



FONDATION POUR LES ÉTUDES ET RECHERCHES SUR LE DÉVELOPPEMENT INTERNATIONAL

# **Protecting Vulnerable Children from Uninsured Risks: Adapting Conditional Cash Transfer Programs to Provide Broader Safety Nets**

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Document de travail  
Série « Politiques de développement » / P4  
Décembre 2008

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Adapting Conditional Cash Transfer Programs to Provide Broader Safety Nets**

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December 2008 draft

**Abstract**

*Conditional cash transfer (CCT) programs have proved to be effective in inducing chronic poor households to invest in the human capital of their children while helping reduce poverty. They have also protected child human capital from the shocks that affect these households. In this paper, we argue that many non-poor households exposed to uninsured shocks have to use children as risk coping instruments, with the risk of creating long term irreversibilities in child human capital development. We review recent experiences to explore how CCT programs could be designed to serve as safety nets for the vulnerable non-poor when hit by a shock. This would require a number of modifications to the way rules of operation of CCT programs are currently designed. As developing countries enter into a period of increasing economic turbulence, providing extended safety nets to the children of the transitory-poor is becoming a key feature of social protection.*

In the last two decades, there have been major successes in moving millions of people out of chronic poverty. Chen and Ravallion (2004) estimated that the number of extreme poor, with daily income less than one dollar, fell by some 400 million between 1981 and 2001, implying a halving of the world extreme poverty rate from 40% to 21%. This success was, however, confined to East and South Asia, and mainly to China. In the rest of the world, the number of extreme poor has remained about constant. And it rose in Sub-Saharan Africa, Latin America and the Caribbean, and Eastern Europe and Central Asia. Using a \$2 a day poverty line, the number of poor rose for the world over the period.

These figures show that the fight against poverty is far from won. This is in a sense surprising. While major inroads have been made in taking large numbers of people out of chronic poverty, we see reproduction in the number of people in extreme poverty in many parts of the world, and a rise in \$2 a day poverty worldwide. This implies that there exists a source of new poor that can partially or completely erase the gains made in taking people out of poverty.

Following a pathways from poverty framework (de Janvry and Sadoulet, 2004), reduction in chronic poverty has been achieved through the use of three types of instruments:

i) Increased access to assets for the poor. This has been the consequence of improvements in human capital such as health and education, redistributive programs for natural capital such as

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land reform, improved access to financial capital for the poor, programs of capital transfer to poor entrepreneurs, and the build up of social capital among the poor.

ii) Improved opportunities for the poor to use their assets more productively. This has been due to expanding employment opportunities for unskilled and low-skilled labor as a consequence of labor-intensive growth, technological change in smallholder production, access to new markets and reduction of transactions costs in accessing markets, public goods investments such as infrastructure, and institutional innovations supportive of the competitiveness of small farmers and small entrepreneurs such as improved financial services, insurance for production and prices, legal provisions for contracting, and more effective producers organizations

iii) More effective and more inclusive social assistance programs targeted at the chronic poor. This includes large cash transfer and conditional cash transfer programs effectively reaching the poor. In both Brazil (Helfand and Levine, 2005) and Mexico (World Bank, 2004), uplifting many extreme chronic poor from poverty during the last decade has been largely credited to the transfers achieved through these programs.

While a lot has been learned about how to reduce poverty through these three instruments that offered pathways out of poverty to the chronic poor, uninsured exposure to risk remains an important source of new poor, while little has been done to protect the vulnerable non-poor from slipping into poverty due to shocks (Dercon, 2006).<sup>1</sup> As a consequence of this lack of attention to the vulnerable non-poor, some programs targeted at the chronic poor that have been effective in uplifting large numbers of people out of poverty have eventually not reduced aggregate poverty as an equal number of people moved into poverty (UNDP, 2004). A study in Andhra Pradesh showed that while an array of government programs helped 14% of poor households move out of poverty, 12% of the non-poor households fell into poverty due to a variety of shocks during the same period, leaving poverty rates largely unaffected (Krishna et al., 2004a). A similar study in Kenya showed that while 19% of households in Western villages moved out of poverty, an equal percentage fell into poverty for reasons associated to idiosyncratic shocks (Krishna et al., 2004b). In Mexico, it is widely recognized that in spite of reasonable economic growth and extensive anti-poverty programs, the reason why the incidence of poverty has remained relatively stable over the long run is because vulnerability to shocks has acted as a “fabrica de pobres” (World Bank, 2004).

In recent years, economic turbulence has become an increasingly prevalent feature of the world economy, affecting particularly hard the developing countries with weak instruments to manage risk and protect those affected by economic shocks. This has been particularly evident with the cumulative effects of the energy, food, financial, and climate change crises. Giving increasing importance to vulnerability in the design of social assistance programs is thus increasingly necessary, and a key feature in successfully combating poverty (Lee, Perry, and Birdsall, 2008).

In a long term perspective of poverty reduction, what these observations tell us is that it may be equally important to prevent downward mobility of the vulnerable non-poor into poverty as it is to assist the chronic poor move out of poverty. Yet, little attention has been given to the first, and there is scant experience in program design as to how to achieve protection of the vulnerable, in particular to prevent them from “excessive” asset decapitalization when hit by an uninsured shock that may create long term poverty traps or strong difficulties in re-accumulating assets to move out of poverty.

This is of particular importance in the case of child human capital, a fundamental asset for poverty reduction in the next generation. Many programs have been effective in inducing poor parents to invest in the human capital of their children. This includes massive interventions through conditional cash transfers (CCT) on the demand side, and large investment programs in educational and health improvement on the supply side. Yet, the children of vulnerable non-poor households remain exposed to shocks as they are disqualified from inclusion in social protection programs for not being among the chronic poor (World Bank, 2004). The ability of these households to keep their children at school and in good health when hit by large shocks may be as low as that of the poor.

