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**Research Report**

## The impact of cash transfers on local economies

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# Policy In Focus



*Empowered lives.  
Resilient nations.*

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## The Impact of Cash Transfers on Local Economies



The International Policy Centre for Inclusive Growth (IPC-IG) is a joint project between the United Nations and Brazil to promote South-South learning on social policies. It specialises in research-based policy recommendations on how to reduce poverty and inequality as well as boost inclusive development. The IPC-IG is linked to the UNDP Brazil Country Office, the Secretariat of Strategic Affairs (SAE) and the Institute for Applied Economic Research (IPEA) of the Government of Brazil.

**Director:** Jorge Chediek

**Senior Researcher:** Diana Oya Sawyer

## Policy in Focus

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**Editor-in-Chief:** Michael MacLennan,  
UNDP/International Policy Centre for Inclusive Growth

**Specialist Guest Editor:** Stephanie Levy, Department of International Development of the London School of Economics and Political Science (LSE)

**Copy Editor:** Jon Stacey, The Write Effect Ltd.

**Publications Manager:** Roberto Astorino

**Editorial Team:** Rosa Maria Banuth, Paula Simone and Manoel Salles

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Finally, we also would like to express our sincere appreciation to all of the authors for their generous and insightful contributions, without which this issue simply would not have been possible.

### Editorial Office

#### International Policy Centre for Inclusive Growth

United Nations Development Programme

SBS, Quadra 1, Bloco J, Ed. BNDES, 13<sup>o</sup> andar

70076-900 Brasilia, DF - Brazil

Telephone: +55 61 2105 5000

E-mail: [publications@ipc-undp.org](mailto:publications@ipc-undp.org) ■ URL: [www.ipc-undp.org](http://www.ipc-undp.org)

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In this special edition of *Policy in Focus*, leading authors and practitioners present their research on how cash transfers can impact the local economy when implemented in a developing country. The aim is to gather and review research results and evidence, obtained from various methodologies ranging from randomised control trials (RCTs) to village economy models and general equilibrium analysis, applied on small-scale programmes to larger-scale policies in Latin America, Africa and South-East Asia. The economic impact of social transfers is analysed here through their effects on investment, productivity, prices, employment and trade and through more general equilibrium effects of redistributive policies.

Over the past 10 years, many developing economies have implemented social protection policies targeting poor people. This has been widely seen as a great step forward in the fight against poverty and sets the foundation for a better future for the most vulnerable population in these countries. With the development of social transfer measures, the issue of their economic impact has become important.

Can social protection policies promote economic growth? How much of a trade-off is there between providing the most vulnerable with safety nets and stimulating the local economy, which could potentially sustainably improve their livelihood? How complementary are the two sets of policies, and how can we determine an optimal combination of productive investment and immediate poverty relief measures? What are the possible direct and indirect economic effects of social transfer programmes when scaled up and run over a long period of time?

Such questions often come up in the debate with policymakers, practitioners and donors. They are difficult to answer—not only because each country context is different, but because they require specific analytical tools. The causal link between these measures and what can be observed in the surrounding and wider economy is often difficult to establish. The economic impact of cash transfers can be challenging to trace and measure.

This publication offers a review of empirical methodologies and findings that can help economists and policymakers address these questions, in the hopes of stimulating a better-informed debate around the economic impact of social transfers, backed up by empirical, rigorous and sometimes contradictory evidence on market impacts.

Policymakers demand realistic and honest assessments about what social protection can achieve. More research is needed along these lines, if only to understand whether the results and policy recommendations presented here would hold in countries with different economic contexts, different levels of market integration in their rural economy and different forms of vulnerability affecting their population.

We hope you will enjoy reading this special issue.

# The Impact of Cash Transfers on Local Economies: A Foreword

by Martin Ravallion<sup>1</sup>

There are two themes to this special issue of Policy in Focus. One theme relates to the effects of targeted anti-poverty policies on market prices, while the other is about the productivity effects of such policies. Both are important but under-researched topics, making this special issue a welcome contribution, accessible to a wide audience.

Economics teaches us that there can be poverty and inequality in a static world with perfect markets. Endowments differ, yielding inequality after all trading is done, and some people might also end up with unacceptably low living standards. In such a world, public efforts will be called for to reduce inequality and poverty, with a potential cost to aggregate efficiency. As a society, we may be glad to cover that cost, given our desire for a more equitable distribution; however, a trade-off is to be expected.

Quite generally, we can also expect redistributive efforts in such a world to alter market prices, leading to 'second-round' implications for the welfare impacts of interventions. This is illustrated by the study for Cambodia by Stephanie Levy

and Sherman Robinson, summarised in this special issue of Policy in Focus. The authors find that the second-round effects attenuate the welfare impacts of transfers. They recommend combining transfers with efforts to enhance the productivity of poor farmers, especially in remote areas, poorly integrated with markets elsewhere.

We clearly don't live in a world of perfect markets, and the various ways in which markets underperform can generate positive productivity effects of anti-poverty programmes.

Credit market failure has long been identified as a reason why poverty persists. Poor people are often credit constrained but potentially productive when given access to the human and physical capital they need.

Targeted cash transfers—even when they are not combined with any direct effort to raise productivity—can then have aggregate productive effects by supporting investments by poor people, investments that would not otherwise be possible. There can be other sources of market failure, including in the

markets for land and labour and the absence of complete insurance markets, with similar implications.

Using transfers to compensate for these market failures can, therefore, be good for both equity and efficiency.

In general, in the world of imperfect markets, there will also be effects on market prices; these effects will now come alongside the pro-poor productivity effects, though they may well work in opposite directions, clouding inferences on overall welfare impacts.

While theoretical arguments can be readily made along these lines, we have had very little evidence.

This has changed with the knowledge generated by survey data in the hands of innovative researchers.

The studies to date span the entire world, from poor countries to rich ones. A good example in this issue is the study on Ethiopia by John Hoddinott and colleagues, which finds that safety net transfers were partly invested.

“

We clearly don't live in a world of perfect markets, and the various ways in which markets underperform can generate positive productivity effects of anti-poverty programmes.



