A Reassessment of Conditional Cash Transfer Programs*

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Abstract
During the last decade, the use of conditional cash transfers to increase investment in human capital has generated considerable excitement in both research and policy forums. In this paper, we survey the existing literature. Our review suggests that most such programs are used for essentially one of two purposes: restoring efficiency when there are externalities and improving equity by targeting resources to the poor. These schemes often meet their stated objectives. Nevertheless in some instances there is a tension between the equity and efficiency objectives. The overall impact of the program then depends on the gains and losses associated with each.

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1 Introduction

The use of conditional cash transfer schemes as a means of combating poverty has increased dramatically in the last decade. Programs such as PROGRESA (now Oportunidades) in Mexico, Bolsa Escola (now Bolsa Familia) in Brazil and the Red de Proteccion Social (RPS) in Nicaragua, aim to balance the goals of current and future poverty reduction by providing cash for immediate consumption as well as fostering investment in human capital. A number of evaluations now show that these programs are (a) technically feasible in the sense that the main stated goals of the programs are actually met in practice, and (b) politically acceptable in that successive governments are willing to continue, and even expand the coverage of these programs. These results have been a source of enthusiasm in the development community for researchers and policy-makers alike.

Interestingly though, studies suggest that households would behave very differently given an equivalent amount in cash with no strings attached: they would consume less of the conditioned-on good and more of other commodities instead. In Western Kenya for instance, the incidence of malaria decreased when households were given insecticide-treated bed-nets (Nahlen and others, 2003). However when asked what they would do given an equivalent amount of cash instead, household priorities were different. They would have spent the cash on food and clothing—bed-nets were a distant priority (Alaii and others, 2000). Also in Western Kenya, a deworming program led to a large increase in school attendance. Surprisingly, even after a year of the program, a small increase in the price of the pills from its initial level of zero resulted in an 80 percent decline in their use (Miguel and Kremer 2003a and 2003b). The evidence is not specific to Sub-Saharan Africa. For the Bolsa Escola program in Brazil, giving cash conditional on school attendance was critical and successful in increasing school participation; cash given unconditionally would not have had a significant impact (Bourguignon and others 2002 and Cardoso and Souza 2003).

In all these cases the conditionality induces households to behave differently compared to what they would do given cash without conditions. In fact, the advocates of conditional cash transfers point precisely to the ability of these schemes to influence behavior as a measure of their success. Yet how these schemes work depend on how households respond. An economic perspective can provide useful information on the efficacy of such measures by analyzing impacts on household and individual behavior in relation to the aims of such schemes. In addition, such a perspective can help unearth the underlying rationale for inducing behavioral changes—under what circumstances would policy-makers like individuals to behave differently from the market-induced outcome?

Towards this aim, this paper reviews the theoretical and empirical literature on conditional cash transfer schemes (Table 1 summarizes the review). This review suggests that most such programs are used for essentially two purposes.
In cases where there is a mismatch between an individual’s actions and societal preferences, conditional cash transfers provide incentives for individuals to alter their behavior. This induced change leads to an increase in the combined welfare of all individuals. Thus, a parent who makes schooling decisions for her child may not take into account the long-term benefits of education. In this case, giving cash to parents only if they send their children to school reconciles the (possibly) divergent interests of parents and children.

These schemes have also been used for the very different objective of targeting resources to the poor by acting as “screening” mechanisms. Specifically, when governments are unable to directly observe individual characteristics, conditional cash transfers can induce self-selection so that the targeted group participates in the program and others opt out. A classic example is workfare. When cash is given only to people who work on a specific task, say road building, the rich usually opt out while the poor participate.

Of course, these two reasons do not form an exhaustive list. Although economists have developed tools to analyze and understand behavioral responses for these two cases, a third justification is that human beings often violate the economist’s conception of “rationality”. As Basu (2003) points out, people are frequently impatient, willing to sacrifice too much to make good things happen too soon, not good at understanding complicated concepts such as compound interest rates and often lack self-control. In addition, they may be less than fully informed. In all these cases, conditional cash transfers, either by protecting people against their own irrationalities, or by providing incentives to individuals to gather more information (if forced to send my child to school, I will find out more about the value of education) can increase welfare in the society.

Most of the empirical literature focuses on the equity rationale and the efficiency rationale arising from mismatched interests. The findings are generally positive, in that these schemes often meet their stated efficiency or equity objectives. When used to induce greater investment in human capital, they do lead to increases in schooling and greater use of health resources. Similarly, when used to target resources to the poor, they do ensure that the poor receive more than the rich. However, in some instances there is a tension between the efficiency and equity objectives. For instance, although conditional cash transfer schemes

\footnote{A review of the literature reveals little empirical support for these rationales. This is partly because empirical investigations of departures from rationality, especially with respect to investments in human capital, are hard to implement. In laboratory experiments, behavioral economists have systematically demonstrated that individuals behave very differently from what would be predicted by economic models of a rational human being. Taking these experiments to the field has proved a lot harder and remains an open agenda for future research. Similarly, systematic evidence for informational problems remains sparse. In fact, limited evidence in the case of the deworming experiment suggests that information was not the constraining factor—even after substantial experience with these pills and their effects had been built up, households were unwilling to pay even a tiny sum for their purchase, suggesting that subsidies may have to be continued indefinitely to sustain high take-up of the conditioned-on good (Miguel and Kremer 2003a).}
may lead to greater school participation, this may be accompanied by larger transfers to the rich.

This trade-off is not new to policy makers. A number of conditional cash transfer schemes were implemented with the efficiency motive in mind. Nevertheless there was an explicit attempt to ensure that the rich did not receive more than the poor by constructing eligibility criteria that dictated who could and could not receive the cash transfers. These “means-tested eligibility criteria” ranged from sophisticated measures such as household income (Bolsa Familia in Brazil) to less demanding correlates of poverty such as land ownership or employment (Food for Education program in Bangladesh). However, any such means testing required additional expenditures and the careful collection of household data. As the popularity of these schemes increases and the emphasis shifts to “quick” results on goals set by donors, governments may be less willing to invest in such expensive efforts. In these cases, the trade-offs become starkly apparent. The overall impact of the program then depends on the gains and losses associated with each.

