Conditional Cash Transfer Programs:
Are They Really Magic Bullets?

by

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Conditional cash transfer programs pay recipients in exchange for an action that brings private behavior closer to the social optimum. We analyze one such program in Mexico, Progresa, that pays four million poor mothers to send their children to school and health visits. We show that these programs are effective, but that they can be made more efficient by following simple rules in selecting beneficiaries and calibrating transfers for maximum response per unit of transfer.

In recent years, conditional cash transfer (CCT) programs have been introduced for a variety of different purposes. Applied to education and child health in developing countries, for instance, they consist of giving cash to poor parents with the condition that they send their children to school and health visits. These programs have been hailed as being among the most significant innovations in promoting social development in recent years. Nancy Birdsall, president of the Center for Global Development, was thus quoted in the *New York Times* of January 3, 2004, as saying, "I think these programs are as close as you can come to a magic bullet in development. They are creating an incentive for families to invest in their own children's futures. Every decade or so, we see something that can really make a difference, and this is one of those things." In all cases, the objective of the CCT program is to correct for market failures, where a specific socially desirable action is under-rewarded by the market, a situation that economists describe as

> *"It is better to deal with the few children who are not attending school through specialized interventions than through an offer of a general cash transfer to poor parents."*

positive externalities. The transfers act like a price effect on the action: they are expected to induce individuals to increase their supply of the action by raising its price via a conditional cash transfer. Examples of the application of this principle include the following two:

Learning externalities. Despite the high private benefits derived from education, there is under-investment in education by individual households because the positive benefits that it generates on others are not rewarded by market forces. It has thus been observed that the educated create employment for others, that wages are higher for high school graduates in cities where the supply of college graduates is higher, and that the educated have higher civic participation and make better decisions over policy choices that affect the economy. Education creates inter-generational benefits as educated mothers have on average healthier babies. As the educated tend to take greater risks in experimenting with new technological innovations, it allows others to learn from them. For all these reasons, local and state governments subsidize primary and secondary education. Higher education in public universities such as Land Grant Colleges is also highly subsidized.
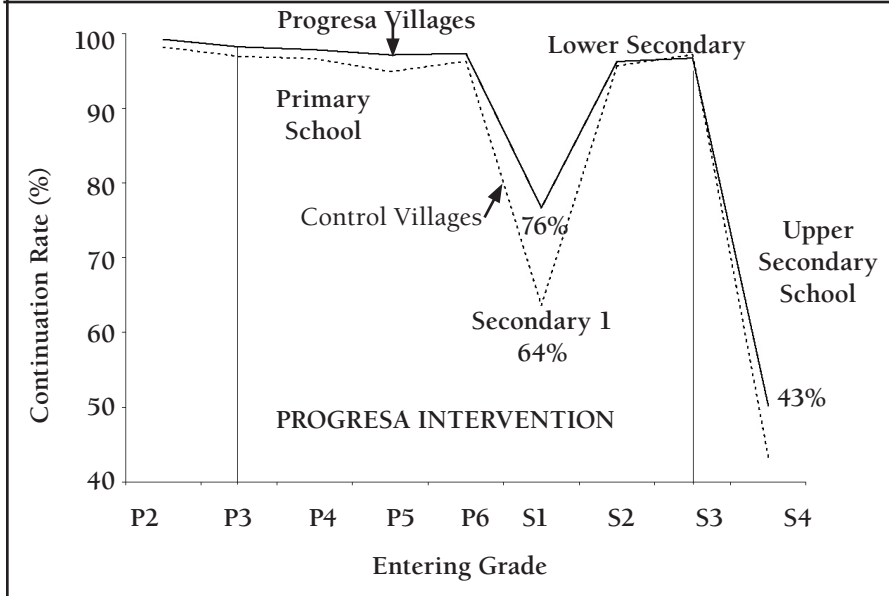
Environmental externalities. There is private underinvestment in forest conservation due to positive benefits associated with carbon capture, conservation of biodiversity, watershed management, landscape quality, and the preservation of open spaces that forest owners generate for others with no direct rewards to themselves through the market. This has led many countries to introduce public programs of payments for environmental services to encourage forest conservation. Notable among those are the Conservation Reserve Program in the United States and the payment to forest owners in Costa Rica. These programs are of the CCT type, as payments made are subsidies to specific actions in forest conservation.

This CCT principle has been applied massively to educational and child health programs in many developing countries to induce poor parents to increase the supply of child time to education (instead of work) and the supply of their own time to caring for the

Figure 1. School Continuation Rates of Poor Children in Sample Villages

selection of 320 treatment and 186 control villages between 1997 and 2000. The payment schedule is tailored to grade and gender, with primary schoolers receiving from $70 per year in 3rd grade to $135 in 6th grade, and secondary schoolers receiving from $200 per year for boys in first grade ($210 for girls) to $220 for boys in third grade ($255 for girls).