Photo: Wong Chi Keung, 2009 IPC Photo Competition; Farmer carrying corn to local market. Hong Kong, China.



Photo: Achilli Family. Konso Market, Ethiopia, 2007. <<http://goo.gl/csQ5XH>> <<http://goo.gl/lclUqb>>.

“

Using transfers to compensate for [...] market failures can [...] be good for both equity and efficiency.

The themes of price and productivity effects of transfers have implications for the design of anti-poverty policies.

Not all studies have found evidence of such productivity effects of transfers, but a number of them have. There will undoubtedly be more research on this subject, and hopefully a better understanding of impact heterogeneity will emerge.

The themes of price and productivity effects of transfers have implications for the design of anti-poverty policies, and here new trade-offs emerge. I provide two examples. First, the nature and implications of the price effects of transfers depend on their mode of delivery.

Aid to poor people in the form of food (or another basic need) is likely to be more expensive than delivering as cash, although there can be compensating advantages for payments in kind, such as automatic indexation for inflation.

Things get more complex when we consider market responses; payments in cash to poor people tend to increase demand for food and, therefore, increase local prices of non-traded foods (with adverse effects for poor consumers), while payments in the form of food have the opposite effect (with adverse effects for poor producers).

The study by Jesse Cunha and colleagues in this special issue nicely illustrates these points. One should be wary of generalisations in favour of one mode of delivery over the other, as the balance of costs and benefits is likely to depend on

the setting, such as the degree of spatial integration of local markets.

The second example concerns the specification of the target group. When transfers are unproductive, the ethical case is strong for targeting the poorest.

However, when there are productivity effects, such as from the existence of credit market failures, the poorest are not necessarily the people with the highest economic returns from transfers.

As an illustration, the study by Alain de Janvry and Elisabeth Sadoulet presented in this special issue found that transfers to poor Mexican farmers increased their agricultural investments, with longer-term income gains.

However, they found that the gains were lower among those farmers with the smallest holdings, who are presumably the poorest. If the policy had focused solely on those farmers, it would have had less impact on poverty. Further research is needed on both the productivity effects of transfers and the implications of their targeting.

I have only cited a few examples here, but all the studies reported in this special issue address one or more of these themes. Each study has something important to say, adding up to a fine collection of articles on an important set of issues for anti-poverty policymaking. ■

1. *Georgetown University.*

# Cash Transfers with Income Multipliers: Making Social Assistance Good for Growth

by Alain de Janvry and Elisabeth Sadoulet<sup>1</sup>

Properly targeted transfer programmes can be expected to improve the well-being of recipients and reduce poverty. A lot of effort has consequently been made to improve the targeting of such programmes to exclude non-poor households and ensure the inclusion of poor households.

The advantage of transfer programmes is that they are relatively easy to implement. However, even with perfect targeting, each dollar of transfer only brings the beneficiaries one dollar closer to the poverty line. Furthermore, a transfer of this kind has to be repeated year after year if this poverty reduction effect is to be sustained. If bad habits develop, such as the emergence of a preference for leisure that would decrease autonomous income, the transfer would need to be increased for the recipient not to fall below the poverty line again.

Governments and donors have been reticent to sustain transfer programmes over extended periods of time, either because of the high and potentially rising fiscal costs they imply—particularly if a large share of the population is poor—or because they prefer to rely on aggregate

growth, counting on trickle-down effects for poverty reduction.

For this reason, a preferred approach is to generate income opportunities for poor people, helping them generate autonomous income that will take them above the poverty line. If the source of income is sustainable, the intervention can be of a one-time nature, leading to self-sustained income growth. However, the problem with this approach is that it is much more difficult to implement than transfer programmes. If it is to happen via wage incomes, human capital skills have to be developed and rewarding jobs created. If it is to happen via profits, entrepreneurial skills have to be developed, productive assets made accessible, a favourable investment climate created, and competitiveness of these enterprise start-ups secured.

The result has been a classical Scylla and Charybdis quandary for social assistance programmes: a choice between relatively easy-to-manage but expensive transfers, and potentially effective but difficult-to-implement income generation opportunities.

This neglects an important phenomenon that has not gone unnoticed by poverty observers: poor people are frequently already endowed with productive assets that are underused under current conditions due to extensive market failures, often idiosyncratic to the poor, in the capital and insurance markets. Removing the constraints imposed by these market failures through easy-to-implement transfer programmes may be a way of mobilising the productive potential of current asset endowments, creating income opportunities that will take beneficiaries above the poverty line (Ravallion, 2003).

We analysed the income multipliers created by *Procampo*, a cash transfer programme introduced by the Mexican government in 1994 to compensate farmers for the anticipated negative effects of the North American Free Trade Agreement (NAFTA) on the prices of basic crops (de Janvry, Sadoulet and Davis, 2001). Coverage was universal, and the basis for transfers was the 1993 cultivated area of these crops.

We analysed the impact of the transfers on the *ejido* sector, a group of some 2.5 million mainly impoverished smallholder farmers who had received access to half of the Mexican territory through the land reform programme that followed the 1910–1916 Mexican Revolution. We conducted national panel surveys in 1994 prior to initiation of the transfers and in 1997 after the programme had been well established. We used household fixed effects and exogenous transfers with variable amounts proportional to the 1993 land allocations to measure the marginal income effects of a unit of transfer.

The *ejido* sector has the peculiarity of combining poverty with asset endowments that were badly underused due to extensive market failures. Incomplete property rights prevented



Photo: Eduardo Robles Pacheco, *En el ejido Cuauhtémoc* (36), 2013, Mexico <<http://goo.gl/tVPP3B>> <<http://goo.gl/rek3eJ>>.

these farmers from using the land as collateral with commercial banks. Following structural adjustment in the wake of the debt crisis, the parastatal agricultural development bank dedicated to the *ejido* sector had been shut down. Only 18 per cent of *ejidatarios* had access to formal credit by 1994. A welfare-motivated cash transfer reaching a productive sector with severe liquidity constraints could thus have a large effect on the productivity of resource use.