The economic analysis of the efficiency and the equity objective are different, and we structure the paper accordingly. Section 2 presents the textbook case of a conditional cash transfer, which shows that in the standard economic framework, unconditional cash is better compared to cash with conditionalities. Consequently, whether a conditional cash transfer is effective or not depends on how well it addresses market failures arising from mismatched preferences and/or how well it targets resources to a particular group. Sections 3 and 4 discuss each of these issues respectively, with an emphasis on the problems that these schemes have faced in meeting their stated objectives. Section 5 then examines the overall costs and benefits of conditional cash transfers, where we look at the combined effects of the conditionality on efficiency and equity. Section 6 concludes.

2 Conditional Cash Transfers: The Textbook Example and Rationales

This paper views any scheme requiring a specified course of action in order to receive a benefit as a conditional cash transfer (henceforth CCT). The definition includes cash transfers based on human capital investments (such as schooling and health) but is sufficiently broad to encompass other schemes such as workfare programs (cash contingent on working in a program) and consumption transfers (in kind transfers) among others. While different in their ultimate form, workfare programs and in-kind transfers are conceptually identical to conditional cash transfers. Workfare programs are income transfers conditional on taking the occupation proposed by the program. Similarly, in-kind transfers are cash transfers conditional on the purchase and consumption of the relevant commodity. Not surprisingly, the economics of these three types of transfers
is very similar and the empirical insights gained from the analysis of one are equally relevant to the others.

Figure 1 represents a CCT scheme from the point of view of the household in a standard economics framework. The household can consume two goods, \( X \) (say, education) and \( Y \). The maximum amount that the household can consume prior to the scheme is given by the budget constraint \( AB \). That is, if a household spends all its income on \( X \), it can consume up to the amount \( B \); similarly if it spends all its income on \( Y \), the maximum it can consume is \( A \). After the implementation of the CCT scheme, the budget constraint is given by \( AEDC \)—under this new budget constraint, if the household consumes at least \( X_0 \), it receives an additional income given by \( ED \). However, if the household consumes less than \( X_0 \), it does not receive an income transfer and remains on its pre-scheme budget constraint, \( AE \). \( X_0 \) represents the conditionality—to receive the extra income, the household must consume at least this amount of the good.

There are three types of households whose indifference curves are given by Type I (dotted), Type II (dashed) and Type III (solid). Their behavior is very different. Type I does not use the scheme even when available and remains on the original section of its budget constraint, \( AE \), consuming less than the required amount \( X_0 \). Type II is originally on the initial part of its budget constraint (consuming less than \( X_0 \)) but shifts to consuming \( X_0 \) once the scheme becomes available. Finally, Type III was consuming more than \( X_0 \) before the scheme and continues to do so after its introduction.

In this example, CCTs are worse than distributing an equivalent amount in cash without conditions. If households were given cash without the conditionality at \( X_0 \), the budget constraint would be given by the line \( CD \) extended upwards to meet the Y-Axis. We now see that for Type I and Type II households, the CCT is strictly worse than an equivalent amount given in cash—these households move to a higher indifference curve when given cash without conditions. For Type III households the CCT is equivalent to an unconditional cash grant.

The inherent logic of a CCT scheme drives the intuition behind this result. By imposing conditions, the policy maker provides incentives to individuals to take an action that they would not take on their own (otherwise why have the condition in the first place?). But if an action that is taken is different from what the individual would have chosen on her own, resulting welfare must be lower—by inducing a distortion on the consumption choices of individuals such schemes reduce welfare compared to unconditional cash grants. The only individuals for whom CCTs and unconditional grants are equivalent are the ones who do not experience any distortion in their consumption decisions, represented by the Type III households who were already consuming \( X_0 \) to begin with.

Implicit in this example is that there are no market failures, so that decisions made by individuals are also optimal for society as a whole. Suppose
instead, that from a societal point of view, individuals of Type II under-invest in education: when they make their educational decisions, they do not take into account the effect of their own education on others around them. In this case, CCTs (cash conditional on education) could lead to a larger increase in social welfare than an unconditional cash grant. While this could reduce the welfare of the individual relative to an unconditional cash grant, it would make society as a whole better-off. This is the first rationale for CCTs; such schemes can be used to improve efficiency when there are underlying market failures in the economy.

A second rationale for CCTs relates to equity and redistribution. Suppose the policy-maker is interested in providing cash only to a certain segment of the population, say the poor. The problem that the policy-maker faces is that the poor are hard to identify and budgets are small. One way out is to screen beneficiaries, so that poor participate (and receive the cash) while the rich opt-out. Conditionalities can achieve exactly this effect. The idea behind successful screening is that the benefits of the program (the cash received) minus the costs of the conditionality (the utility loss from being forced to consume a certain amount) will be different for the poor compared to the rest of the population. In particular, if the benefits of the cash received exceed the cost of the conditionality only for the poor, then the poor will self-select into the program. In the figure, Type II and Type III self-select into the program while Type I opts out. Thus, the second rationale for CCTs is their use as screening devices to target participants when individual characteristics are not easily observed.

These two rationale are very different. In the first case, the objective of the policy-maker is explicitly to increase the consumption of the conditioned-on good, whereas in the second, conditioning matters only insofar as it determines the identity of individuals who self-select into the program. The next two sections discuss these two rationales and the problems that have arisen in their use. Section 5 then examines the two together.

3 Efficiency and Conditional Cash Transfers

We saw in the example above that when societal and individual preferences are different, CCTs can help increase welfare. Two important questions arise. First, when do externalities arise and what is the existing empirical evidence on these market failures, especially in low-income countries? Second, if we find that such market failures are frequent, particularly in certain sectors, what are...
the problems that conditional transfer schemes face in achieving their stated objectives?