Successful improvement in the education and health of the children of chronic poor households through CCT programs may thus be partially cancelled by a loss of human capital among the vulnerable non-poor. This requires revisiting the design of CCT programs so they could achieve both goals: provide education and health services to the children of the chronic poor, as they currently do, and additionally help keep the children of the vulnerable non-poor at school and in good health when hit by a shock. This is what we explore in this paper. The justification is that extending CCT programs to serve both functions could make a major contribution to long term poverty reduction.

In order to explore this function of CCT programs, we first review the mechanisms through which uninsured exposure to risk is adverse to household welfare: ex-ante risk management reduces households' expected incomes as the cost of risk avoidance; and ex-post response to shocks, when harmful risk-coping instruments such as taking children out of school are used, leads to loss of human capital and long term irreversibilities in their income generation potential.

Then, we examine how risk-focused social protection programs can be used to protect the assets of the poor when hit by a shock. This is done either directly by sheltering from shocks the assets of vulnerable households (health, nutrition, schooling, livestock, physical assets), or indirectly by placing conditions on transfers that restrict asset decapitalization.

We then proceed to make the case for a CCT approach by using available evidence to show that it is vastly more cost effective than cash transfers in inducing investment in child human capital. Additionally, evidence from CCT programs in Mexico, Nicaragua, and Honduras shows that they have been quite effective in protecting the children of poor beneficiaries from being used as risk coping instruments when hit by shocks. Nonetheless, these experiences also indicate that there exists a large class of vulnerable non-poor households who are currently excluded from CCT programs that target the chronic poor but who also respond to shocks by using children for risk-coping. It is this class of households that risk-focused CCT programs would protect, avoiding that their children become a source of new poor when exposed to uninsured shocks.

Finally, we explore elements of design of a CCT program with safety net functions. We do this by reviewing program features in existing risk-oriented programs (not only CCT) that allow better targeting of risk-coping instruments, greater program effectiveness for ex-ante risk management, and higher program efficiency by providing incentives to reduce moral hazard, induce self-restraint, and encourage graduation. We then conclude with recommendations about piloting CCT with a safety net function.

## **Uninsured Exposure to Risk and Poverty Reproduction**

There are two mechanisms through which uninsured risks contribute to poverty, one in the short run and the other in the long run. In both cases, child human capital may be lost due to these risks.

### ***Uninsured Risk and Ex-ante Risk Management***

In the short run, households who anticipate the adverse consequences of shocks against which they are not insured may devise strategies that will reduce the exposure to and adverse consequences of the shock. When there is a risk-return trade-off in activity choice, this will result in a less productive use of the assets, contributing to poverty. This is because such ex-ante risk management strategies have a cost on expected return: income diversification strategies reduce risk but they also sacrifice the expected income gains from specialization, safer traditional technologies have lower expected yields than more risky modern high yielding varieties, and secure civil service employment offers lower salaries than labor returns in more risky private sector activities.

As a consequence of their need to manage risk ex-ante, the asset portfolio of vulnerable households has been shown to have a high component of precautionary savings which immobilizes assets in unproductive or low productivity activities (Fafchamps, 2003). This can be under the form of cash, jewelry, grain stocks, and animals held for precaution. Buffer stock saving is done at an opportunity cost on scarce capital assets that could be used more productively if there were fewer uninsured risks, and there is relatively more buffer stocking among the poor due to higher levels of risk aversion and greater exposure to insurance and capital market failures than among the non-poor (Rogg's (2005) study of livestock holdings in Ethiopia). The composition of portfolios of productive assets is also biased toward larger holdings of liquid assets, with a lower return than fixed assets that cannot be used for risk coping if there is a shock. This is the famous study of distorted portfolio holdings toward bullocks and away from water pumps in India (Rosenzweig and Wolpin, 1993).

Other aspects of ex-ante risk management that have a cost include keeping children close to home and in the local solidarity network, sacrificing the net social gains that could be derived from letting them migrate, in order to avoid the risk of seeing them exit from the kinship safety net. This "collective conservatism" (Kuran, 1988) in managing risk at the level of kinship networks may prevent children from capturing opportunities on their own, including seeking higher education that may help them migrate (Hoff and Sen, 2005).

If risk-focused social protection programs offer insurance against the consequences of shocks, then households can reduce costly ex-ante risk management. It is in that sense that there are efficiency gains to social protection programs when they offer credible insurance or income guarantee schemes allowing greater risk taking. Risk taking does not have to only be in microenterprises that may concern a small fraction of the poor, but also in choosing employment options that promise greater rewards at the cost of higher risk. Social protection programs such as workfare available on demand can fulfill this insurance function, helping reduce the cost of ex-ante risk management. Similarly, CCT programs that would provide anticipated cash when a shock occurs would allow greater risk-taking by knowing that child schooling will be protected. It is this potential function of CCT programs that we explore in this paper.

### ***Uninsured Risk and Ex-post Risk Coping***

The long run effect of a shock on poverty will be felt if the ex-post, risk-coping instruments available to a household are ineffective or incomplete, leading to “excessive” asset decapitalization to cope with the shock and protect consumption. There are four possible consequences of such “excessive” asset decapitalization that imply a long run contribution to poverty.

The first is when there are sharp convexities in asset accumulation at low levels of asset ownership.<sup>2</sup> Hence, once fallen to low levels of assets as a consequence of a shock, it may take a very long time to reach again a level of assets sufficient to move out of poverty. This path will be all the more convex that poor households manage their assets less productively due to the need for risk management. Empirical evidence provided by McKenzie (2005) for Mexico shows that such convexities affect the poor more than the middle class, and the middle class more than the rich, creating divergence in asset accumulation over time.