We found that recipients were able to put to work at least some of the cash transferred to them, multiplying transfers into larger income effects. On average across recipients, a USD1 transfer resulted in USD2 of additional income, one directly and one indirectly. Heterogeneity of impact varied in relation to land endowments. For the smallest farmers, a USD1 transfer only generated a USD1 income effect.

These farmers needed to consume the transfer immediately and did not have enough assets and possibly other constraints to multiply transfers. Small farmers had the largest income multipliers, gaining USD3 for every USD1 received. Medium farmers were less credit-constrained, gaining USD2 for every USD1.

Multipliers also varied with other asset endowments. Households with a smaller number of adults (and hence less off-farm income to help them generate liquidity for their farm operations) had a multiplier of three. Those with more education, non-indigenous backgrounds, more access to technical assistance, and those located in regions with greater access to market had larger multipliers. Overall, multipliers were larger for those with both greater productive opportunities and more underused assets due to stronger liquidity constraints.

When asked what they did with the transfers, farmers responded that they mainly purchased more inputs, especially agro-chemicals. They also reduced labour market participation to spend more time cultivating their land, suggesting that engaging in off-farm wage labour was in part motivated by the quest for liquidity for their farming operations.

The security of *Procampo* entitlements also helped reduce risk in agriculture, in particular as they could be used as collateral for access to credit. Simulations show that NAFTA without *Procampo* would have led to an average loss in household income of 4 per cent. With *Procampo*, incomes rose by 18 per cent. On average, half of the 22 per cent income effect was due to direct transfers, and half to indirect income generation with the existing assets.

Others have analysed public transfer programmes from the angle of income multipliers. Gertler et al. (2012) found that, in the Mexican conditional cash transfer programme *Oportunidades*, 26 per cent of transfers received were invested, generating a small two-cent increase in long-term consumption for every one peso received. A lot of attention is currently given to the benefits of cash transfers to poor households. Results suggest that they work surprisingly well to reduce poverty: poor people are wise in spending the money they receive in improving household welfare (Haushofer and Shapiro, 2013). Conditional cash transfers work even better in dealing with the root causes of poverty such as education and health (Baird et al., 2013). Yet insufficient attention has been paid to the potential multiplier effects achieved with these transfers.

A lesson here is that cash transfers can be managed not only for accurate targeting but also to help recipients maximise multiplier effects. Results from the *Procampo* experience suggest that two issues deserve additional attention: first, cash transfers in isolated markets tend to induce a rise in the price of the less tradable consumer goods such as meat (Alix-Garcia et al., 2013), which can reduce the real income gains from multipliers for consumers of these products. This stresses the importance of well-functioning markets to stabilise local prices. Second, greater attention should be given to creating investment opportunities for recipients in high-value crops—in this case, commodities with comparative advantage in the post-NAFTA environment such as vegetables, fruits and animal products.

This typically requires improved infrastructure, the development of high-value chains, and training in the production

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The result has been a classical Scylla and Charybdis quandary for social assistance programmes: a choice between relatively easy-to-manage but expensive transfers, and potentially effective but difficult-to-implement income generation opportunities.

Cash transfers can be managed not only for accurate targeting but also to help recipients maximise multiplier effects.

of these more demanding commodities. By facilitating investment and enhancing returns, transfers can help increase autonomous incomes and subsequently be reduced without compromising sustainable poverty reduction. ■

Alix-Garcia, J., C. McIntosh, K. Sims and J. Welch (2013). 'The Ecological Footprint of Poverty Alleviation: Evidence from Mexico's *Oportunidades* Program', *Review of Economics and Statistics*, 95(2): 417–435.

Baird, S., F. Ferreira, B. Özler and M. Woolcock (2012). *Relative effectiveness and cost-effectiveness of conditional and unconditional cash transfers for schooling outcomes in developing countries: a systematic review*. Oxford, The Campbell Collaboration.

de Janvry, A., E. Sadoulet and B. Davis (2001). 'Cash Transfer Programs with Income Multipliers: *Procampo* in Mexico', *World Development*, 29(6): 1043–56.

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1. University of California at Berkeley.



# Insurance, Investment and Consumption: The Role of the Extended Family in the Use of Cash Transfers

by Manuela Angelucci<sup>1</sup>

Conditional cash transfer programmes have been shown to improve the well-being of their recipients by increasing their human capital and improving the quantity and quality of their consumption.

Our research<sup>2</sup> shows that their benefits may extend beyond the recipients. Using data for the evaluation of *Oportunidades*, Mexico's conditional cash transfer programme, Angelucci and De Giorgi (2009) show that, in villages reached by the programme, food consumption increases for both eligible households—the intended programme recipients—and ineligible households, slightly less poor and, therefore, deemed ineligible for the cash transfers.

Food consumption increases by about 10 per cent per month per adult equivalent for the ineligible households in treated villages, which is about half as much as the average increase in food consumption for eligible adults. Failure to consider this indirect effect results in a 12 per cent underestimate of the treatment impact on food consumption.

To evaluate the effectiveness of *Oportunidades*, in 1998 the programme was randomly implemented in 320 villages and withheld until 2000 in 186 villages. In each village, all households were classified as eligible or ineligible for the programme and then surveyed every six months, starting with a baseline collected in 1997. This way, we have panel data on a census of 506 villages, providing information about four groups: eligible and ineligible households living in treatment and control villages.

Because of this experimental design, we can identify the effect of the treatment on ineligible households under weak identification assumptions—namely, that the randomisation was effective and that there are no spillover effects in control villages (unconfoundedness). Under these assumptions, the difference between the consumption of ineligible households in treatment and control villages measures the effect of the programme on the ineligibles.

This increase in consumption for ineligible households may have been caused by general equilibrium effects or by sharing the

transfer within the village. However, we find no effect on wages, prices or labour supply, while we do find effects on insurance and credit markets: ineligible households in treatment villages borrow more money (mainly from family and friends), receive more transfers and, to a small extent, reduce their precautionary savings.

These findings suggest that these indirect effects on consumption operate through informal sharing within one's social network.