3.1 Market Failures and the Use of Conditional Cash Transfers

To examine the first question, the discussion below presents some examples from the recent literature. Although the papers reviewed here address different concerns, they share a common theme. In each of these studies, an inefficiency arises due to (a) an externality whereby the actions of one individual directly affect the welfare of others, and (b) the inability of individuals to “contract-out” the externality by appropriately rewarding or punishing others for their actions. The combination of these two leads to a divergence between societal preferences and individual decisions; more efficient outcomes can then be achieved through the use of conditional transfers.

3.1.1 Direct externalities

Two types of externalities that have received attention in the recent literature are physical externalities and learning externalities. Physical externalities arise in a number of contexts. For instance, Miguel and Kremer (2003a, 2003b) study a deworming project, where free deworming treatment was provided to rural primary school children in Kenya. They show that the deworming program resulted in larger positive health and school participation effects for those in the treatment as opposed to the control group (those who received no treatment). Furthermore, they cite epidemiological theories that “(...) medical treatment for helminth infections creates externality benefits for other community members by reducing worm deposition in the community and thus limiting re-infection among community members.” These externalities are confirmed for the program: the deworming program had positive effects for untreated students in treatment schools and students in neighboring schools as well. The authors conclude that the size of the externality could be over 20 times as large as the cost of deworming. Starting with the premise that parents and children do not take into account the positive benefits on the whole community of their own consumption (and payment for) deworming pills, the overall consumption of

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3The review presented here is not exhaustive. Some cases of market failures have been omitted from the review. In particular, moral hazard arguments, whereby aid is believed to induce lower effort on the part of recipients is an important omission (see Ravallion, 2003). If aid is targeted to the poor, this might create an incentive to remain poor, leading to excess consumption instead of investment. In this case, CCTs encourage investment instead of immediate consumption. Another omitted argument (with little empirical evidence at the moment) is the case of bounded rationality. If individuals are unable to undertake appropriate investment decisions due to bounded rationality or behavioral problems such as hyperbolic discounting, then CCTs act as substitutes for individual decision-making; the government essentially behaves as a paternalistic agency (Basu, 2003 discusses this issue with regard to child labor). A third rationale relates to the political economy of aid and is addressed in the last section of the paper.
deworming treatment is likely to be less than what society would want. Consequently, there is a clear role for policy-makers to subsidize deworming treatment to restore efficiency.4

Learning externalities arise frequently in technology adoption scenarios. Once the attributes of a new technology are known to a community, there are significant benefits. Nevertheless, learning about a new technology often involves costly experimentation. In this case, individuals who do not take into account the benefits that their early experimentation will have on the stock of knowledge in the community, may be unwilling to invest their time and effort, leading to a “free-rider” problem: they will prefer to “wait and see” rather than experiment with the new technology. As with the previous case, individual decision leads to under-investment in learning. There is considerable evidence to suggest that learning externalities play an important role in the path of technology adoption. For example, Foster and Rosenzweig (1995) find evidence that farmers are more likely to adopt a new technology when their neighbors do, but at the same time, are less likely to make the first move, preferring to wait until their neighbors first experiment.5

3.1.2 Household bargaining

Market failures that can be remedied through conditional cash transfer schemes also arise when decisions are made through a bargaining process within the household.6 For example, recent contributions to the literature on child labor have argued that the inefficiency of child labor and under investment in schooling arise due to a generic mismatch of parents’ preferences and children’s interests (Baland and Robinson 2000). If children could promise to pay their parents for their own education, education levels would be higher. However, since education decisions for the children are made by parents, and children cannot make such promises, parents favor positive short-run outcomes that benefit them relatively more (perhaps increased income due to child labor) rather than long-term returns that mostly accrue to children.

In empirical studies, Kochar (2000a) shows that there are significant differences between the parental and the child’s rate of return to children’s education

4However, the authors also state that “(...) it is difficult to draw conclusions about optimal deworming subsidies in the absence of a fully-fledged behavioral and epidemiological model.” While positive externalities were large on average, it is hard to identify marginal externalities as they depend on how many others are being treated.

5Just as an individual can learn from her neighbors, her preferences can also be influenced by the behaviour of those in her community. For example, if one believes that social norms drive gender discrimination, then there may be scope for the government to positively discriminate in favor of women in order to induce a community-wide change in beliefs or preferences. The Bangladesh female stipend program (see Khandker and others, 2003) can be seen as a conditional cash transfer program with such an objective in mind.

6For discussions of how bargaining in households affects decisions, see Bourguignon and Chiappori (1994) and Basu (1999)
and that the former overwhelmingly determine the amount of education received. Moreover, educational levels in rural households respond strongly to labor market returns in urban areas (Kochar, 2000b). Taken together, Kochar’s work suggests that rural families under-invest in education since they are unable to guarantee that their children will continue to reside in the village once they are educated: the inability of children to commit to such an action leads to the under-provision of education. In such cases, conditional transfers schemes such as the Bolsa Familia, which provide cash only if the child attends school, increases efficiency by effectively addressing the difference between parental preferences and children’s interests.\footnote{Bargaining models also suggest that CCTs are not the only way in which under-investment in children can be addressed. An alternative may be to provide direct income support to members of the household whose preferences are more aligned with the interests of their children. For instance, it is often assumed that mothers allocate resources in a manner more consistent with their children’s needs than fathers do. Empirically, this assumption has been tested by Lundberg and others (1997), who examine the change in the composition of household expenditures following a policy change in the child benefit scheme in UK in the late 1970s. Under the policy change, the universal child benefit, which had consisted primarily of a reduction in the amount of taxes the father had to pay, was replaced by a cash payment to the mother. This represented a substantial redistribution of income from husbands to wives (about 8 percent of average male earnings in the U.K. by 1980). The authors find a substantial increase in spending on children (and women), relative to men, and conclude that “(...) children do better when their mothers control a larger fraction of family resources.”}

### 3.2 Using Conditional Cash Transfers to Address Market Failures: Some Issues

Suppose that we are convinced of the importance of externalities and therefore CCTs are an appropriate solution. A number of problems may still arise in the ability of the program to meet the stated objective of increasing, say, human capital investments. Two important issues are participation and fungibility.

