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Regression Discontinuity Impacts with an Implicit Index: Evaluating El Salvador's *Comunidades Solidarias Rurales* Transfer Programme

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IFPRI and the Fundación Salvadoreña para El Desarrollo Económico y Social (FUSADES) collaborated between 2007 and 2010 to evaluate the impacts of the *Comunidades Solidarias Rurales* (CSR) programme in El Salvador. CSR includes two types of conditional transfers: an education and a health transfer. Households are eligible for the education transfer if they have a member between six and 15 years of age who has not yet completed primary school; and for the health transfer if any pregnant women lived in the household at the time of the inception census or any children aged up to five years live in the household. The education transfer is conditional on school enrolment and attendance; the health transfer is conditional on growth monitoring check-ups, receiving timely vaccinations, and antenatal monitoring check-ups for pregnant women. The transfer amount is US$15 per month per household for the education or health transfer, and $20 per month if households are eligible for both types. Payments do not vary by the number of eligible children in the household.

The impact evaluation strategy was shaped by rolling entry into CSR. To determine the order of entry, all municipalities in El Salvador were initially grouped into 'extreme poverty groups', and municipalities within the severe and high extreme poverty groups entered the programme between 2005 and 2009. Within each extreme poverty group, municipalities were ranked by a 'marginality index' to determine the order of municipal entry into the programme. As a result, regression discontinuity design (RDD) was the only potentially valid design for identifying impacts. To measure impacts among the poorest municipalities (the 2006 entry group), treatment municipalities from the severe extreme poverty group entering in 2006 were compared with control communities from the high extreme poverty group entering in 2007. The groups were formed using partitioned cluster analysis, so multiple variables were used to group municipalities into 'like' groups—in this case, a poverty headcount and the severe stunting rate in first grade were used. So the use of partitioned cluster analysis needed to be translated into a single index with a threshold before RDD could be applied.

De Brauw and Gilligan (2011) show that by making three reasonable assumptions, the distance measure used to cluster observations in partitioned cluster analysis can be used as a forcing variable in RDD. The underlying concept is that each observation is assigned to a cluster, which is defined by its centre. A set of points exists that defines a boundary between any two clusters equidistant from the two cluster centres, which becomes the RDD threshold.

The estimator is used to show the impacts of CSR on school enrolment for children aged from six to 12 years, which corresponds to kindergarten through 6th grade. Using El Salvador's 2007 census, the paper finds that the programme increased enrolment for children aged six by about 19 percentage points between the 2006 and 2007 entry groups, for those aged seven by 8.9 percentage points, aged eight by 4.2 percentage points, and aged nine by 4 percentage points. Enrolment for children aged 10–12 was not significantly different as a result of the programme. So CSR led to school enrolment at younger ages, implying that children will be able to complete primary school sooner.

De Brauw and Peterman (2011) use the same methodology to study four outcomes related to maternal health around the time of birth, using the IFPRI-FUSADES evaluation data. They study whether women receive adequate antenatal visits, whether qualified personnel attend their births, whether births took place in hospitals, and whether or not they receive a post-natal check-up. Of these outcomes, cash transfers are only conditional on receiving antenatal care, and only for women who were pregnant at the time of the eligibility census. The paper finds robust impacts on skilled attendance at birth and on birth in a hospital setting, but no impacts on ante- or post-natal care. The paper argues that impacts are a result of a combination of supply-side improvements and gains in women's decision-making agency. The latter argument was a primary conclusion of the qualitative study conducted as part of the evaluation. More importantly for maternal health in El Salvador, after all municipalities in our data set entered CSR, women who were not eligible to be beneficiaries were just as likely as women who were in the treatment group to both have births attended by qualified personnel and for births to occur in hospitals. Therefore, CSR appears to have catalysed healthier outcomes in the longer term for women around the time of childbirth.

The results are important for policymakers in El Salvador, but there is at least one further important implication. Even when an explicit forcing variable does not exist, the impacts of a conditional cash transfer (CCT) or another type of programme can be measured using the methods described in de Brauw and Gilligan (2011). Partitioned cluster analysis may be an attractive way for governments to target interventions to populations with specific needs—for example, it could be used to target areas for agricultural interventions with high poverty and high agricultural potential.

References:

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Note:

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