In Angelucci, De Giorgi and Rasul (2014), we study whether the extended family is part of such a network in the surveyed villages. Having obtained the last names of all household heads and their spouses, we can identify the first-degree relatives (parent, offspring, sibling) of each household head and spouse, exploiting the fact that each person has two surnames (one inherited from the father and one from the mother) and the patrilineal surname transmission (by which the paternal surnames are passed on to the next generation).

After doing so, we proceed to show that the indirect effect of the conditional cash transfer on consumption operates through the extended family. As before, the experimental design ensures that these effects are identified under random assignment and unconfoundedness.

Under these assumptions, we find that consumption increases only for ineligible households with relatives eligible for the programme, and not for ineligible households without eligible relatives. Moreover, we find that the extended family network—the network of first-degree relatives—achieves full insurance. In sum, the entire family network benefits from the conditional cash transfers.

If related households share the conditional cash transfer among each other, then this



Photo: Cimmyt. Family selling maize snacks at roadside stall, 2006, Mexico <<http://goo.gl/zHSdeh>> <<http://goo.gl/rek3eJ>>.



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The entire family network benefits from the conditional cash transfers.

Photo: Hendrik Terbeck, *Small Child in San Cristobal de Las Casas, 2013, Mexico* <<http://goo.gl/ITpHp2>> <<http://goo.gl/rek3eJ>>.

transfer may be used both for insurance and investment purposes.

Specifically, the network members may pool resources to undertake an investment that each individual household could not undertake on its own. To test this hypothesis, we consider the investment in secondary education.

Unlike primary school enrolment, which is almost 100 per cent also in the absence of the cash transfers, secondary school enrolment is only about 65 per cent, partly because of poverty and the need for child labour. While the cash transfer provides a subsidy to education, it covers only about two thirds of the full cost of secondary education, including forgone wages (Schultz, 2004).

Therefore, some households without sufficient resources may not be able to increase their children's secondary school enrolment despite the cash transfer's partial subsidy.

However, if these households can pool resources within their extended family network, they may be able to increase their children's schooling even in the absence of a full subsidy.

Consistent with this conjecture, we find that the effect of the cash transfer on eligible households—the direct transfer recipients—differs depending on whether they have first-degree relatives in the village or not. While secondary school enrolment increases by 8 percentage points (roughly

12 per cent) for eligible households with first-degree relatives, enrolment does not increase at all for households without first-degree relatives, who, instead, invest in livestock, an asset likely to yield lower returns than human capital.

To conclude, our findings have several implications. First, to assess the effectiveness of conditional cash transfer programmes, we should consider their impact on both eligible and ineligible households. Considering the effect only on eligible households may result in underestimates of the full programme impact. Second, to measure such effects, it is important to design experiments that let the researcher identify and measure the spillover effects of a programme, besides its effects on the programme recipients. Third, the programme impacts may vary depending on the local institutions (such as the presence and extent of informal resource-sharing networks), and different types of households may, therefore, benefit to different extents from the same cash transfer, depending on whether they belong to informal resource-sharing networks or not. ■

Angelucci, M. and G. De Giorgi, (2009). 'Indirect effects of an aid program: how do cash injections affect ineligibles' consumption', *American Economic Review*, 99(1).

Angelucci, M., G. De Giorgi and I. Rasul (2014). 'Resource pooling within family networks: insurance and investment', unpublished manuscript. Ann Arbor, University of Michigan.

Schultz, P. (2004). 'School Subsidies for the Poor: Evaluating the Mexican PROGRESA Poverty Program', *Journal of Development Economics*, 74(1): 199–250.

1. University of Michigan.
2. This article is based on Angelucci and De Giorgi (2009).

# Linking Social Protection to Agriculture: Evidence from Ethiopia

by John Hoddinott, Guush Berhane, Daniel O. Gilligan, Neha Kumar and Alemayehu Seyoum Taffesse<sup>1</sup>

The primary objective of most social protection programmes is to transfer income to poor households. These transfers are motivated by a commitment to maintaining a minimum standard of living, overcoming severe temporary negative shocks to income, and avoiding the formation of longer-term poverty traps.

However, there is considerable interest in assessing whether social protection can go beyond this to play a promotive role, addressing the root causes of poverty. An important question for policymakers is, given such an objective, whether social protection interventions are sufficient for such transformations or whether they need to be complemented by interventions aimed at improving livelihoods.

This article summarises our work (Hoddinott et al., 2012) examining this issue in the context of Ethiopia’s Food Security Programme (FSP). The FSP is a unique example of such a programme; its cornerstone is the Productive Safety Net Programme (PSNP). Started in 2005, the PSNP provides direct income support to more than 7 million poor people primarily through participation in large-scale public works (PW), as well as through unconditioned direct support to poor households with limited labour capacity.

Two additional programmes under the FSP have complemented the PSNP

by providing additional products or services designed to improve agricultural productivity or support microenterprise development. These productivity-enhancing investments were made under the smaller Other Food Security Programme (OFSP), which was revamped in 2009 and renamed the Household Asset Building Programme (HABP).

The OFSP and HABP provided assistance and training to provide access to improved seeds, conduct soil and water conservation, improve irrigation or undertake beekeeping activities.<sup>2</sup> In this article, we examine the joint role of the PSNP and OFSP/HABP transfers in supporting investments that improve agricultural productivity. Our data are drawn from a longitudinal survey of PSNP participants and non-participants in chronically food-insecure *woredas*<sup>3</sup> across the four major regions of Ethiopia: Tigray, Amhara, Oromia and the Southern Nations, Nationalities and People’s Region (SNNPR). Data were collected in 2006, 2008 and 2010 at the same time of year (June to early August), to minimise the effect of seasonality on the impact estimates.

There were 3366 households interviewed, which form the 2006-2008-2010 panel. Discussions of sampling and attrition are found in Hoddinott et al. (2012). Data were collected on participation in the PSNP, OFSP/HABP, correlates of participation,

agricultural production and investments in agriculture. We identify treatment effects through estimation of the dose-response models of Hirano and Imbens.