#### 3.2.1 Low Participation

The first requirement for a CCT program to achieve its objective (and this holds true both for schemes used to enhance efficiency and those used to target resources) is that individuals participate. Thus, in programs with stipends for school attendance, the scheme should lead to an increase enrollment and attendance rates. Similarly, in workfare programs designed to target poor households, individuals should be willing to undertake the work required to receive the benefits.

The problem of participation is critical in that if there is low participation, the program is ineffective. Conceptually though, the participation problem is entirely related to the size of the transfer and the cost of the conditionality. As an example, suppose we want to get children into school. We start by giving parents $5 to send their children to school, but find that participation is low. We can always increase the cash given and keep doing so until we reach an amount
where every parent will participate. Thus, if participation is low, it must be either that (a) the amount of the cash given is too small or (b) the cost of the conditionality is too large.8

The importance of this problem is reflected in the fact that the large evaluation literature emphasizes program “uptake”. The Bolsa Familia in Brazil is a CCT scheme with the objective of increasing school enrollments and reducing child labor for children between the ages of 6-15. Under this program, transfers are given to children attending school at least 85 percent of the time, provided they are below a certain income cut-off to start with. Bourguignon and others (2002) estimate the ex-ante impact of this program and find large effects on enrollment with a decrease in the percentage of children not enrolled from 5.8 percent to 3.9 percent, and stronger effects among the poor (9.1 percent to 4.7 percent). These results are partially confirmed in an ex-post evaluation of the same program (Cardoso and Souza, 2003).

In Bangladesh, two important programs to increase school enrollment, the Food-For-Education and the Female Stipend Program, both resulted in increases in enrollment. As with the Bolsa Familia, both programs conditioned benefits, food in the first and cash in the second, on school attendance. The effects were significant and large. For the first program, Ravallion and Wodon (1999) show that an extra 100 kilos of rice increased the probability of school enrollment by over 15 percent for both girls and boys. For the second, Khandker and others (2003) estimate that an additional year of participation in the school stipend program leads to a 8 percent increase in girls’ enrollment.

3.2.2 The Fungibility Problem

The second problem that CCT schemes face relate to the fungibility of the conditioned-on commodity. Conditionality works when individuals are forced to take actions that they would not take on their own. However, this very logic creates an automatic incentive for individuals to try and offset the loss of welfare that the conditionality imposes. The ability of individuals to offset any distortion imposed by the CCT program is the problem of fungibility, which usually arises when there is a close substitute for the conditioned-on commodity (this could be the commodity itself). In this case, the recipient can offset the distortion imposed by the conditionality if she appropriately decreases the consumption of the substitute, so that overall amounts are unchanged following the scheme even when the conditionality is satisfied.9

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8The small size of the transfer can arise either by design (policy-makers are unsure of the right size of transfer) or due to poor governance. While few studies have evaluated the latter, in a slightly different context studies by Ablo and Reinikka (2000), Reinikka and Svensson (2003), and Das and others (2003) suggest that there can be large differences between executed program budgets and the amount that actually reaches beneficiaries.

9When households can access a second-hand market where the conditioned-on good can be sold, there is a trivial issue of fungibility. Making sure that such problems do not occur is a prerequisite for “conditionality” to make any sense; while this is important, the paper assumes that this problem is well known and dealt with to the best of the policy-makers ability.
As an example of fungibility, consider a program that seeks to improve learning outcomes by giving cash to parents conditional on the purchase of educational materials (such as textbooks). Such a scheme may report high program uptake (i.e., all parents buy school supplies with the cash) but will have minimal effects on learning outcomes if individuals cut back on their own funding of such supplies. If parents were already buying textbooks, all the scheme does is make textbooks free without increasing the total number of textbooks available to the child. Following up on our previous discussion, the behavior of Type III individuals in Figure 1 shows how fungibility can be a problem. Since this group was already consuming the necessary amount of the good, the increase in the commodity following the scheme is no more than that under an unconditional income grant; for this particular group, the commodity is perfectly fungible. In less extreme cases, such substitution may take the form of decreasing the consumption of a close substitute (eating less spinach when given iron tablets), changing patterns of consumption (eating less at home when given food in school) or even reallocating investments within the household (sending fewer boys to schools when girls are given a stipend).

How can one evaluate whether fungibility is a problem? There are two approaches in the literature. One approach is to try and directly estimate the impact of the program on close substitutes of the conditioned-on good. Thus in the case of educational materials, one could estimate the impact of providing supplies in school on the purchase of supplies at home. A second approach is to examine an outcome that depends both on the conditioned-on good as well as the substitutes. Learning outcomes depend both on the conditioned-on good as well as at home. If, as a consequence of providing supplies in school there is an increase in learning outcomes, it must be the case that there was an increase in the overall educational materials available to the child.

Both methods have advantages and drawbacks. With the first method, direct estimates of the extent of substitution can be obtained (the decreased provision of educational materials at home) while with the second, we can only tell whether substitution was one-for-one or not. At the same time, the first method requires very clear knowledge of what the substitutes actually are. For educational materials the substitutes are straightforward, but this is not true for other programs. A mother may substitute for better health care in the clinic in a number of ways (washing hands, boiling water etc.) which may be difficult to list, let alone measure. By concentrating on outcomes, such as child height, that depend both on the health care in the clinic as well as health care at home, the “reduced-form” impact of the program can be estimated.