The second consequence is when irreversibilities are created by asset decapitalization to cope with a shock. Examples abound. Children may be taken out of school because child labor or saving on school expenses are needed to cope with a household income shock, compromising their long term educational achievements due to strong state dependence in returning to school after having dropped out, even for a short period of time (Jacoby and Skoufias, 1997; de Janvry, Finan, Sadoulet, and Vakis, 2005). Infant nutrition in the critical first years of life may be reduced due to an income shortfall, leading to a long-term negative impact on children’s physical development that cannot be compensated by subsequent nutritional interventions (Alderman, Hoddinott, and Kinsey, 2006; Hoddinott and Kinsey, 2001). Health maintenance may be postponed because of an income shock, leading to a long run loss in labor productivity. Seeds may be eaten as food during a drought, preventing planting when the rains return.

The third is when there are high re-entry costs into the labor force or an independent business, following exits due to short run shocks. Inability to pay rent for a few months may throw a tenant into homelessness, creating insurmountable difficulties to re-enter the housing rental market and the labor force. Move to a refugee camp may doom the possibility of recuperating land in the community of origin or of starting over an independent business.

The fourth is true poverty traps created by stable low level equilibria into which a household falls back unless there is a sufficiently large jump in asset holdings to reach another stable equilibrium. Santos and Barrett (2005) show that, in Ethiopia, there is a minimum herd size that needs to be maintained to undertake migratory herding when local pastures are depleted. Difficulty to recapitalize is reinforced by social exclusionary mechanisms if low asset productivity due to excessively small herd size leads to exclusion from safety nets that consist in animal transfers to assist herd recovery. As a consequence, “excessive” decapitalization can drive the household into an asset poverty trap (Carter and Zimmerman; Carter and Barrett, 2005). While solid empirical evidence is scarce, this is a classical argument in the development literature in favor of protecting the poor from “excessive” decapitalization.

If risk-focused social protection programs offer access to risk-coping instruments, they can help protect households from “excessive” decapitalization when hit by a shock. In particular, they may prevent households from using child labor and from saving on nutrition and school costs as risk coping instruments with long term consequences on child human capital. CCT programs can offer such instruments, as we explore in this paper.

## **Risk-focused Social Protection Programs**

There exists a broad range of social protection programs. Most have the purpose of reducing chronic poverty. As conceptualized in the pathways from poverty framework, they focus on building the assets of the poor, providing opportunities to the poor to use their assets more productively, and transferring cash or quasi-cash to the poor (social assistance programs). The latter include such programs as food transfers (food stamps, food rations, food price subsidies), cash transfers (grants, non-contributory pensions, family allowance programs), service subsidies (social housing programs, utility subsidies, and subsidized childcare centers), and conditional cash transfers (conditional on child and maternal health care practices, regular school attendance, and nutritional standards, or on use of existing social assistance programs as in Chile Solidario). These programs are typically targeted at the chronic poor. Hence, the question of the vulnerable non-poor remains unaddressed. For the chronic poor, these programs indirectly reduce vulnerability by raising income levels, thus lowering the risk of falling back into poverty as a consequence of an uninsured shock.

We are concerned here with risk-focused social protection programs. Following the logic of the role of risk as a determinant of poverty, these programs can be used by households either to lower the cost of risk management, thus reducing their ex-ante chance of being in poverty, or for risk-coping purposes, thus reducing the risk of excessive decapitalization of assets in response to a shock. Such programs include transfer programs, quick-disbursing credit programs, insurance programs, workfare programs, and social fund programs introduced as emergency response to shocks.

While these are programs used by vulnerable people when hit by a shock, they affect ex-ante risk management only if households can rely on them. For this, the programs must be in place before a shock hits, the conditions for access to the programs must be well known to households before they are affected by a shock, there must be no risk of rationing in use among eligible households and quick certification when hit by a shock, and there must exist a credible commitment device that these conditions will not vanish with occurrence of a shock. Under these conditions, programs with ex-post risk-coping functions can also serve an insurance function, allowing households to reduce the cost of ex-ante risk management which they incur when they adjust their own income earning strategies.

Most programs with risk coping functions are designed to protect a household's income and consumption when hit by a shock. Protection of income and consumption indirectly protects the household's assets since it does not need to decapitalize as much as it would otherwise have had to in order to compensate for a shock. However, from a social perspective, the risk coping intervention may want to directly protect the household's assets since "excessive" decapitalization will have long run costs, both socially and privately.

This can be done in two ways. The first is through risk coping programs that are directly targeted at sheltering the assets of vulnerable households. This includes health maintenance programs [e.g., fee waivers during a crisis (Indonesia 1998, Thailand 1999, Chile 1973-89), and school feeding programs during a crisis (Thailand 1999)], school assistance programs [e.g., tuition waivers for the children of the unemployed in Korea (1998), and "stay at school" emergency scholarship programs during a crisis in Indonesia (1998-2003)], fodder subsidies for livestock during a drought (Namibia 1992-93), and physical reconstruction programs following natural disasters, conflicts, and economic crises (as in many of the social funds programs, particularly in Africa and Central America).

The second approach is through cash transfers for the maintenance of income and consumption, with conditions attached restricting asset decapitalization. This is what CCT programs with conditions on child education and health would achieve: the cash transfer provides income and consumption protection for the recipient household, and the condition implies that accepting the transfer will protect child human capital from being used as a risk coping instrument. The role of the condition, acting as a price effect on the conditioned asset, is to complement the income effect that the cash transfer would induce. If the price effect is much larger than the income effect, then constraining behavior toward asset decapitalization can be an enormously efficient way of providing risk coping while protecting children's assets.

This potential function of CCT programs has never been implemented. By expanding the scope of CCT interventions in a non-traditional way via targeting non-poor but risk-exposed households, such programs could provide social assistance while at the same time protecting child human capital from exposure to shocks that would be a source of future poor. The next section discusses this further.

### **Is a CCT Framework Appropriate for Risk-focused Social Protection?**

In making the case for the appropriateness of a risk-focused CCT approach, we confine our attention to schooling decisions. We show how CCT can serve as a cost effective instrument in not only inducing investments in schooling by the chronic poor, but also in protecting children from being used as risk coping instruments by vulnerable non-poor households who would respond to shocks by using children for risk-coping.

