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Can Financial Incentives Reduce the Baby Gap? Evidence from a Reform in Maternity Leave Benefits

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As women's educational attainment and labor market participation have increased, so too have concerns about decreasing birth rates and below-replacement fertility levels. A phenomenon – which I call the “baby gap” – has received far less attention. The baby gap describes the fact that, for highly educated and high-earning women, childbearing has higher opportunity costs than for their lower-educated and lower earning peers, and they tend to have fewer children over their lifetime as a result. As a consequence, there exist sizable education and income-related gap in the number of children born and the share of childless women in virtually all developed countries as shown in Table 1. Close to one-third of highly educated women in Germany never have a child, compared to 18% of women with no postsecondary schooling. However, in countries with traditionally generous family policies, such as Sweden, this gap in childlessness or number of children are smaller. The question arises whether the structure of family policies may affect fertility patterns.

Table 1: Fertility indicators by education level (completed fertility)

	Average number of children per woman		% childless	
	low	high	low	high
US	2.56	1.81	12%	20%
UK	2	1.4	15%	30%
Germany	2.06	1.31	18%	31%
Sweden	2.1	1.8	14%	18%

Notes: Panel A reports total fertility rates across various country, information is based on Worldbank Development indicators and information by national Statistical offices. In Panel B I report completed fertility rates for cohorts born around 1965 for women without a secondary schooling degree (in the case of UK and Sweden, for women who only completed the minimum compulsory schooling) and women with tertiary education (college degree for US). See notes in Table 1, Raute (2019) for data sources.

All OECD countries other than the US provide paid maternity leave which provides employment protection and some degree of earnings replacement. The primary goal of such policies is to facilitate family and career compatibility and improve child welfare. A second, yet understudied aim, is to increase fertility by lowering

the opportunity cost of childbearing. Much of the prior literature on family policies focuses on the fertility effects of cash transfers and welfare programs (e.g. Milligan 2005; Cohen et al. 2013; González 2013) that provide greater incentives for lower-income mothers than higher-income mothers rather than paid leave. However, given the increasing popularity of parental leave schemes across countries, providing causal evidence on whether earnings-related paid leave can successfully help to raise fertility rates, particularly for women with higher opportunity costs, is highly policy-relevant.

The German reform in maternity leave benefits and the research design

I analyse the fertility effects of a 2007 legislative reform in Germany, that substantially changed the way it compensated mothers for time out of the labor market by introducing a “Scandinavian-style” maternity leave system. Before the reform parents were eligible for flat, means-tested benefits totalling an average amount of around 4,000 EUR, irrespective of the mother’s pre-birth earnings. Since 2007, the new scheme offered mothers generous income replacement of at least 67% of pre-birth income with benefits up to 21,000 EUR. It also guaranteed a basic transfer of at most 3,600 EUR for women who were not in the workforce pre-partum. Clearly, highly educated and higher-earning women benefited substantially from the reform, whereas very low-earning women were potentially worse off.

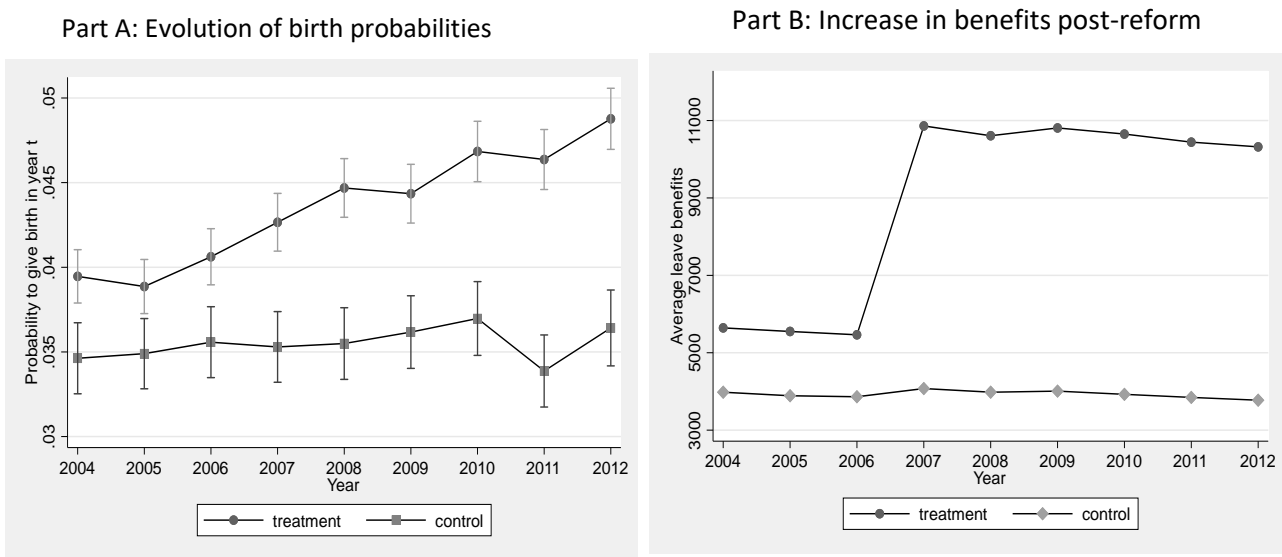
My research design exploits exactly these differential changes in parental leave benefits across earnings and education groups to identify the fertility effects of the German reform. In a differences-in-differences approach, I compare fertility among “winners” and “losers” before and after the reform. My analysis is based on comprehensive administrative data from the German Pension Registry that records precise information on earnings, education and fertility for all women insured under the statutory pension insurance schemes.