Jacoby (2002), is one of the few papers that provide a direct estimate of substitution. In a feeding program in the Philippines, extra calories provided in school were not substituted away by the household. This paper is based on the idea that households smooth consumption so that ideally daily caloric consumption should be the same on both school days and holidays. By comparing the
caloric consumption of children on school and non-school days, Jacoby shows that households do not substitute away calories from the program. On school days, the caloric intake of children is higher by 80 percent of the caloric value of the feeding program.

In contrast, two papers that use the second approach are Behrman and Hoddinott’s (2001) evaluation of PROGRESA in Mexico, and Stifel and Alderman’s (2003) analysis of Vaso de Leche in Peru. Behrman and Hoddinott (2001) evaluate a CCT scheme aimed at improving child nutrition and health. Under this program, eligible mothers had to visit clinics regularly and participate in growth monitoring to receive nutritional supplements and the cash transfers. They study the effect of PROGRESA’s pre-school child nutrition programs on child height and report that the programs had substantial positive impacts on growth and in reducing the probability of being stunted for children aged 1-3. The authors also postulate that the program addresses externalities arising from household bargaining: PROGRESA directs its resources to mothers based in part on prior evidence from other populations that suggest better child health and nutrition results when women rather than men receive resources.10

A natural question is whether fungibility is an issue in all CCT schemes or only particular types such as nutritional interventions. For instance, if a CCT scheme leads to higher school enrollment, is there an associated fungibility problem? Although there is limited empirical evidence, the answer is yes. In particular, these programs may reduce the amount of education that is given at home to the child or affect the composition of education across children. In the Female Stipend Program in Bangladesh, Khandker and others (2003) examine whether providing stipends only for girls had an effect on boys’ schooling since the program reduces the price of girls’ compared to boys’ education. Their evidence is mixed. Using household data they find that the effect on boys’ schooling is statistically insignificant. However, using school enrollment data they find a 29 percent decline in boys’ enrollment in program schools.

4 Equity and Conditional Cash Transfers

The second objective of conditional cash transfers as a screening mechanism has a long history in workfare and food distribution programs. Recent reviews by

10 In Vaso de Leche, a program that Stifel and Alderman (2003) consider to be the largest social transfer in Peru, selected households receive milk or milk-products. Although the program is well targeted to the poor and leakages are minimal, it fails to achieve its main nutritional objective of improving child height. The authors argue that the reason behind the lack of impact is that half the in-kind transfers are infra-marginal (i.e. to Type III agents in Figure 1) so that the provision of milk did not have an impact beyond the income transfers it represented. The authors conclude that cash transfers may have been a superior means of increasing consumption of milk if they are less costly and more efficiently distributed than food transfers. However, as suggested by Van de Walle (1998), in-kind transfers might be more politically feasible than cash transfers. Whether political gains outweigh implementation cost in this instance remains an open question.
Ravallion (2003) and Van de Walle (1998) document both the ways in which these schemes have been evaluated as well as their ability to lift households out of poverty. These reviews show that success is closely tied to whether the conditionality simultaneously satisfied two goals: (a) that the targeted group was willing to participate in the program and (b) that the group not targeted found the conditionality too expensive compared to the rewards of the program.

4.1 Means Testing

Given the difficulty of meeting these requirements, policy-makers adopt targeting schemes that avoid the use of conditionalities completely and directly targets cash based on observable household characteristics. This method, known as means testing, directly collects more data on the identity of individuals and thus avoid the need to devise screening mechanisms. Innovative programs have emerged during the last decade with different eligibility criteria. In some programs (such as PROGRESA in Mexico or Bolsa Familia in Brazil) means tests are based on detailed data collection and identification of household wealth (the Bolsa Familia, for instance provides cash only to households with per capita monthly incomes less than 90 reais). In other cases where data collection on household assets may be too expensive or politically infeasible, other proxy indicators of wealth have been used.

Two such examples are the food-for-education program in Bangladesh and the Vaso de Leche program in Peru. Under the food for education program in Bangladesh, food was provided to children attending school at least 85 percent of the time. In addition, an attempt was also made to ensure that only poor households were eligible for the transfer. In the absence of data on household income or assets, the eligibility criteria were based on easily observable correlates of poverty—whether or not the household head is a widow, the amount of land owned by the household and the employment of the household head. These criteria did ensure that the poor received higher transfers, but not by much. Galasso and Ravallion (2004) show that the difference in receipts between the rich and the poor was marginal.

In the case of the Vaso de Leche program in Peru, a committee was in charge of “observing” the relevant characteristics of households to determine eligibility. Despite the potential ambiguities of such strategy, the program did result in marginally greater transfers to the poor. Using measures of participation and expenditure levels, Stifel and Alderman (2003) show that the Vaso de Leche program resulted in the allocation of more than 60 percent of the value of all transfers to the poor (which was not much better than random allocation).

Thus, when means testing is feasible the problem of targeting resources to a particular subset of households is reduced. The extent to which this becomes less of a problem depends on the sophistication of the data—in cases such as the Bolsa Familia, where the means test is based on detailed household information, targeting is more efficient than in, say, the Food for Education program.
4.2 Screening

In cases where means tests are logistically or politically infeasible, CCTs can be used as screening mechanisms, whereby only members of the targeted group *self-select* into the program. One example of particular interest is that of targeting to the poor. In such cases, the requirements for self-selection can be expressed in terms of the income effect of the conditioned-on good so that targeting is successful if the conditioned-on good is inferior. Then, the rich (who consume less of the good to start with) will find the costs of meeting the conditionality higher than the poor and will disproportionately opt out of the program.

In Figure 1, the conditionality $X_0$ induces exactly this sort of screening. Type II and Type III individuals participate in the program, while Type I individuals voluntarily decide to opt out. If we are to think of this as targeting to the poor, Type II and Type III individuals are less wealthy and Type I individuals are more wealthy. The good is inferior because consumption decreases in wealth. Examples of CCTs as screening mechanisms include well-documented workfare programs (Van de Walle, 1998, Galasso and Ravallion, 2003), rationing of food or health subsidies by queueing (Alderman, 1987) and the packaging of commodities that are unappealing to the rich (Alderman and Lindert, 1998, Jacoby 1997). Nevertheless, the requirements for CCTs as screening mechanisms may be hard to satisfy.