#### ***Effectiveness of CCT vs. CT in Inducing School Attendance***

CCT programs that impose a condition on school attendance and health practices have proven to be highly effective in enhancing the human capital of the children of poor people compared to what could be achieved through an income effect if the supply side of these services is in place. Some of these programs have become quite large, such as Oportunidades in Mexico that covered 4 million families at the annual cost of \$2.2 billion in 2005, and Bolsa Escola that covered 4.9 million families at the cost of \$700 million in 2004 (Rawlings and Rubio, 2005). Besides the direct poverty reduction effect achieved by the cash transfers, these programs have been shown to be effective in enhancing educational achievements (Schultz, 2004; Behrman, Sengupta, and Todd, 2006), bettering child health (Gertler, 2004), improving nutrition (Hoddinott and Skoufias, 2004), and reducing child labor (Parker and Skoufias, 2004). There are also important secondary effects of the programs such as local expenditure linkages (Coady and Harris, 2001), household income multipliers through investment of surplus cash in productive activities (Gertler, Martinez, and Rubio, 2005), and educational spillover effects on the non-poor in the same rural community (Bobonis and Finan, 2008).

The key issue, if the objective of an intervention is to induce a higher demand for education among the poor, is to decide whether to obtain it through an income effect (cash transfer, CT), or through a price effect (conditional cash transfer, CCT). There are two sources of evidence that support the proposition that, dollar for dollar, inducing demand for education via a price effect is much larger than through an income effect. The first is through micro simulating the response to a transfer received by children who go to school (and thus meet the school attendance conditionality) when they have the options of working full time, combining work and

school, and going to school full time (Bourguignon, Ferreira, and Leite, 2003). The transfer can induce some of the children who did not go to school to start attending school while working, or to attend school and not work. Using a conditional transfer similar to that offered by Bolsa Escola in Brazil, the authors find that, among poor households, there would be a decline of 58% among children not attending school, an increase of 7% for children attending school and working, and of 5% for children attending school and not working. By contrast, when the school enrollment condition is not imposed to receive a transfer, the pure cash transfer is predicted to have a zero effect on school enrollment. Hence, a CCT would induce a large increase in child human capital when a CT would not. For Africa, Kakwani, Veras, and Son (2005) show that cash transfers would buy very little in increased school attendance, recommending against their use based on cost considerations. They consequently suggest using CCT instead, but do not provide results of expected impacts due to insufficient information to use a micro-simulation approach.

The second piece of evidence is using observed program impact to measure the magnitude of an income effect versus a CCT effect on schooling decisions. This is done for the case of the Progres/Oportunidades program in Mexico (de Janvry, Sadoulet, Solomon, and Vakis, 2006) by exploring the decision to enter into secondary school for children who are graduating from primary school in poor rural communities. The CCT is exogenous in a randomized experiment organized by Progres in 500 communities with treatment and control. The CT (household total expenditure) is not a controlled experiment. While this estimate thus suffers from endogeneity, stability of the estimated coefficients to introduction of a very large number of child, household, community, and state control variables gives confidence that any endogeneity bias would be very small. The results suggest that a dollar of CCT is about 8 times more effective in inducing school enrollment than a dollar of CT at the mean income of the poor. Using a very different methodology, Todd and Wolpin (2003) confirm this result. They estimate a structural model for Progres and find that 80% of the impact of the transfer is due to the conditionality, with the remaining 20% due to the income effect. Finally, Schady and Araujo (2006), using lack of clarity in the understanding of a non-conditional cash transfer in Ecuador among a subset of beneficiaries, find that a significant increase in enrollment is only found among households who believed that there was an enrollment requirement associated with the program.

We can thus conclude that, once the decision has been taken that imposing a condition on behavior is acceptable and feasible, a CCT is considerably more cost effective than an unconditional CT transfer in altering behavior toward schooling. Hence, if the objective of a social assistance intervention includes preventing decapitalization of child human capital as an element of risk coping, imposing a condition on school attendance to receive a cash transfer could be quite effective.

### ***Effectiveness of CCT as a Risk-coping Instrument in Protecting Child Education***

A number of recent studies have explored the ex-post coping role of CCT. While none of the CCT programs reviewed were originally designed as a safety net program in the sense of responding or adjusting to crises or shocks, one can show that they have performed like one for beneficiary households. These results are important in demonstrating the value of a CCT approach in preventing decapitalization of child human capital in response to shocks.

*Mexico: Progresa.* The Progresa randomized design is used by de Janvry, Finan, Sadoulet, and Vakis (2005) to show that a CCT received in the context of an income shock can be effective in preventing children from being taken out of school. Specifically, they first show that children are frequently taken out of school when parents are exposed to various covariate (natural disasters) and idiosyncratic (health, unemployment) shocks, most often to save on school costs and also to send them to work.

In addition, they also find that there is strong state dependence in child education: a child who dropped out of school for a semester has a much higher chance of not returning to school the following semester. For instance, a child in secondary school who misses a semester has a 23% lower chance of being enrolled the following semester. Girls are more likely not to return than boys. In this sense, shocks create irreversibilities: a short run response in taking children out of school as a risk coping instrument has long run consequences on their levels of educational achievements. Uninsured risk exposure thus contributes to deplete the assets of the poor and to replenish the stock of future poor.

Finally, the study also finds that Progresa transfers fully compensate the impact of shocks on school attendance. Hence, the CCT have been effective not only in raising the educational achievement of the chronic poor, but also in helping their children stay at school when hit by a shock. In fact, for the chronic poor benefited by Progresa, results estimate that a quarter of the educational gains from the CCT were due to their insurance value.