This approach extends propensity score matching methods for binary treatments to cases where treatment is continuous. We apply their approach to the determination of the average dose-response of the outcome at each level of participation, measured as years of participation in the PSNP. In our data, households with only one year of participation in the PSNP had a low level of transfers on average, whereas those with five years of participation—the maximum over this period—had high average values of transfers received.

Comparing the dose-response between the highest and lowest years of participation allows us to measure the impact of active participation in the PSNP within a group of PSNP-eligible households. To measure the impact of the PSNP alone, as well as the impact of the PSNP and OFSP/HABP combined, we estimate the PSNP dose-response model separately for the sample that did not participate in the OFSP/HABP and for the sample that did receive the OFSP/HABP.

Under certain identifying assumptions, this provides a rich set of comparisons of outcomes between levels of years of



There is considerable interest in assessing whether social protection can play a promotive role, addressing the root causes of poverty.

**TABLE 1**

Comparisons of Treatment Effects for PSNP Dose-response Models and Participation in the OFSP/HABP

Level of PSNP Participation	OFSP/HABP Participation	
	OFSP/HABP non-beneficiaries	OFSP/HABP beneficiaries
<b>Low:</b> one year of PSNP participation	A	C
<b>High:</b> five years of PSNP participation	B	D

Source: Authors’ elaboration.

**TABLE 2**

**Impact of PW Payments and Participation in OFSP/HABP on Fertiliser Use and Agricultural Investment**



Combining social protection and agricultural interventions can lead to investments by beneficiaries with potential long-term benefits.

Impact of PSNP and OFSP/HABP programme components	Probability of using fertiliser, 2010	Probability of investing in stone terracing, 2008–2010	Probability of investing in fencing, 2008–2010	Probability of investing in water harvesting, 2008–2010
PW alone (B-A)	-0.023 (0.071)	-0.126 (0.089)	0.166** (0.078)	0.019 (0.014)
Both PW and OFSP/HABP (D-A)	0.211*** (0.056)	0.043 (0.070)	0.292*** (0.064)	0.012 (0.012)
High PW payments plus OFSP/HABP (D-B)	0.234*** (0.052)	0.169*** (0.055)	0.126** (0.057)	-0.007 (0.016)
OFSP/HABP, add PW (D-C)	0.128*** (0.044)	0.099** (0.046)	0.223*** (0.049)	0.003 (0.012)

Notes: \* significant at the 10% level; \*\* significant at the 5% level; \*\*\* significant at the 1% level.

participation in the PSNP with and without access to the OFSP/HABP, as shown in Table 1.

The columns in Table 2 represent the two PSNP dose-response models estimated on the OFSP/HABP non-beneficiary sample and OFSP/HABP beneficiary sample, respectively. Within either sample, differences in impacts between levels of PSNP participation are estimated by comparing B to A or comparing D to C. Alternatively, we can assess the synergistic effects of the PSNP and the OFSP/HABP by comparing D to B.

Table 2 shows the impacts of the PW and OFSP/HABP programmes on fertiliser use in 2010 and on agricultural investments in stone terracing, fencing or water harvesting from 2006 to 2010.

For households not participating in OFSP/HABP (the first row in Table 2), increasing the level of PW participation from one to five years has no impact on fertiliser use or on investments in stone terracing or water harvesting but increases the probability of investing in fencing by 16 percentage points.

Results in Table 2 show much broader and larger impacts of combining receipt of high levels of PW payments with OFSP/HABP transfers on fertiliser use and agricultural investment. Receiving high levels of PW payments and OFSP/HABP

transfers increases the probability of using fertiliser and investments in fencing by 21 percentage points and 29 percentage points, respectively, relative to low participation in PW and no OFSP/HABP transfers (comparison D-A).

Adding OFSP/HABP transfers for households receiving high levels of PW payments (comparison D-B) and increasing PW payments from one to five years for OFSP/HABP beneficiaries (comparison D-C) increase the probability of both using fertiliser and investing in stone terracing and fencing.

The pattern of impacts in Table 2 does not give a clear indication of which combination of PSNP and OFSP/HABP participation is most effective, but there is strong evidence overall that providing PW transfers in addition to OFSP/HABP transfers led to increased fertiliser use and substantial investment in agriculture during this period.

As such, they provide ‘proof of concept’ evidence that combining social protection and agricultural interventions can lead to investments by beneficiaries with potential long-term benefits. ■

Hoddinott, J., G. Berhane, D. Gilligan, N. Kumar and A. Seyoum Taffesse (2012). ‘The Impact of Ethiopia’s Productive Safety Net Programme and related transfers on agricultural productivity’, *Journal of African Economies*, 21(5): 761–786.

1. Hoddinott, Cornell University and International Food Policy Research Institute; Berhane, Gilligan, Kumar and Seyoum Taffesse, International Food Policy Research Institute. This work has been funded under World Bank Award 100025484/2010, with additional funding from the Department for International Development (DfID) and the US Agency for International Development (USAID) as well as funding provided by the CGIAR’s Policy, Institutions and Markets research program to IFPRI.

2. Because the HABP is the later incarnation of the OFSP during our study period and shares its main goal (providing assets and training to boost agricultural productivity) and modality (operating through extension services), we refer to the two programmes as OFSP/HABP. Both the PSNP and HABP continue to operate in Ethiopia.

3. *Woredas* are administrative divisions in Ethiopia, managed by a local government, equivalent to a district. Typically, they have populations of around 100,000 people, though some are larger, and others smaller.

# The Impact of In-kind and Cash Transfers on Local Prices

by Jesse M. Cunha,<sup>1</sup> Giacomo De Giorgi<sup>2</sup> and Seema Jayachandran<sup>3</sup>

Governments are often reluctant to make welfare payments to poor households in the form of unrestricted cash transfers, favouring instead in-kind transfers of goods or services, such as food aid or public housing. One rationale for making in-kind transfers is that they encourage consumption of the 'right' things, such as healthy food. On the flipside, cash transfers are typically less expensive to administer, and cash can provide recipients with greater freedom over purchasing choices. Another important but often overlooked aspect of this policy trade-off is that transfer programmes can affect local prices. Both cash and in-kind transfers make recipients better off, which can increase their demand for goods and, in turn, has an effect on prices. However, in-kind transfers also increase the local supply of goods, which can drive prices down. We have recently empirically measured the differential price effects of cash and in-kind transfers, and have demonstrated how they affect the recipient communities (Cunha, De Giorgi and Jayachandran, 2012).

