Cash Transfers and Fertility: Evidence from Poland's *Family 500+* Program

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Short abstract: Using restricted microdata from the Polish Central Statistical Office's (GUS) Household Budget Survey and Eurostat, I exploit a recent (2016) and universal Polish child benefit policy change to study how cash transfers affect fertility in the population as a whole and in demographic subgroups. Following a descriptive analysis of fertility trends and difference-in-differences methodology, I aim to address two principal research questions: 1) Is fertility significantly affected by the child benefit policy? If so, what is the magnitude of the effect? 2) What is the policy's effect on child poverty levels, especially extreme poverty? Preliminary descriptive findings suggest that relatively more educated and older mothers are having more children since the introduction of the child benefit.

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Extended Abstract: Lowest-low fertility, or a total fertility rate (TFR) of less than 1.3, had spread in Europe during the 1990s, and remained low in Spain, Greece, Poland, and other countries (Kohler, et al. 2002). In an effort to increase one of the lowest fertility rates in the European Union (EU), the Polish government launched a child benefit program called Family 500+ *(Rodzina 500+)* with the dual purpose of a.) boosting birth rates, and b.) combating child poverty. Implemented in April 2016 by the Law and Justice Party *(Prawo i Sprawiedliwość, PiS),* the program offers families an untaxed, unconditional monthly cash transfer of 500 PLN (approximately 125 USD)[1] for every child under the age of 18 regardless of family income. Initially the benefit was only granted to second and higher parity children as well as disabled children, but since July 1, 2019, the program has been expanded to include all children. Single parents, cohabiting parents, legal guardians, foster parents, grandparents, and foreigners residing in Poland can also claim the benefit.

The question of whether and how fertility responds to financial incentives is not only of theoretical interest, but also has important policy implications. Family benefit programs are widespread in developed nations (all 36 OECD countries offer such a program), but vary widely from flat rate "baby bonuses," and implicit tax subsidies to monthly or weekly parental allowances and education subsidies (OECD 2019). In most countries, these programs are constantly under review and undergo reforms. Studying the introduction of a universal child benefit plan that is not means-tested nor tied to work requirements will contribute to a broad swath of competing literature on how family policy incentives impact fertility, especially by income, education, region, and family structure.

Data: Data for this study come from the Polish Central Statistical Office's (GUS) Household Budget Survey and Eurostat. The analytic sample is restricted to childbearing aged women (15-45). GUS and Eurostat are government agencies tasked with compiling and statistically analyzing Polish and European demographic data.

Empirical Strategy: The difference in the fertility of women before and after the Family 500+ policy's implementation can be captured with a difference-in-differences (DID) estimation. I will use R Studio software to compute summary statistics and DID estimators as well as create plots and visualizations (replication code will be available on GitHub). My outcome of interest will be total births. The Family 500+ policy presents a good opportunity for a quasi-experimental analysis, given the exogenous changes in income. Since the program is universal for all children starting July 1, 2019, there should be no issues with selection as child benefits will increase for every family. The only requirement is to reside in Poland and to have at least one child.

Preliminary Descriptive Findings: GUS data (Figure 1) shows the TFR has been increasing incrementally since 2014 and climbed from 1.35 (2016) to 1.43 (2018). Broken down by birth-parity, Figure 2 shows a stronger response to the Family 500+ benefit with two or more children, which is in line with expected findings given the benefit was initially restricted to families with two or more children.

[1] Estimated with September 29, 2019 PLN to USD currency exchange rates

The education group with the most births – or about half of all births in 2017 – were college-educated mothers (Figure 3). This is surprising and runs counter to the experiences of other industrialized nations. This could be the result of a relatively highly educated population in the aggregate and one of the lowest gender pay gaps in the OECD (OECD 2019). Ranked fifth out of the thirty-eight OECD countries in educational attainment, 91 percent of Poles have a high school degree (OECD average is 78 percent) and 44 percent have a post-secondary education (OECD 2019). Women make up 55 percent of doctoral students, with more women than men in natural sciences and mathematics (OECD 2018). At the same time, over half the population holds traditional views on women and the workforce, believing women should reduce labor force participation for childbearing and childcare. 59 percent of women are employed, right around the OECD average of 60 percent (OECD 2019). Mothers are also the predominant users of leave benefits; less than 3 percent of fathers use parental leaves. The population is about 87 percent Catholic, which plays a strong role in promoting heteronormative, traditional views on family formation.

Not only are more-educated mothers having more children, but so are older mothers. The average age of first birth is 27 and age-specific birth rates (ASBRs) for all age groups have increased since 2010 (GUS 2019). Mothers aged 25-29 have the highest ASBRs for first-births (Figure 4) while mothers aged 30-34 have the highest rates for second and higher birth parities (Figure 5). Additionally, 2017 figures show a small spike in the ASBRs of second and higher birth parities for mothers aged 30-34 (Figure 5). The Family 500+ policy could be affecting the overall number of children parents decide to have and the timing of their births. For instance, the cash transfer could encourage parents to have children sooner in order to take advantage of the benefit. Next steps include analyzing potential *quantum* and *tempo* effects on fertility.

