child, diverge sharply immediately after childbirth, and do not converge again.

This phenomenon is best exemplified in Figure 1. The figure shows the evolution of total labour market earnings of men and women over time relative to the year of birth of their first child, while controlling for the underlying wage growth in the economy and the effect of individuals getting older and more experienced over time. In the years up to the birth of the first child, men and women follow almost the same trend, but in the years just after the birth, the earnings of women drop by on average 30%.¹

This 30% gap is driven in part by labour supply adjustments, as women take the majority of the parental leave granted to Danish parents. But interestingly the earnings of women are still depressed by almost 20% even after ten years, reflecting a large and significant gender gap in wage rates. Investigating the sources of this wage rate gap, we document the fact that women adjust many margins of their behaviours in the labour market (occupation,

family friendliness of the working environment, career track, etc.) after the arrival of children, while men do not. All these adjustments combined have large and significant effects on the dynamics of wage rates for women with children.

Figure 1 The impact of children on the earnings of men and women



Note: The graph shows estimates of the evolution of the earnings of men and women as a function of the time in years since the birth of their first child, while controlling for the underlying life-cycle profile of earnings. Estimates are relative to the earnings level of event time -1, that is the last year prior to the birth of the first child.

Source: Kleven et al. (2018)

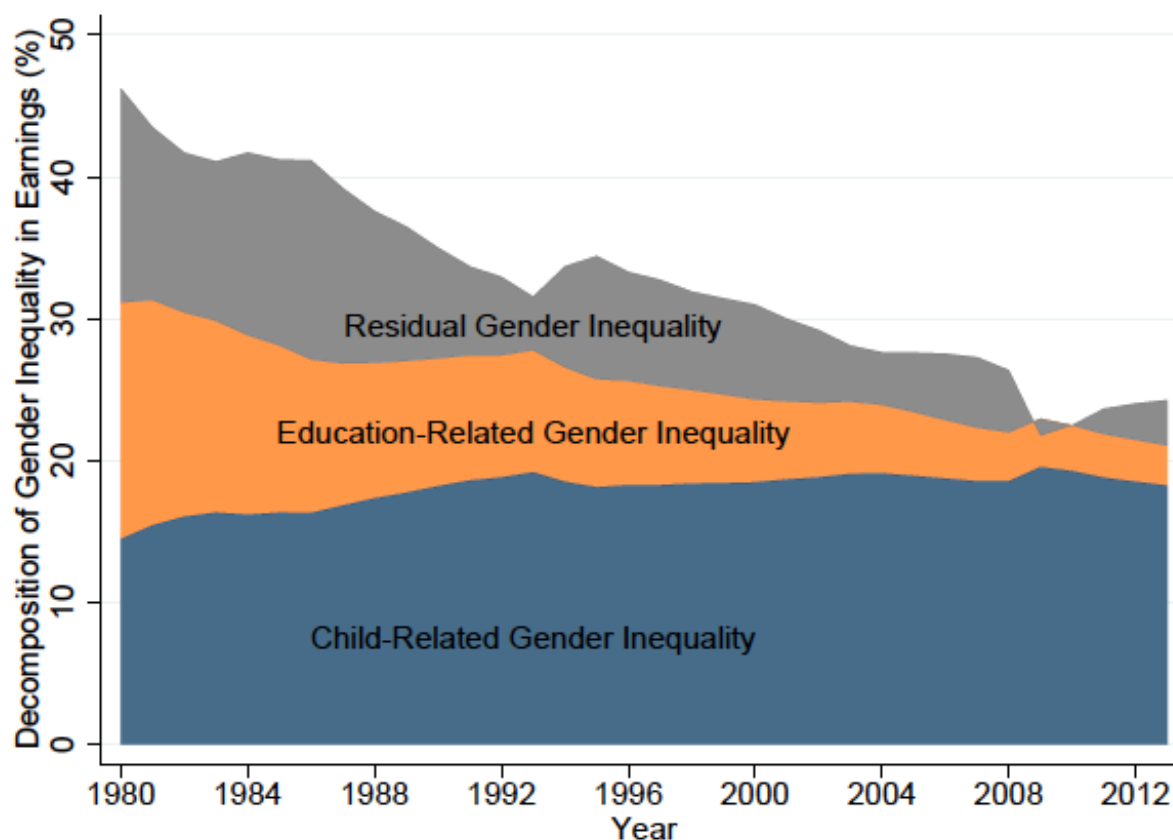
Having estimated the effect of children on the labour market earnings of men and women, we return to the total population and ask how much of the overall earnings gap between men and women can be explained by the differential effect of children.

As shown in Figure 2, we find that the fraction of the total earnings gap caused by children has doubled over time, from about 40% in 1980 to around 80% in 2013. This dramatic change reflects a combination of two underlying changes:

- child-related gender inequality in earnings has increased from about 18% to 20%; and
- total gender inequality in earnings has fallen from about 46% to 24%.

To understand why child-related gender inequality has increased, note that although the percentage effect of children on the earnings of women has fallen slightly over time, the penalty now operates on a larger base due to the general increase in the earnings of women relative to men driven by higher educational attainment of women.

Figure 2 Decomposition of the aggregate gender gap



Note: The figure decomposes the total cross-sectional gender gap in earnings every year since 1980 in Denmark between the effect of children, the effect of education, and all other factors (residual inequality). The dynamic Oaxaca-Blinder decomposition uses the estimated effects of children in Figure 1 to compute counterfactual earnings for women with children, i.e. estimates of what the earnings for women with children would be in the absence of differential ‘child penalties’ on women compared to men. Moving from the actual to the counterfactual earnings for women with children reduces the total gender gap by the amount indicated by the bottom dark-blue area.

Source: Kleven et al. (2018)

Taken together, these results show that while gender inequality in education has declined massively over the past 30 years, child-related gender inequality has persisted and, as a consequence, appears to explain most of the earnings inequality between men and women remaining today.

Following this insight, it is natural to ask why the arrival of children still disproportionately affects women after decades of effort to create gender equality through equal opportunity legislation, childcare policies, and job-protected parental leave. One possible explanation is that the effects that we are observing are driven by gender norms and that these norms only change slowly over time.

To probe into this effect, we examine the correlation between the effect of children on women and the labour supply history of grandparents. We find that the effect is strongly related to the labour supply history of the *maternal* grandparents but not the *paternal* grandparents, even after controlling for a rich set of family characteristics. For example, in traditional families where the mother works very little compared to the father, their daughter is more negatively affected by the arrival of children when she eventually becomes a mother herself.

These results are related to the work by Fernandez et al. (2004) as well as to recent work

on the importance of gender identity norms for labour market outcomes (Bertrand 2011, Bertrand et al. 2015) and our findings suggest that female gender identity is formed during a girl's childhood based on the gender roles of her parents.

References

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Endnotes

[1] Note that this is the total effect of children including the effects of children born after the first one. We show that the drop is indeed increasing in the number of children (roughly 10 percentage points per child).