Theoretically, several aspects of the local economy will influence the price effects of cash and in-kind transfer programmes;

first, price effects will be larger when the local economy is isolated from the larger economy, implying that prices are set by local—rather than regional or national—supply and demand; second, the price effects will increase with the increasing size of the transfer; and third, the price effects will be larger, the higher number of transfer recipients in a locality.

More specifically, we studied Mexico's food aid programme, *Programa de Apoyo Alimentario* (PAL), which satisfied all three of the aforementioned criteria. PAL targeted poor, rural and geographically isolated villages. In these villages, over 90 per cent of households were eligible for the transfers of either food or cash which were equivalent to about 10 per cent of household income. We used data from a two-year experiment run by the Mexican government designed to compare different policy options. Villages were randomly assigned to one of three groups: families that received a monthly transfer of beans, powdered milk, canned fish, and other foods; families that received the equivalent amount as a cash transfer; and as a comparison group, families that did not receive any transfers.<sup>4</sup>

Our main finding is that cash transfers did not affect prices, while in-kind transfers caused price deflation. This is not particularly surprising: cash can be spent on any goods, whereas the price effects of in-kind transfers are concentrated on the particular goods transferred. Overall, these price changes had only a minimal impact on households' welfare.

However, the story is different when we look at the most isolated villages, those with limited access to outside markets. In these remote villages, we find mild price increases under cash transfers and very large price decreases under in-kind transfers relative to cash transfers.<sup>5</sup> One reason for these larger effects appears to be that the PAL transfers are a larger percentage of supply in these less-integrated markets. We also find some evidence suggesting that the large price effects in remote villages occur because there are fewer stores in these areas, and thus less competition. In remote areas, the price changes created an indirect benefit (or cost) to households which was comparable in size to the direct benefit of receiving the food or cash. Since most poor people live in more isolated areas,

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Transfer programmes can affect local prices.

Changes in local prices are neither universally good nor bad for households, because poor people in developing countries are often involved in the production as well as the consumption of food.



Photo: Maria Luiz Aquilante, 2009 IPC Photo Competition. Market in Tlacolula, Mexico.

these findings highlight the need to understand the potential price effects of redistributive welfare programmes targeting poor households.

Importantly, changes in local prices are neither universally good nor bad for households, because poor people in developing countries are often involved in the production as well as the consumption of food. While lower prices increase the purchasing power of net consumers of food, they also reduce the income of food-producing households. Indeed, programme administrators can use the pecuniary externalities of transfer programmes to target either net producers or net consumers of food. In the PAL experiment, we find that

food-producing households are better off under cash transfers (they sell their crops at higher prices) and worse off under in-kind transfers (they sell their crops at lower prices).

The main lessons from our work are that the format of government transfers can have important implications for local prices, particularly in geographically isolated areas, where many of the world's poorest people live. Furthermore, these lessons are just as relevant for in-kind food transfers as for any other type of in-kind transfer that can affect local supply and demand, such as fuel, education services or housing. ■

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Cunha, J.M., G. De Giorgi and S. Jayachandran (2011). 'The Price Effects of Cash Versus In-kind Transfers', *NBER Working Paper*, No. 17456. Cambridge, MA, National Bureau of Economic Research.

1. Cunha: Naval Postgraduate School, Graduate School of Business and Public Policy.
2. De Giorgi: Federal Reserve Bank of New York
3. Jayachandran: Northwestern University, Department of Economics.
4. Cunha (2014) shows that both in-kind and cash PAL transfers led to similar increases in overall food consumption, but that in-kind transfers of some items were extra-marginal and led households to consume more of the transferred goods than they would have under a cash transfer of equal value.
5. Remote villages in our setting are more than a 30-minute drive to the nearest market.

# The Impact of Short-term Cash Transfers on Unstructured Markets: A Case Study in Northern Uganda

by Pantaleo Creti<sup>1</sup>

This article explores the effects of short-term cash transfers on unstructured markets. It is based on a case study (Creti, 2010) commissioned by the Cash Learning Partnership (CaLP) of a short-term cash transfer project conducted by Action against Hunger (AAH) in northern Uganda in 2009. The project's objective was to ensure food security and support livelihood rehabilitation of returnee populations. Cash was transferred to 1500 vulnerable households in two instalments, each equivalent to USD150. The project was conducted in a rural and remote area, where livelihoods had been strained by years of raids and civil war, which caused large displacements of people into camps. At the time of the project implementation, people had returned to their villages, but livelihood activities and local market dynamics were still very weak.

This article explores some of the factors that can help predict whether and how short-term cash injections can affect unstructured markets, with a focus on

the potential effects of inelastic supply and demand on prices, and the multiplier effects on the local economy.

## Methodology

The case study was built mainly on qualitative data, gathered through semi-structured interviews and focus group discussions with key informants. The mapping of relevant market systems allowed for the identification of key market actors and access to infrastructure, services and other external factors influencing the market systems. Descriptive analysis was validated and reinforced by quantitative information. Data available from baseline surveys and post-distribution monitoring provided useful insights on initial asset ownership, income of the target population, beneficiary preferences and the use of cash.

## Potential impact of cash transfers

To predict the impact of the cash transfers on the local economy (Ellis et al., 2009), factors such as the scale of the transfers, local market structure, level of market

integration, and local availability of goods were assessed.

**Scale:** Transfers represented between 25 and 40 per cent of the annual income of local smallholder farmers, and up to 87 per cent for landless households, the poorest livelihood group. The project reached, on average, 15 per cent of the population at county level, and up to 50 per cent in the targeted villages. The high value of the transfers compared to households' income and its high coverage at village level signalled potential market crowding effects. However, the lack of official statistics and the informal nature of the local economy made it difficult to measure the amount of cash injected by the project against the local cash flow at normal times.