Figure 1 gives a good understanding of the problem to be solved. Attendance to primary school reaches 97 percent without transfers. Hence, there is very little a transfer can do in improving school enrollment, and most of the payments are leakages from an efficiency standpoint. Only one percentage point in enrollment is gained through the transfers, and the cost of sending an additional child to school is as a consequence no less than $9,600 per year. As the figure shows, the big drop in enrollment is at entry into secondary school, when 36 percent of the children that completed primary school fail to continue. Progresa transfers raise participation from 64 percent to 76 percent, a 12 percentage point gain that erases, in particular, the educational gap between poor and non-poor in these marginal communities, a remarkable achievement. Still, in terms of program efficiency, two facts are notable: one is that 64 percent of the recipients of transfers would have gone to school without a transfer, implying a leakage of resources in terms of efficiency gains; the other is that 24 percent of the children that qualify for the program and received an offer of a CCT failed to participate, implying a potential efficiency loss if differently calibrated transfers could have induced them to go to school.

Hence, there is an important problem to be discussed: could CCT programs better target and calibrate transfers in order to increase uptake and decrease leakages? This is what we address in the following section.

health of their children. These programs are popular with politicians and international development agencies because they are efficiency-oriented, and also serve to transfer resources to the poor. Some of these programs have become extraordinarily large and costly. This raises the pressing issue of using these funds as efficiently as possible for their stated purposes. In this paper, we first review the example of Progresa, an extensively lauded program of CCT for education, health and nutrition that is the flagship of Mexico's social protection system. We then analyze the efficiency of this program. This is used to make recommendations that can help achieve higher efficiency levels in CCT programs.

Analysis of a CCT: Progresa

Progresa was introduced in Mexico in 1997 to offer cash transfers to poor mothers in marginal rural communities, conditional on their children using health facilities on a regular basis and attending school between third grade of primary and third grade of secondary. Children cannot miss more than three days of school per month without losing the transfer, and will not receive the transfer if they have not visited a health center. The program was recently renamed Oportunidades, and expanded to sixth grade of secondary education and to peri-urban areas. In 2003, it serviced four million families at an annual cost of US$2.2 billion. Extensive data were collected on the program to allow impact analysis, with randomized

Determinants of Efficiency

Like other CCT programs for education, Progresa transfers are confined to the poor. The objective of a CCT program can be conceptualized as one of

selecting categories of children among the poor and calibrating the level of transfer offered to each particular category of children in order to maximize the increase in the probability of school attendance, subject to a budget constraint and to verification that the condition on behavior has been satisfied. Solving this problem shows that eligible children should be selected among those with a low probability of going to school without a transfer, and with a high probability of going to school if a transfer is offered to them. The transfer is calibrated to maximize this response. This requires knowing (1) what is the risk that a child of a particular type would not be going to school without a transfer, and (2) how parents of different types respond to conditional cash offers of different magnitudes in deciding to send their children to school or not.

Running through this exercise shows how much efficiency can be gained with the same overall budget. To start with, it is clear that from this perspective, offering cash transfers to primary schoolers is not efficient, as most of the transfers end up in leakages (i.e., go to kids who are paid to do what they already do). It is better to deal with the few children who are not attending school through specialized interventions than through an offer of a general cash transfer to poor parents.

Analyzing entry into secondary school shows that efficiency gains could also be achieved at that level. By calibrating transfers to the level needed to induce response and by targeting children according to the risk that they may not be going to school but will go with a transfer, enrollment rates would increase from 64 percent to 78 percent, a 14 percentage points gain compared to the previous 12 points. In this case, what we find is that larger transfers should be offered to the eldest child in the family (younger siblings are more likely to go to school), to children with an indigenous father, and to children who live in villages where there is no secondary school, particularly girls. The tighter the program budget constraint, the more leeway program administrators have in selecting from among the poor for low leakages and high responses. Hence, program efficiency gains increase as budget constraints are more binding. If, for example, the budget were half the current level, the efficiency gain from targeting and calibrating for efficiency would be 30 percent over simply offering transfers to the poorest half of the poor population in the selected villages.

Conclusions

We derive four conclusions from this analysis. The first is that CCTs that aim at inducing socially beneficial behavior should be regarded as contracts with recipients for the delivery of a service, not as handout programs. In this case, the fundamental objective of the conditional payment is to increase efficiency by internalizing an externality to avoid a discrepancy between private and social supply of child time to school.

Second, CCTs should be seen as creating price effects, not income effects through the transfers. If under-investment is due to market failure, an income effect will buy almost nothing in increased schooling and health. In all cases, aligning private and social behavior will be cheaper through price effects (conditional transfers) than through income effects (unconditional cash transfers).

Third, efficiency gains from CCTs can be enhanced by calibrating transfers for increased participation, and by reducing leakages by focusing on cases where the conditionality will be most effective in altering behavior. The tighter the program's budget constraint is in selecting among qualifying beneficiaries, the larger the potential efficiency gains from applying simple optimality rules in selecting beneficiaries and calibrating transfers.

Finally, the rule of targeting on likelihood that a condition will be met in response to a transfer (when it would not be without) and of calibrating transfers to increase uptake is a general principle for CCT programs. In payments for environmental services, this implies focusing on categories of resources (e.g., trees) at risk of being degraded and with high likelihood of not being degraded in response to a transfer. This expected gain in survival of the resource is then weighted by the environmental benefit from preserving this category of resource in order to maximize environmental returns per unit of subsidy paid.

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