*Nicaragua: Red de Protección Social.* In Nicaragua, the Red de Protección Social (RPS) is a CCT that targets chronic poor households and provides transfers conditional on children staying at school and making regular visits to health centers. Two recent randomized evaluation studies have shown that, in addition to the overall positive impact of the RPS on schooling and health outcomes, the program has also protected households from various shocks. Maluccio (2005) finds that households affected by the coffee crisis (mainly small scale farmers) who were participating in the RPS were not only protected against declines in per capita expenditures but could also shelter child human capital in terms of school enrollment rates and child labor outcomes. Specifically, the RPS enabled beneficiary households residing in the coffee region to maintain pre-program expenditure levels compared to a decline of 22 percent for non-beneficiary households in the same region. Similarly, while overall enrollment rates in the coffee region increased (presumably as a response to declining employment opportunities for children), they increased more for households in the program (by an additional 25 and 10 percent for boys and girls, respectively). Child labor, especially for girls, decreased among program participants residing in the coffee region by 10 percent more than their counterparts without the program. In a separate study, Gitter (2005) showed that the RPS helped households affected by droughts to fully protect child schooling: while school enrollment rates declined by nine percent among households affected by drought, there was no decline among RPS beneficiaries.

*Honduras: Programa de Asignación Familia.* A recent evaluation analysis of the Programa de Asignación Familia (PRAF) in Honduras suggests that it also protected the education of poor households' children in the face of the coffee crisis. The analysis indicates that the combination of income shocks and cash transfers conditional on school enrollment have significantly affected the labor allocation decisions of credit-constrained coffee farmers while protecting children (Coady, Olinto, and Caldés, 2004). In particular, the study finds that the additional liquidity provided by the transfers allowed families to maintain children in school, while increasing the

time dedicated by adults to coffee farming. As such, the CCT via the combination of transfers and conditionality have ensured that labor responses to shocks have not occurred at the expense of investments in children's human capital.

In the three cases reviewed—Mexico, Honduras, and Nicaragua—, the CCT allowed the chronic poor beneficiaries not to use their children as risk-coping instruments, avoiding long term costs on child human capital. This is because the transfers were large enough relative to the shocks observed. This may not always be the case. When transfers are just sufficient to keep children at school in normal times, they may need to be raised when the chronic poor are hit by a shock if child human capital is to be protected. The safety net function of CCT may thus require to both (1) increase transfers to the chronic poor when hit by a shock to induce them to keep children at school, and (2) extend benefits to vulnerable non-poor households with children at risk of being taken out of school in response to a shock.

### ***Ex-ante Protection of Children of Vulnerable Non-poor Households***

The majority of CCT programs are targeted at the chronic poor. The discussion above suggests that the CCT are effective in sheltering the human capital assets of the poor from shocks that would otherwise force them to take their children out of school. The next question that we address is whether there are also vulnerable households, excluded from the CCT because they are not chronic poor, that would take their children out of school if hit by a shock. Given strong state dependence in going to school, this would create irreversibilities in response to shocks. If this is the case, extension of CCT coverage to these households when hit by a shock would help protect the human capital of their children.

To illustrate the above point, we use the Progresa randomized experiment discussed above to measure the impact of shocks on school enrollment across households at different levels of welfare, both below and above the poverty line. Figure 1 summarizes these findings. First, they show how the probability of entering secondary school rises with income. Second, when households are affected by a shock, school participation drops precipitously, including for households above the poverty line, at least for a range 40% above the poverty line (represented in Figure 1 with a move from the “Control no shock” line to “Control shock”). For households below the poverty line, Progresa transfers allow to restore school participation to a level that is not significantly different from the no-shock situation (shown by the “Progresa shock” line). As we have seen it before, the CCT are thus effective in sheltering child schooling from these shocks. Off-sample predictions suggest that this risk-coping role of Progresa, if applied to households above the poverty line (which are indeed also affected but not program eligible), would also help them keep their children at school when hit by a shock. This would require extending CCT coverage to households in a 40% range above the poverty line when hit by a shock. In this fashion, the CCT program would fulfill a safety-net function for vulnerable non-poor children.

### **Designing CCT Programs for Risk Management: What Can We Learn from Existing Interventions?**

Based on the discussion above, how would a CCT program be designed or modified to serve as an instrument to address risk among the vulnerable non-poor which are normally not program beneficiaries? In order to answer this question, we review a number of existing social

protection and poverty related programs (both CCT and non-CCT) around the world that deal explicitly with risk to draw some insights. The key areas we explore relate to: (i) how to determine eligibility in providing access to risk-coping instruments; (ii) how to insure program effectiveness for risk management; and (iii) how to provide incentives to reduce moral hazard and encourage graduation. An initial and not surprising insight in reviewing these programs is the observation that there exists a diverse set of innovative programs with unique features that could be easily integrated in many existing CCT programs to introduce and strengthen their insurance function.

### ***Determining Program Eligibility and Risk***

If a CCT is to serve as a conditional risk-coping instrument to prevent excessive decapitalization in the event of a shock, it is important that the targeting of vulnerable households be accurately done. There are two options to identify eligible households for a risk-focused CCT, one ex-ante relative to shocks and the other ex-post.

*Risk Vulnerability Measures and Ex-ante Eligibility.* Risk vulnerability indicators can be used to define eligibility in an ex-ante manner. In order to implement such an approach in practice, we would need to identify non-poor households who would take their children out of school when exposed to specific uninsured shocks. A risk vulnerability indicator can be calculated using a probability equation of the form:

$Pr(\text{Drop out of school} = 1) = f(\text{child, household, and community characteristics; type and magnitude of shocks; interactions between characteristics and shocks})$

In this case, household characteristics would include not only income/welfare indicators as in the Progres example, but also many other determinants of vulnerability to shocks such as education, age, demographic structure, and gender of the household head. If eligibility is to be shock-specific, these characteristics should be interacted with shocks in calculating the vulnerability score. Such a score would be used to define eligibility. When a shock occurs, all households deemed vulnerable to the particular shock would then be automatically included in the program. An advantage of this approach is that there is no need to verify how the shock has actually affected a particular household but only that it has occurred.