**Market:** The main effects of the cash transfers were found in the livestock market system, which became the focus of the case study. The amount beneficiaries spent on livestock represented 69 per cent of the total transfer and was significantly

higher than the amount they invested in agriculture (11.8 per cent) and spent on food (8.2 per cent). Livestock markets were relatively competitive at regional and district levels, but weakly integrated at the local level, where the number of suppliers was limited and transactions were mostly informal. The weak market integration was attributable to incomplete information and high transaction costs associated with movement restrictions, high taxation and poor infrastructure.

**Availability:** The baseline survey showed that, due to the large displacement and insecurity, only 35 per cent of the targeted population owned any livestock. Before the project started, there was an average of 75 heads<sup>2</sup> per 1000 households. The first cash instalment generated a demand for 2734 heads, which represented a thirteen-fold increase compared to the initial stock among the target population. This demand could not be entirely satisfied by local producers—mostly medium-scale farmers.

#### **Impact on market prices**

The short-term cash transfers produced a temporary inflation of livestock prices at the local level. Prices in local markets and informal transactions became 10 to 30 per cent higher than expected for the season. This was mainly attributed to an inelastic supply caused by high transaction costs and incomplete information. Inflation was also the result of an inelastic demand, as beneficiary preferences were directed towards a few local products.

**Inelastic supply:** Local livestock markets were not well integrated with markets further afield, and suppliers were not able to promptly respond to the increased demand. The remoteness of the project area, its poor infrastructure and strict movement regulations within and between districts increased the costs of moving livestock from distant markets. These structural problems were compounded by the exponential increase in the demand as compared with volumes normally traded in local markets. The demand rose to 13 times that of the initial livestock population among the target group. These 'crowding' effects were even more significant because the purchase was concentrated in a short period of two to three weeks. Traders were not able to increase their supplies due to the short time-frame, limited logistic capacities, and incomplete information on the project and consumers' preferences.

**Inelastic demand:** Although beneficiaries eventually became aware of price differentials between markets, they still preferred to purchase locally. Their decision is attributable to high transaction costs as well as to a greater trust in local farmers and the importance given to knowing the origin of the livestock. Beneficiaries considered local animals healthier and of better quality, and thought it riskier to purchase from other markets. Inelastic demand was also the result of incomplete market information. At the beginning, participants were not aware of prices in other markets and were

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The analysis of multiplier effects showed that cash transfers had a positive impact on different market actors, promoting not only redistribution but also investment and production.



Photo: Azra Nurkic, 2009 IPC Photo Competition; Uganda.



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Short-term cash injections can cause temporary inflation in unstructured markets.

Photo: Rolando Villanueva, 2009 IPC Photo Competition. Nakasero Farmers Market, Uganda.

confused about the movement restrictions. It is also likely that some degree of trauma, as a result of the past conflict, contributed towards discouraging participants from travelling long distances.

#### Multiplier effects on the local economy

A qualitative approach was used to analyse the multiplier effects of the cash injection. The analysis sought to understand whether cash remained in the local economy, and whether additional goods and services were created to meet the additional demand.

The first step of the analysis consisted in identifying and mapping the key market systems —i.e. those beneficiaries had spent most of the money on. As mentioned before, the livestock market system concentrated 69 per cent of beneficiary expenditures and, therefore, became the focus of the case study.

The second step consisted in identifying how beneficiaries had been directly and indirectly impacted by the cash injection and what further changes could be expected in the near future. Project beneficiaries used the transfer to accelerate their livestock restocking strategy. More than 60 per cent of them purchased an average of three goats. The livestock capitalisation process did not immediately and tangibly increase households' income, since goats' milk was not used for food purposes and goats were seldom sold for income. Livestock, however, represented important savings for further capitalisation as well as for dealing with unexpected and urgent needs.

Finally, the analysis tried to understand how the cash injection had affected local market actors, either positively or negatively. Medium-scale farmers<sup>3</sup> were the group that most benefited from the initial spending by beneficiaries. They gained extra income through increasing livestock sales by 20–50 per cent at a price 10–30 per cent higher. It is likely that 50 per cent of the first round of expenditures passed through the hands of this group, which was more accessible and trusted than large traders. This helped medium-scale farmers to accelerate their own capitalisation process. They used the increased income to cover basic needs, increase their productive assets and, in a few cases, to diversify their livelihoods. Conversely, non-beneficiary small-scale farmers did not have enough stock to sell, hence did not benefit much from the immediate multiplier effects of the project.

Local traders were not able to increase their supplies and benefited only from the price increase. Large traders, on the other hand, had substantial gains, benefiting particularly from the successive rounds of expenditures by medium-scale farmers and local traders. Finally, almost 3 per cent of the cash injection went to local authorities in the form of taxes.

#### Conclusions

According to the case study, short-term cash injections can cause temporary inflation in unstructured markets, depending on: the scale of the transfer, the structure and integration of relevant





Photo: UK Department for International Development. Pete Lewis, Market stall holder in northern Uganda; December 2011 <<http://goo.gl/fnzvWY>> <<http://goo.gl/lclUqb>>.

market systems, and the availability of goods people spend the money on.

In the case study, the transfer was not negligible compared to people's income and covered a high proportion of the local population, livestock markets were weakly integrated at the local level, and local farmers were not able to meet the increased demand. Furthermore, inelasticity of both supply and demand was associated with incomplete information, which seemed to be a key determinant of inflationary pressure. To reduce the 'surprise' effect of short-term cash projects, key market actors should be informed in advance about the scope, size and duration of the transfer, as well as the demand-side preferences.

More important, beneficiaries should be informed about the accessibility, availability and quality of their preferred goods, as well as potentially damaging trading behaviours. After all, poor households with limited negotiating power and market connections tend to bear the heaviest effects of price increases, even if temporary.

