LONG TERM EFFECTS OF A CONDITIONAL CASH TRANSFER PROGRAM ON ADULT MORTALITY: EVIDENCE AFTER 20 YEARS OF PROGRESA

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September 2018

INTRODUCTION AND RESEARCH QUESTION

Conditional cash transfer (CCT) programs were first introduced two decades ago and have since spread around the world, now operating in more than 80 countries. By linking monetary transfers to human capital investment, these programs aim to both alleviate current poverty and reduce future poverty. Programs are generally means tested and targeted to the rural poor, and monetary transfers are given directly to female heads of households.

In spite of their spread across the world, there is remarkably little evidence on the effect of conditional cash transfers on well-being and health of the aging. [1] Most research has emphasized the conditionality of transfers to children's school attendance and studied education and health effects on children. Yet particularly in contexts where few aging adults receive pensions, CCT programs may have significant impacts on aging adults through their important income and conditionality effects.

We study the long term effects of Progresa, the pioneering Mexican conditional cash transfer program, on adult mortality by combining vital statistics with administrative information on program beneficiaries over the last twenty years, since the Program began. One of the earliest CCT program, the Mexican program Progresa provides cash transfers linked both to education attainment of children and clinic preventive visits. In the case of adults over the age of 50, the conditionality requirement is to attend a health clinic once a year. Additionally, in 2006 a separate

[1] We are aware of only two studies of health effects of the aging in CCT programs. Barham and Rowberry (2013) find significant reductions of the Mexican CCT on average municipal level mortality for those over age 65 on the order of 4 percent in the early years of the program. The reduction in mortality is primarily due to decreases in infectious diseases but also due to reductions in diabetes-related death. Behrman and Parker (2013) find important effects on improving health for women but no effects for men, analyzing data carried out 6 years after the program began. See Parker and Todd, 2017 for more discussion of overall effects of Progresa.

component with an additional pension amount for those over 70 was added to the structure of Progresa benefits, effectively creating a monthly pension.

We study mortality impacts in rural areas, where the Program has operated longest and where poverty conditions are most severe. Given the program's particular emphasis on gender and the lack of previous literature on gender differences in health impacts, we study impacts by gender on mortality. We also study the different causes of mortality to understand to the extent impacts on mortality are observed, which causes of death are most impacted. This analysis also serves as a robustness check of the specification, in particular some causes of death we would expect not to be affected by CCT receipt, for instance motor vehicle accidents.

PROGRAM DESCRIPTION

Progresa began operating in small rural communities in 1997, following a macroeconomic crisis in Mexico in 1995, and was part of a transition towards implementing targeted anti-poverty programs and eliminating general food subsidies. It quickly grew over time and currently covers six million families, or about one quarter of all families in Mexico. While the program has expanded into urban areas, it remains largely rural, with about two thirds of its household beneficiaries deriving from communities with less than 2,500 inhabitants. New enrollment activity was most intense during the first decade of the program, under the presidencies of Ernesto Zedillo and Vicente Fox.

The program conditions cash payments to families on children regularly attending schools and on family members visiting health clinics for checkups. Specific monthly grant amounts range in 2017 from 175 pesos in the third grade of primary to 980 pesos for boys and 1120 pesos for girls in the third year of senior high school (grades 10-12). The monthly HH amount linked to health clinic attendance is 335 pesos and the old age pension per adult age 70 and older is 370 pesos monthly. [2] The average family in Progresa receives about 800 pesos monthly. The program is means tested, with both geographic and household-level targeting. All monetary grants are given to the mother or female head of the family.

DATA AND RESEARCH METHODS

We exploit the roll-out of the programs by municipality and cohort variation with administrative information of the proportion of individuals receiving *Progresa* in the municipality linked to information on mortality gathered from the INEGI website (Instituto Nacional de Estadistica y Geografia). The main identification strategy relies on difference in differences estimations using variation in program receipt across municipalities and time (Parker and Vogl, 2018).

The Progresa program begins in 1997. Mortality data for the period 1990-2015 is drawn from the INEGI (the Mexican Institute of Statistics, Geography and Informatics). INEGI is the principal government agency responsible for the Population Censuses and a host of other national surveys. Data on mortality derive from a certification system provided by the Mexican Ministry of Public Health and include the municipality in which both a death occurred and where it was reported. We construct the number of deaths of the population age 50 and over at the municipality level for each

[2] The exchange rate is 18 pesos per dollar in 2017.

year of our data analysis period. For the denominator we use the size of the population age 50 and over in each municipality in 1997.

To the mortality dataset, we merge administrative program information on the number of households enrolled in Progresa by year and by municipality, which is supplied by Progresa administrative personnel. With this administrative data, we create a treatment indicator 'program intensity', a ratio of the cumulative number of beneficiary households to the total number of households in municipality in the 1990 census. We restrict analysis to the set of marginalized (poor) municipalities identified as eligible by Progresa in 1997. We initially propose a one period lagged specification, e.g. assuming the proportion of beneficiaries in the previous period affects mortality in the next period but will experiment with different lag specifications.

We estimate the following equation:

$$Mortality_{mt} = \beta_0 \, program\ intensity_{m,\,t-1} + \delta_m + \gamma_t + \varepsilon_{mt}$$

where *Mortality* is the over 50 mortality rate in marginalized municipality m in time t, and *program intensity* is the proportion of beneficiary households in m municipality and in time t-1. Fixed effects on municipality (δ_m) and year (γ_t) are included to control for time-variant and time-invariant unobservable variables. The effects of the cash transfer program on mortality are estimated by β_0. We will estimate our equation both for overall mortality and mortality by cause.

EXPECTED FINDINGS

An important advantage of our empirical strategy is that we will be able to estimate both short term and long term impacts of Progresa on mortality. Program impacts on mortality will be estimated by age group and by gender. We will also carry out heterogeneity impact analysis, studying how impacts vary by the poverty level of the municipality, expecting that larger impacts on mortality may be obtained in poorer contexts. Similarly, we will study how impacts may vary with indigenous status, comparing impacts in municipalities with a high indigenous presence to non indigenous municipalities.

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