Risk considerations have been considered in the definition of eligibility in various cases. For example, the Jaring Pengaman Sosial, a school scholarship program instituted in the aftermath of the Indonesian financial crisis, uses among its components for eligibility the subjective likelihood that a student may drop out of school due to exposure to the crisis (Pritchett, 2002). The Korea Public Works Program uses the duration of unemployment for household working-age members in its score system that defines eligibility. Similarly, weather-insurance schemes in India and Malawi target groundnut farmers on the premise that this is a high risk crop. Finally, the Livestock Insurance Scheme in Mongolia targets herders due to their high vulnerability to climate shocks.

*Eligibility Based on Ex-post Verification of Shocks.* Ex-post eligibility consists of verifying that a formerly non-eligible household has been affected by a shock and that the magnitude of the impact has been large enough to induce eligibility. As such, there are no ex-ante eligibility criteria other than being non-poor in normal times (chronic poor households should have already been incorporated in the program, irrespective of risk exposure). Ex-post incorporation would

require re-calculation of the score used to determine eligibility. This calculation could be done on demand, with guarantee of a quick response. As such, the qualification formula should include not only structural indicators to detect chronic poverty, but also indicators that respond quickly to the occurrence of a shock. This includes variables such as adult unemployment, family deaths, disabilities, testing positive to HIV/AIDS, and exceptional medical bills. These indicators used to calculate the eligibility score must all be difficult to manipulate by the household and verifiable by program officers or community committees. In the example of children dropping out of school, a formerly non-eligible child affected by a shock would be offered incorporation if the new qualification score (capturing the probability of dropping out of school) reaches above the program threshold.

A number of existing programs use this approach. The Social Relief of Distress Award in South Africa provides cash transfers in the event of shocks. To be eligible, the applicant needs to suffer a shock that renders her unable to support her family's basic needs. The program defines specific shocks that qualify for relief such as death of the breadwinner, incarceration, hospitalization, idiosyncratic disasters (like fire), and natural disasters (such as floods and tornadoes). Similarly, the Disability Grants Program in South Africa offers cash transfers to people who cannot work due to a permanent or temporary disability. The Chile Solidario CCT Program allows for non-poor households to request reexamination of eligibility if they have been affected by a shock such as unemployment.

*Targeting the vulnerable when there is informal employment.* Targeting CCT for vulnerability in developing countries where a majority of the vulnerable near-poor are self-employed or in the informal sector poses an unresolved challenge. For workers in the formal sector, the main indicator of transitory poverty would be loss of employment. In that sense, a CCT would act as an unemployment insurance for child schooling and health. For workers in the informal sector, there are three options.

The first is decentralization to the municipality of the decision to incorporate beneficiaries, under a municipal budget constraint that can vary with the severity of the aggregate shock. This requires municipal accountability and capacity to enforce sanctions if abuse is observed. Random audits can be used for this purpose, as in Brazil, with reduction or loss of municipal allocation if abuse is observed (Ferraz and Finan, 2008). This option is not available when municipal accountability schemes are not in place, as in Mexico.

The second is use of deconcentrated social workers who can investigate requests for incorporation on a case-by-case basis using personal interviews and direct verification. This can work when the number of claims is limited and the program has sufficient staff resources, as with Chile Solidario.

The third is when the first two approaches do not work. Accountability is not in place for decentralization, and the number of claims is too large to personalize demands for incorporation. In this case, the Toronto approach can be used for immediate response: offer support for two months to avoid any irreversibility, with loss of such benefit for the subsequent 24 months if the option has been exercised. The two months period is used to decide on the legitimacy of the incorporation request. Indicators of transitory poverty for informal sector workers must be developed. This is a new field of proxy means targeting that needs to be explored. Recall that for chronic poverty, indicators are a secret mix of assets owned. We have shown that these indicators do not have to be secret if they can predict poverty and cannot be manipulated. For rural CCT, this includes distance to school, gender and rank of the child, and parents' education.

For transitory poverty, incorporation would be (1) a verifiable idiosyncratic shock such as death or disability of a working-age adult, and loss of employment in the formal sector, and (2) raising the chronic poverty threshold when local turbulence rises (loss of local economic activity), to include the vulnerable near-poor among beneficiaries. The indicator of loss of local economic activity should be constructed to serve as a proxy for informal sector employment and value added. This would be done by observing changes in a number of activities to which there is high informal sector participation in each municipality. For municipalities with enough formal employment, the loss of formal employment may also serve as an indicator of overall activity decline. For all municipalities (or localities if one wanted to take the decision down to that level) indicators such as the decline in sales by grocery stores and the decline in activity in the construction sector could serve as indicators of local activity loss.

### ***Enhancing Program Effectiveness***

For a program to serve not only as an ex-post risk-coping instrument, but also as an instrument to reduce costly ex-ante risk-management, the program's rules of incorporation must be well known to all vulnerable households (well before shocks occur), credible, and anchored on a commitment device, and the program should have no rationing for those who satisfy the conditions for incorporation. Quick response must be guaranteed, with a timing announced before shocks occur. In order to avoid decapitalization in the event of a shock, most particularly taking a child out of school with the state dependence effects that it implies, the program needs to act fast in terms of certification, verification of shocks, and disbursement of benefits.

*Widespread Publicity and Clarity of Program Rules and Rights.* Widespread knowledge of the program and its rules among vulnerable households is important to allow them to seek what is expectedly more productive as opposed to what is less risky. Different mechanisms can be used for this. The Thailand Low Income Card Scheme uses village leaders to announce the program one month prior to the registration deadline and then conducts house visits to ask people to submit their applications. Similarly, officials from the BASIX weather insurance program in India discuss with local leaders and farmers the insurance products they offer using household and village level visits. Involving local leaders and community-based organizations is important to make program information available and understood.