The Plan Jefes y Jefas program in Argentina was designed to increase employment by providing a subsidy for only those individuals who were trying to find employment. Household heads who were initially unemployed could apply for the program under which they would receive cash if they found employment and undertook “20 hours of counterpart activities such as basic community work, training activities, school attendance or employment in a private company with a wage subsidy for six months” (Galasso and Ravallion, 2003). Why was the conditionality of counterpart activities imposed?

In Argentina it is hard to verify whether an individual is unemployed or not, since over half of all employment is in the informal sector. The 20-hour requirement acts as a screening device: individuals who are already employed are unwilling to sacrifice their work (or leisure) time for the benefits of the program, whereas this cost is much lower for those who are currently unemployed. Galasso and Ravallion (2003) find that the conditionality was only partially successful in ensuring that the already employed did not participate and even less so in increasing employment. Only 3 percent of beneficiaries had formal employment to start with and so the program did ensure that those with formal employment

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11 As discussed above, self-selection implies that the net benefit of the program is positive for the targeted group and negative for others. This “single-crossing condition” requirement is detailed in Spence (1973), and Rothschild and Stiglitz (1976).

12 The consumption of an *inferior* good decreases with wealth. In contrast, the consumption of a *normal* good increases with wealth.
did not participate, but they also find that 19 percent of beneficiaries were already employed in the informal sector to start with.

At the same time, increases in employment rates were much less than envisaged due to the inability of the program to distinguish between individuals who were “inactive”, i.e. out of the labor force, and those who were unemployed, that is people actively searching for a job but unable to find one. In fact, 38 percent of eventual recipients were inactive and consequently Galasso and Ravallion (2003) conclude that “a large share of the participants were women who would not otherwise have been in the labor force”. The conditionality thus failed on two counts: it was not “expensive” enough to ensure that individuals employed in the informal sector opted out, nor was it “expensive” enough compared to the opportunity cost of losing 20 hours of housework. As opposed to the previous evaluations, where higher program uptake is always better, this example illustrates the idea that program uptake can also be too high compared to its stated objectives.

5 Conditional Cash Transfer Schemes and the Efficiency-Equity Debate

The preceding discussion suggests that conditional cash transfers impact both on efficiency and equity, regardless of the initial objective of the scheme. In some cases, the scheme can result in positive impacts on both fronts. Particularly in instances where the conditionality is imposed on an *inferior* good, the provision of cash could lead to an increase (say) in human capital while simultaneously ensuring that the rich select out of the program. In this case, both efficiency and equity would have been enhanced. A possible example of such multiple positive impacts is conditioning cash on attendance in public schools in environments where the rich use private schooling (something that is fairly common in South Asia). In this case, the transfer would result in greater school enrollments. Further, since the rich do not use public schools the benefits of the program would be felt (mostly) by the poor—both efficiency and equity objectives would have been met at the same time.

In other instances though, there is a potential tension between efficiency and equity when using CCT programs. The implementation of CCTs to increase human capital investments could impact adversely on equity; similarly, the distortions required for self-selection to work could impose an efficiency cost. Policy makers tend to be aware of the contradictory roles that CCTs are sometimes required to fulfill and the use of eligibility criteria and means-tests in programs such as the Bolsa Familia and the PROGRESA are specifically introduced to minimize adverse redistributive impacts. In other cases, the net impact of the trade-off is less clear.
5.1 Efficient but not equitable?

Consider for instance, the Female Stipend Program in Bangladesh, implemented to increase secondary school enrollment of girls. Under this program, the government gave stipends to girls who attended at least 85 percent of classes. What differentiates this program from the Food-for-Education program is the complete lack of means-testing; besides the attendance requirement, there are no further eligibility criteria.

Khandker and others (2003) evaluate the program and find that girls’ secondary education increased substantially as a result. If girls’ education levels were inefficiently low to begin with, the program served to decrease the gap between societal preferences and individual actions. However, in Bangladesh secondary public schooling for girls is a normal good with richer households more likely to enrol their children in secondary schools compared to the poor. For particularly poor households, it is likely that the opportunity cost of 85 percent attendance in terms of labor lost exceeds the benefit of the stipend. Consequently Khandker and others (2003) find that the program has adverse distributional impacts: “(The) currently un-targeted stipend disproportionately effects the school enrollments of girls from households with larger land wealth. Targeting towards the land poor may reduce the overall enrollment gains of the program while equalizing enrollment effects across landholding classes.”

Note that the adverse redistributive impact is not a sufficient reason to discontinue the program. One approach to address this problem, as suggested by Khandker and others (2003), is to introduce means-tests in addition to an increase of the cash transfer amount. Indeed, when the conditionality is imposed on a normal good, means testing becomes a screening tool that is a complement to the CCT scheme, alleviating the adverse redistributive impact of the conditionality.

5.2 Equitable but not efficient?

Using CCTs as a screening device for targeting also comes at a cost, arising from the distortion in consumption and investment choices induced by the conditionality. One such example is that of targeted food subsidies to the poor, where the quality of the food given is low. Since low quality food is an inferior good (as income increases, people start increasing the quality of the food they eat) this would presumably lead to greater food subsidies for the poor compared to the rich. The Nutribun and Milk program in Jamaica is one such example. Under this program, children in school received a nutritious baked product everyday. In his evaluation, Jacoby (1997) finds that the program achieved its aims in terms of targeting—lower uptake among the rich implied that the benefits from the program as a share of total consumption fell from 4.8 percent for the first decile to 1.2 percent for the fifth decile.
The effective targeting did not necessarily make for a successful program. However Jacoby (1997) argues that the deadweight loss of the program was large. By using the notion of equivalent variation—the smallest increment in cash that would have achieved the same objective—Jacoby (1997) shows that the benefit per respondent was J$152, compared to the program cost of J$400. Thus more than half of the costs of the program were estimated deadweight losses due to the implied conditionality of the transfer. Whether the benefits of targeting exceeded this loss is an open question.