Limitations: My identification strategy can be potentially compromised by political events contemporaneous with the Family 500+ policy that could have altered fertility outcomes. For example, PiS lawmakers introduced a measure to ban all abortions in 2016 (currently, they are only allowed in extreme cases of rape or health issues). The bill was pulled within days as a result of the "Black Protest" (#CzarnyProtest) movement. Moreover, the government has made the morning after pill or "Plan B" available only by prescription. Doctors can also refuse to prescribe birth control citing a "conscience clause" and pharmacists can refuse to fill the prescriptions. Overall, there has been an increase in PiS targeting women's rights activists through public smear campaigns and defunding (Santora and Berendt 2019).

Lastly, another methodological issue important to discuss involves the potential anticipatory effect of the Family 500+ policy. In other words, there is a time gap between the announcement of the policy and its actual implementation that can cause anticipatory behavior. Family 500+ was implemented in April 2016 and municipal offices began transferring the benefits in June 2016 (GUS 2019). I will more closely examine and test for anticipatory and lagged effects in my DID model.

Figure 1

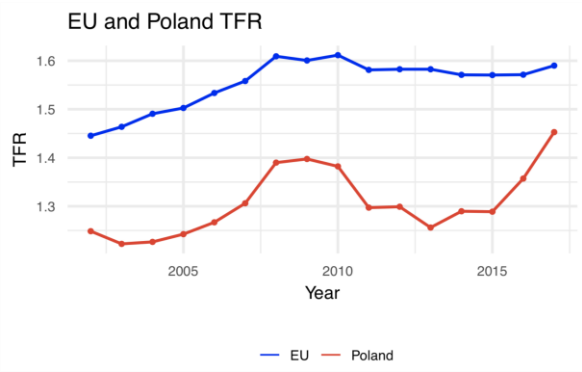
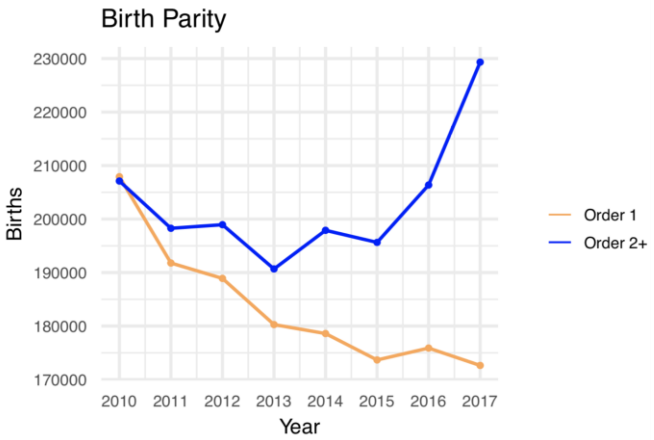
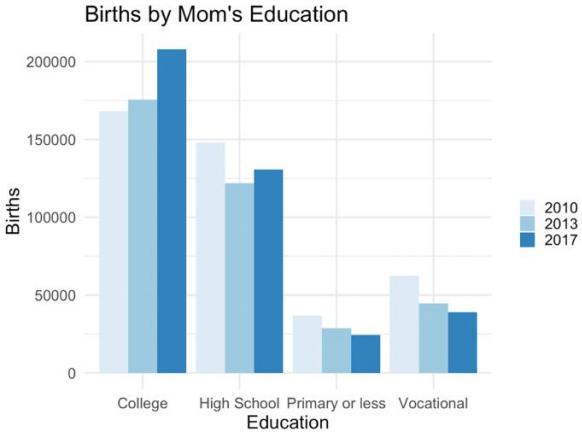


Figure 2



Source: Own calculations from GUS and Eurostat (GUS 2019; Eurostat 2019)

Figure 3



Source: Own calculations from the Central Statistics Office (GUS 2019)

Figure 4

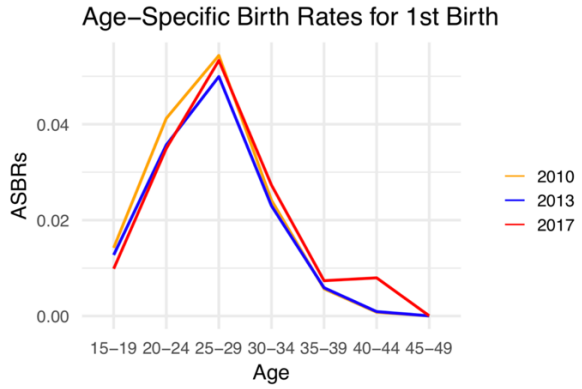
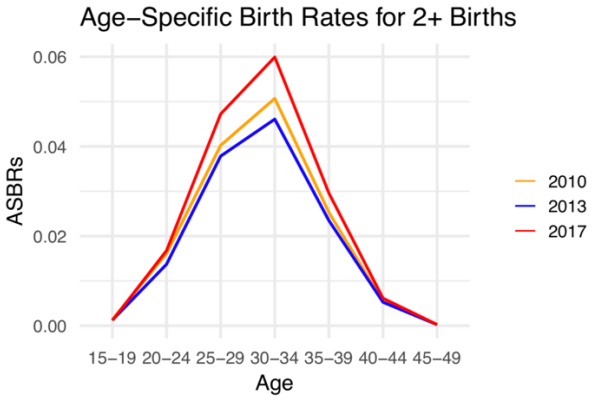


Figure 5



Source: Own calculations from the Central Statistics Office (GUS 2019)

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