*Quick Verification of Eligibility and Guaranteed Incorporation.* Rapid incorporation is particularly important when a risk-management program is demand based. If eligibility is determined ex-ante, then all that is needed is verification of the shock. For example, weather insurance schemes in India and Malawi can do just-in-time verification of the extent of weather shocks at various stages of the harvest cycle which trigger immediately whether households are eligible for a payment to be made within a month.

If eligibility is determined ex-post, then the procedure may be longer and as such, having a system in place to guarantee a speedy verification and incorporation process is important. For example, the Health Fee Waiver Programs in Kenya and Chile determine ex-post eligibility on the spot. In Kenya, hospital staff determine eligibility and the waivers are granted the same day. Furthermore, emergency assistance can be given temporarily until the verification process is complete. The South Africa Social Relief Distress Award provides applicants with the first month's payment even if verification has not been completed. Payment is discontinued if the

applicant does not present the necessary documents to verify eligibility by the second month. Finally, the San Francisco County Adult Assistance Program grants an initial one-week period of Presumptive Eligibility in the form of in-kind vouchers for food, housing, and transportation. Normal cash transfers begin when determination of eligibility is made.

In addition, the program must credibly guarantee incorporation upon demand for eligible individuals. For example, in the India National Rural Employment Guarantee Scheme each potential worker submits an application for employment to the Gram Panchayat committee. The committee must then offer employment in one of its projects within 15 days. If no employment is available, employment under another implementing agency is offered. If still no employment is available, an unemployment allowance is paid to the applicant.

*Timely Disbursement of Benefits.* The disbursement of benefits needs to be quick once verification of shocks and incorporation have taken place. In the case of the Self Employed Women's Association Micro-insurance scheme in India (SEWA), the old disbursement policy consisted of patients paying the hospital upfront and submitting receipts and doctors' certificates to the insurance company for reimbursement. In many cases, this induced asset decapitalization to meet the short run costs. As a response, SEWA developed a different mechanism to ensure that members receive services without the need to pay themselves. An insurance agent visits the patient in the hospital, verifies the expected costs with the doctors, and makes part of the payment (80 percent) on the spot. The rest of the charges are paid at the time of discharge and submission of the relevant documents (Chatterjee, 2005). A similar payment scheme is implemented for the GRET Microinsurance scheme in Cambodia.

Another interesting example is the Mongolia Livestock Insurance program where payments are based on the losses in the first six months of the year. Nearly 90 percent of losses occur during this period. As such, if annual losses were used instead, payments would be made almost a year after the shock. The shorter six month cycle for payment ensures on time disbursement of the insurance.

*Accountability and Conflict Resolution Mechanisms.* The majority of programs reviewed have internal mechanisms to resolve conflicts and complaints. For example, in the India National Rural Employment Guarantee Scheme, various levels of monitoring and complaint processes have been introduced, ranging from the village council that provides a forum for public hearings, the program officer who handles general complaints at the block level, the state level where a state ombudsman and help line may be installed, as well as a citizens' charter that outlines all program entitlements and responsibilities. Similarly, the Urban Food for Work program in Ethiopia uses a committee to act as a liaison between the workers and the local authorities. Finally, in various South African cash transfer programs (Foster Care Grants, Social Relief of Distress Award, and Disability Grants Program), applicants who were denied a grant receive a letter outlining why the application has been refused and how the applicant can appeal. Existence of such mechanisms is important in enhancing the ex-ante credibility of a program, and hence its risk-management value.

### ***Incentives, Avoiding Moral Hazard, and Encouraging Graduation***

The structure of benefits needs to be designed in such a way as to ensure the program's financial sustainability. For this, the program should include safeguards to prevent moral hazards

and program abuse via exploring appropriate levels and length of benefits. Similarly, the program needs to provide incentives for program graduation to prevent dependency by integrating benefits that strengthen the risk management capacity of beneficiaries as well as by introducing clear rules for decertification and graduation.

*Preventing Moral Hazard Behavior.* In providing insurance, controlling moral hazard is crucial. Verification of shocks must be accurate, monitoring and enforcement mechanisms must be in place to prevent abuse, and program rules must encourage self-restraint to prevent excessive risk-taking and abuse. A number of useful insights can be taken from weather insurance programs in India and Malawi: (i) the payouts are conditional on rainfall indicators, which are exogenously collected and monitored separately, making verification of shocks easier; and (ii) since the level of the payouts is based on rainfall intensity, the schemes discourage risk-taking behavior by farmers. Similarly, for the Livestock Insurance Program in Mongolia, the insurance is activated whenever the livestock mortality rate in the region exceeds a trigger level and, as such, does not depend on the individual herder's livestock losses.

Limitations on the level of benefits can also encourage self-restraint and limit program abuse. The Ontario Rent Bank Program offers emergency rent and energy bill payment to low income people with arrears that put them at risk of homelessness due to short-term shocks. The rule to qualify for emergency assistance consists in an offer to cover rent and utility services for two months in a two years period. This induces individuals to exercise restraint in order to maintain the option of calling for assistance in case of future larger shocks. Similarly, a beneficiary of the Korea Public Works Program cannot work in more than three consecutive projects, while the South Africa Social Relief of Distress Award is only available for three months and only under exceptional circumstances can an applicant receive another 3-month grant. Finally, in India's National Rural Employment Guarantee Scheme, the program only guarantees 100 days per household. While there is no upper limit to the number of days worked, there is no guarantee for more work beyond these 100 days.

Having a well functioning data management system can help minimize duplication of benefits, leakages, and exclusion errors but also enhance accountability mechanisms and avoid general corruption and abuse. In addition, since risk-defined eligibility will need to be renewed often, a well designed data management system can facilitate the process. One example is the Jefes de Hogar Program in Argentina which has an elaborate system of cross checks to verify eligibility. The data management system also verifies whether an applicant is in another program of the Ministry of Labor, receives unemployment insurance, has a formal sector job, or is receiving cash transfers from another program.