In the Plan Jefes y Jefas program discussed above, although the program did result in greater benefits to the poor, what was the efficiency cost in terms of foregone incomes from the conditionality (the 20-hour counterpart work requirement)? Galasso and Ravallion (2003) estimate the average opportunity cost to be around 50 pesos, corresponding to a third of the amount of cash transferred by the scheme itself. A possible next step would be to trace out the losses in targeting effectiveness from decreasing the conditionality against the gains from increasing efficiency.

In this case, means testing is a substitute for conditional cash transfer schemes. The costs of implementing means tests should then be weighed against the efficiency losses necessary to obtain self-selection of participants and arguably, the optimal redistribution tool is a combination of the two.

5.3 Beyond Efficiency: Political Economy

The two rationales discussed in this paper, efficiency and equity, form the basis for a number of conditional cash transfer schemes, but are by no means an exhaustive list. A third important consideration relates to the incentives of the institutions that provide the cash for such schemes, whether they are country governments or donor organizations. Governments that are primarily concerned with targeting resources to the poor can ill-afford to ignore the fact that the public may favor work requirements or school attendance in exchange for public assistance rather than cash payments with no strings attached (van de Walle, 1998). On the other hand, some leakage of program benefits to the non-poor in primarily efficiency-increasing programs may be more appealing to middle class voters, which could increase the overall budget available for such programs (Gelbach and Pritchett, 2002). These political-economy considerations surely play a vital role in the design of conditional cash transfer programs.

Conditional cash transfer programs also serve the direct purpose of imposing donor preferences when tastes over allocations differ (Culyer 1991 and Tobin 1970). Even without different preferences, an agency view of policy making can provide a rationale for why CCTs are desirable and increasingly popular. Since aid agencies are accountable to donors and ultimately taxpayers, transparent and observable measures of performance need to be implemented to ensure proper monitoring. CCT schemes are then suitable tools for aid agencies to move
toward the announced objectives, although the exclusive focus on measurable dimensions of performance may come at the expense of more comprehensive and efficient development policies, the impacts of which are difficult to assess.\footnote{For a formal treatment of this problem, see Holmström and Milgrom (1991).}

To illustrate this, consider the Millennium Development Goals (MDGs) for education: “Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary training” (http://www.developmentgoals.org/Education.htm). This objective includes enrollment of all school-age children and universal primary completion. What is interesting is that the enrollment rate is officially included in the MDG indicators, but the primary completion rate is not. The former is a clearly identifiable indicator, the latter is fuzzy with differing definitions and scales across countries. The problem again arises due to an externality—in making their schooling decisions, it is unlikely that parents take into account the idea that enrollment might induce additional aid flows from donor countries. Imposing conditionalities then yields considerable political gains in the production of verifiable and clearly observable outcomes.

The stress on verifiability may come at a cost. The first round of CCT programs that were implemented, including the Bolsa Familia and the Food for Education, were careful in their consideration of the trade-offs between equity and efficiency. Later programs such as the Female Stipend in Bangladesh were not. Unfortunately, the MDGs for education do not require that adverse distributional impacts of educational policies are minimized and hence the temptation to implement programs that perform better on the verifiable dimension only may be high. This may lead, on the one hand, to CCT schemes that enhance efficiency but worsen equity and on the other, to schemes that yield immediate gains but impose long-run costs.

We have so far compared CCT schemes with their unconditional counterparts. If the rationales invoked previously justify the use of CCT schemes, we now want to briefly compare CCT programs with other possible policy interventions. Continuing with education, Case and Deaton (1999) find for South Africa that pupil-teacher ratios have strong and significant impacts on enrollment, educational achievement and test scores for numeracy. Should South Africa then use mainstream CCT programs to improve educational outcomes? While these programs will arguably have immediate (political) impacts, the alternative of reducing class sizes could have long-lasting positive effects, which is hard to measure in the short run. These two alternative policy instruments illustrate the trade-off between short-term and long-term impacts. These results also suggest a quantity-quality trade-off: increasing enrollment (through the implementation of CCT schemes for example) without supplying additional teachers will be harmful to educational achievements and test scores in the long run. While emphasis on “demand-side” policies (such as CCTs) brings political
gains and ultimately future aid flows, it comes at the expense of other policy instruments and these trade-offs require careful consideration.

6 Conclusion

This paper examines a wide range of CCT programs and tries to understand and interpret various evaluations in the literature. Figure 2 synthesizes the discussion conducted throughout the paper. Two important ideas emerge. Conditional cash transfer schemes can be justified on efficiency grounds to alleviate market failures, and/or on equity grounds to redistribute resources. The choice of the good on which the conditionality is imposed is crucial. In particular, the extent to which the good is fungible makes a significant difference, depending on the underlying motivation for the program. Second, these two motivations while theoretically distinct, are simultaneously present in a number of different CCT programs. The extent to which the efficiency and equity objectives result in a trade-off can be addressed through the conditionality requirement, the amount of the cash conditionally transferred, and the refinement and enforcement of eligibility criteria. Our review of the literature suggests that researchers have typically addressed these issues separately. However, policy-makers need to incorporate a number of different factors in a comprehensive framework to design optimal schemes.
References


Figure 1: Households and Conditional Cash Transfer Schemes

Diagram showing different budget constraints for types of conditional cash transfer schemes.
Textbook Case: Unconditional transfers are better than conditional transfers

Why have Conditional Cash Transfers?

Efficiency Rationale: Improve efficiency by reconciling societal preferences with individual decisions

Redistributive Rationale: Target transfers to the poor when there is asymmetric information (the identity of the poor is unknown)

Why might Conditional Cash Transfers not have their desired impact?