Findings

Bringing together the empirical strategy and the data reveals that the reform had substantial pro-natal effects. Figure 1 depicts the differences-in-differences strategy, where I compare the fertility developments of women with earnings of at least 5850 EUR net, who benefitted substantially from the reform by on average 5000 EUR (treatment group), with those earning below (control group), who did not benefit on average (Panel B). Part A shows the changes in average fertility of higher-earning versus lower-earning women between 2005-2012. After 2007, the probability to give birth increases sharply for women above the earnings threshold, but stays roughly constant for the control group.

I estimate that the reform increased the fertility of women in the treatment group within the five-year post-reform period by up to 16% percent compared to those with very low earnings. My analysis further reveals that the reform raised fertility for all women earning median earnings and above, including the top 10 percent of female earners. Overall, each additional 1,000 EUR in potential benefit entitlements raises the probability to have a child by over 2% every year after the reform. In addition, I find evidence for a medium-run change in the socioeconomic structure of fertility. The fertility of highly educated women increased by up to 23 percent compared to that of less-educated women. These findings are a strong indicator that the reform did indeed help to narrow the baby gap.

Figure 1: Evolution of fertility and benefits for women with high vs. low earnings



Notes: Graph in Part A shows the evolution of mean birth rates between 2004 to 2012 for women above (treated) and below (control) earnings of 5,850 EUR, equivalent to the 35th percentile of the earnings distribution (with 95% Confidence Intervals around the mean). The graph in Part B shows the evolution of average leave benefits for women in the treatment vs. control group, where pre-reform benefits are defined by a woman's income. Data Source: Pension registry data (AKVS) 2004-2012, Microcensus 2006 for pre-reform benefit.

Given the recency of the reform and the lag in available data, these are only medium-run effects. The observed fertility effects up to 5 years post-reform could be transitory rather than permanent if couples decide to postpone childbearing in response to the reform. However, I find strong reform effects for women aged 35-39 and 40-44, who are nearing the end of their lifetime fertility when it becomes relatively unlikely that they will postpone childbearing. This finding suggests a permanent effect of the reform and an actual increase in completed fertility for older women. The effects are driven both by the decision of childless women deciding to have a first child and especially by women who already have one child to have a second one.

Policy implications

What are the main take-aways of this paper? Earnings-related parental leave benefits could help to mitigate the general fertility declines, which are a risk to the long-term sustainability of public pension systems. They may also prove a useful tool for narrowing the existing baby gap between education groups, which was a motivating force behind the 2007 German reform, which marked a “paradigm shift in social policy” in Germany. In contrast to more traditional policies like child subsidies or cash benefits, earnings-related maternity leave benefits seem more likely to encourage women who face high opportunity costs to have children.

There might be longer-run effects of the reform, which was perceived widely as one of the most significant reform in German family policies in the last decades. It is possible that besides increasing monetary transfers the policy may have changed expectations about work and family compatibility in German society. Younger women might internalise those lower expected opportunity costs of childbearing early on and may respond by investing more in their human capital (see Adda et al. 2017). Furthermore, changing the socio-economic composition of fertility has distributional consequences for future generations.

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