*Incentives for Program Graduation.* Providing skills and risk management instruments through the program design can be an effective way to strengthen the households' capacity to manage risk and thus also increase the probability of self-exiting the program. As an example, the Nicaragua Atención a Crisis CCT pilot incorporates activities to promote risk prevention (income diversification in non-agricultural activities). In this sense, the benefits are used to protect not only consumption but also to directly provide new income opportunities. Ravallion et al. (2001) find that a high proportion of participants in the Trabajar program in Argentina reported that the program improved their chances of getting a job and gave them a marketable skill. A quarter of the participants responded that the program had expanded their contacts, while half of those who graduated from the program found a job within 6 months.

## Conclusions

Despite advances in implementing policies and programs to reduce chronic poverty through asset creation, improved opportunities to use assets more productively, and more inclusive social protection programs targeted at the poor, exposure to uninsured risks remains an important impediment to sustainable upward mobility as well as a source of new poor. While greater understanding has been gained about the dynamic links between risk and poverty (Fafchamps, 2003; Dercon, 2006), little attention has been given to ways of protecting those who are exposed to uninsured risks from slipping into poverty. As a consequence of this, while many programs targeted at the chronic poor have been effective in lifting large numbers of people out of poverty, they have often not managed to reduce aggregate poverty since an equal number of people moved into poverty due to exposure to uninsured risks.

This paper explores the potential role of conditional cash transfer programs in serving as safety nets to protect child human capital from being used as a risk coping instrument when households are hit by a shock, thus contributing to future poverty. We start by observing that uninsured shocks have a double cost on household welfare: an ex-ante cost of risk avoidance, and an ex-post cost of asset decapitalization and irreversibilities. Both affect child human capital and are a source of future new poor. Risk-focused programs can be used to protect the assets of the poor from uninsured shocks. This is done directly by sheltering assets, or indirectly through transfers (income effects) or conditional cash transfers (price effects). Available evidence suggests that CCT are vastly more efficient than CTs in inducing investment in human capital by the chronic poor. In addition, CCT programs observed in Mexico, Nicaragua, and Honduras have been effective in protecting child human capital from shocks. There exists, however, a large number of vulnerable non-poor not covered by these programs who also take their children out of school when hit by an uninsured shock. As such, they are a potential source of new poor. CCT programs designed to act as safety nets for these households when hit by a shock could thus be a powerful component of poverty reduction strategies.

In order to explore this further, we discussed how the design of CCT programs can be modified in order to give these programs the flexibility of achieving this safety net function. We do this by reviewing the risk-related features of a variety of programs targeted at the poor in developing and developed country settings. A number of lessons related to household eligibility for risk coping instruments, program effectiveness for risk management, and incentives to reduce moral hazard and encourage graduation and self-restraint are derived. The key insight is the observation that there exists a diverse set of innovative program features that could be easily integrated into existing or new CCT programs to give them an extended insurance function.

Despite these insights, little is known in practice about how CCT programs can be used to address risk in a systematic way among vulnerable non-poor households who may be the source of new poor if they decapitalize excessively in coping with shocks. To develop this potential of a CCT approach, experimentation in pilot programs is needed. Putting into place these pilot programs should be a priority for international development agencies.

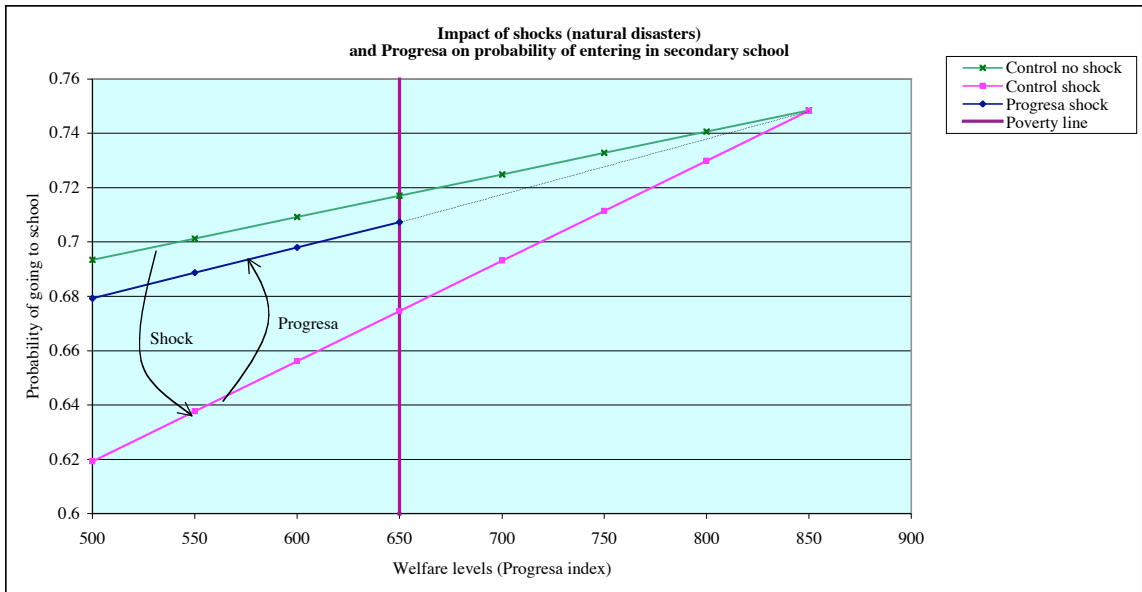
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**Figure 1. The Impact of Progresa Transfers as a Safety Net for the Poor and the Vulnerable**



<sup>1</sup> In this paper the word vulnerability and uninsured exposure to risk are used interchangeably. As such, vulnerability refers to vulnerability to uninsured risk and not to “vulnerable groups” like orphans, widows, or people with disabilities.

<sup>2</sup> Convexity means that the relation between assets and accumulation is very flat at low levels of asset ownership.

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