Design and Implementation: Very low participation in the program because the benefit of the transfer is less than the cost of the conditionality. This is either due to poor design (too little cash in the design of the program) or poor implementation (corruption, leakage)

Fungibility: Individuals undermine the rationale of the program by changing their consumption or investment patterns for a close substitute of the conditioned-on good. Examples include decreasing the consumption of oranges when given vitamin C tablets, or cutting back on food intake at home when given food in school

Tradeoffs: Is there a tradeoff between the efficiency and the redistributive rationale? That is, do conditional schemes that seek to restore efficiency have adverse redistributive impacts? Alternatively, do redistributive schemes have adverse efficiency impacts?

Cost-Benefit Analysis: How big are the externalities that the conditional cash transfer addressed in the first place?
<table>
<thead>
<tr>
<th>Authors</th>
<th>Program</th>
<th>Main Finding</th>
<th>Issues Covered</th>
</tr>
</thead>
</table>
| Alaii and others     | The western Kenya insecticide-treated bed net trial (ITN) | • Perceived private benefits from ITN use is low.  
• However, positive externalities imply that ITN had an effect on the spatial distribution of malaria vectors within 600 meters of the control villages.  
• Effect on child mortality, moderate anemia, high-density parasitemia, and hemoglobin levels within 300 meters of the control villages. | Implementation, physical externalities |
| Alderman and Lindert | Food subsidies (Tunisia)                      | • Self-targeting through choice of commodity found to be effective to improve targeting efficiency.  
• However, this effect is not as sharp as other mechanisms employed elsewhere, such as means-tested food stamps in Jamaica and geographically targeted food supplementation in Peru. | Targeting, redistribution, political economy of aid. |
<p>| Behrman and Hoddinott| PROGRESA (Mexico)                             | • Positive impact of nutritional supplements and other child health interventions on child growth and probability of being stunted.                                                                            | Household bargaining, fungibility        |</p>
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<tr>
<th>Authors</th>
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<tr>
<td>Bourguignon and others (2002)</td>
<td>Bolsa Escola (Brazil)</td>
<td>• Ex-ante evaluation of the program showed increases in school enrollment,</td>
<td>Implementation, targeting, redistribution.</td>
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<td></td>
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<td>with larger effects for poor households.</td>
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<td></td>
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<td>• No effect on current poverty levels</td>
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<td>• Unconditional cash transfers would have no impact on child labor and school</td>
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<td></td>
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<td>enrollment rates</td>
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<td>Cardoso and Souza (2003)</td>
<td>Bolsa Escola (Brazil)</td>
<td>• No impact on child labor, but positive impact on enrollment.</td>
<td>Targeting, fungibility, efficiency.</td>
</tr>
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<td>Galasso and Ravallion (2002)</td>
<td>Food for Education</td>
<td>• Program mildly pro-poor.</td>
<td>Targeting, efficiency</td>
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<td></td>
<td>(Bangladesh)</td>
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<tr>
<td></td>
<td>(Argentina)</td>
<td>• Foregone incomes equal roughly one-third of the cash transfer provided by the plan.</td>
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<tr>
<td>Jacoby (1997)</td>
<td>Nutribun and Milk Program (Jamaica)</td>
<td>• Poorest households receive the largest benefits.</td>
<td>Targeting, redistribution, efficiency</td>
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<td></td>
<td></td>
<td>• However, benefits per beneficiary child are less than 50% of program cost,</td>
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<td></td>
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<td>suggesting considerable deadweight loss.</td>
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<tr>
<td>Jacoby (2002)</td>
<td>School Feeding Program (Philippines)</td>
<td>• On school days, the calorie intake of children is higher by 80% of the caloric value from the school feeding program.</td>
<td>Fungibility, redistribution</td>
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<td></td>
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<td>• Effects weaker for children in poorer households.</td>
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<td>Khandker and others (2003)</td>
<td>Female Stipend Program (Bangladesh)</td>
<td>• Girls’ secondary education increased substantially, while boys’ education decreased in some instances</td>
<td>Implementation, equity-efficiency trade-off, fungibility</td>
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<tr>
<td></td>
<td></td>
<td>• Benefits from the program accrued disproportionately to girls from households with large landholdings.</td>
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<tr>
<td>Kremer and Miguel (2003)</td>
<td>Western Kenya Deworming Project</td>
<td>• Negative social learning effects lead to “free-riding” due to the positive externalities of deworming treatment</td>
<td>Learning externalities</td>
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<td></td>
<td></td>
<td>• Need to continue subsidies indefinitely</td>
<td></td>
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<tr>
<td>Miguel and Kremer (2003a)</td>
<td>Western Kenya Deworming Project</td>
<td>• Positive School participation increased in control group.</td>
<td>Implementation, physical externalities, cost-effectiveness</td>
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<td></td>
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<td>• Externalities for students in treatment schools and neighboring schools.</td>
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| Miguel and Kremer (2003b) | Western Kenya Deworming Project | • Small increase in price of deworming pills lead to large reduction in take-up rates.  
• Health education and community mobilization programs failed.  
• Latrines and boreholes were far less cost-effective than provision of deworming pills. | Implementation, cost-effectiveness of program vs. alternative counterfactuals |
| Ravallion and Wodon (2000) | Food for Education (Bangladesh)   | • Program increased schooling.  
• This increase was far more than the decrease in child labor. | Implementation, equity-efficiency trade-off, fungibility |
| Schultz (2001)           | PROGRESA (Mexico)                | • Positive impact on school attainment.  
• For most families in rural Mexico, the effect is a wealth effect. | Implementation, equity-efficiency trade-off, fungibility |
| Stifel and Alderman (2003) | Vaso de Leche (Peru)             | • Program well-targeted to the poor and has minimal leakage.  
• No impact on the main goal of increasing child height. | Targeting, fungibility, implementation. |