The short-term cash transfers did not have protracted negative effects on market outcomes, and prices returned to normal immediately after the purchasing period. Similar inflationary behaviours were found in two other short-term cash transfer experiences (Adams, 2005; Save the Children, 2009), but further research should be conducted to confirm this tendency and promote a

better understanding of how to mitigate potential inflationary effects.

The analysis of multiplier effects showed that cash transfers had a positive impact on different market actors, promoting not only redistribution but also investment and production. The case study confirmed other studies' findings (Davies et al., 2008; Sadoulet et al., 2001) regarding medium-scale farmers and local traders as the main secondary beneficiaries of cash transfer projects. Local traders benefited less than expected from the cash trickle-down mainly because of their difficulties to increase the supply of high-value goods—i.e. livestock—in not well-integrated markets. The case study also showed that large traders benefited less from the first and more from the successive rounds of expenditures. ■

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[...]cash transfers had a positive impact on different market actors, promoting not only redistribution but investment and production.

1. Independent Consultant.
2. Cattle or goats.
3. Medium-scale farmers were the better-off group, as they were ahead in the livestock capitalisation process. They owned up to 20 goats and, therefore, were in a position to sell up to 50 per cent or more of their stocks.

# Cash Transfer Spillovers: A Local Economy-wide Impact Evaluation (LEWIE)

by J. Edward Taylor<sup>1</sup>

Social cash transfer (SCT) programmes have received considerable attention in the development economics literature. This is due in large part to Mexico's unique *PROGRESA* experiment, but also because of the popularity of SCTs in poverty alleviation and the simplicity of evaluating their impacts compared to other, more complex interventions.<sup>2</sup>

SCTs have the power to raise the full income of beneficiary households. The household budget constraint ensures that this translates into increased expenditures—though not necessarily increases in particular types of expenditures (i.e. on inferior goods). Local market conditions imply that expenditures on goods and services trigger changes in local supply and/or prices (for non-tradables) or in trade between localities treated by SCTs and outside markets (for tradables).

Inter-household transfers and changes in demand for non-tradable output and inputs, including labour, open up the possibility that SCTs create income and production spillovers in treated localities. By treating eligible households, SCTs also

treat the local economy. When spillovers do occur, the income multiplier effect of transfers may be greater than one.

Documenting spillovers econometrically is challenging—witness the paucity of such efforts in the literature. Households that are ineligible for SCTs are excluded from most baseline and follow-up surveys. Whereas impacts on treated households are direct, spillovers by definition are indirect and likely to be diluted through the treated locality, like ripples in a pond.

They are more difficult to identify the larger the number of non-beneficiaries relative to beneficiaries (that is, the bigger the pond) and the more open the treated economy is to outside markets (imagine ripples disappearing out of an open bay).

The multiplier effect of a dollar transferred might be considerably larger than one, but if the spillover is spread out over many households, we might not be able to identify it even with a large sample. The identification challenge is likely to be more acute for development interventions whose direct impacts are more complex than those of SCTs (imagine trying to econometrically

identify the spillovers from nudging households to use fertiliser, take up micro-credit or invest in health services).

Local economy-wide impact evaluation (LEWIE) uses a different approach to evaluate the impacts of SCTs as well as a variety of other development interventions (Taylor and Filipki, 2014). An extensive literature on agricultural household modelling (Singh, Squire and Strauss, 1986) has taught us how to think about, and model, the behaviour of individual household groups (for example, SCT-eligible and -ineligible households). General equilibrium (GE) modelling provides us with a way to integrate models of individual actors into models of local economies. LEWIE puts the two together, creating a laboratory in which to simulate the impacts of SCTs and other interventions on local economies.

The challenge for micro simulations is getting the micro model right, including expenditure and production functions for entities that often are both consumers and producers. With sufficiently detailed data from baseline surveys, we can econometrically estimate structural models of both eligible and ineligible households, test for functional forms and obtain confidence intervals around parameter estimates.

GE market-clearing conditions add up demands and supplies across actors and generate equilibrium vectors of quantities and prices that clear markets. The biggest challenge to creating GE models of local economies concerns closure—i.e. establishing where prices are determined. Prices convey impacts through economies. In a completely open economy (viz. the textbook agricultural household in Singh, Squire and Strauss, 1986), trade resolves all imbalances between supply and demand, and there can be no spillovers (the model is recursive). The presence of non-tradables in relatively isolated markets raises the possibility that income transfers create



Photo: Ian Tierney, 2009 IPC Photo Competition; Ethiopia.

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Local economy-wide impact evaluation (LEWIE) uses a different approach to evaluate the impacts of SCTs as well as a variety of other development interventions.

The stakes are high in development projects, and time and resources are scarce.

local production spillovers. This is true within villages (Taylor and Adelman, 2005) just like within households (de Janvry, Sadoulet and Davis, 2001). The absence of price changes does not mean that prices are exogenous or that SCTs do not have impacts. It could simply reflect an elastic local supply response, such as when surplus labour prevents wages from rising. To date, evaluators have not been very successful at econometrically identifying price changes in response to development programmes. This is in part because they have not looked for them very hard, but also because price changes may be negligible when the scale of experiments is small, or even in large experiments if the output supply response is elastic.

Econometric estimation of model parameters offers precision not found in conventional GE models. It also generates standard errors on all model parameters, which can be used together with Monte Carlo methods to construct confidence bounds around LEWIE simulation results—an important step towards addressing uncertainties about model parameters.<sup>3</sup> Combined with sensitivity analysis on market closure, this can provide a good sense of the range of likely impacts that a project or policy is likely to have on production, incomes, prices and other outcomes.

An evaluation of seven SCT programmes in Africa found evidence that each dollar transferred to eligible households generates significantly more than a dollar of income in the local economy—i.e. SCTs create income multipliers.<sup>4</sup> Nominal income multipliers range from 1.27 (CI: 1.25–1.30) in

Malawi to 2.52 (CI: 2.09–2.80) in a relatively remote region of Ethiopia, implying income spillovers of 0.27 to 1.56 per dollar transferred to eligible households.<sup>5</sup> Because the local supply is not perfectly elastic, local consumer price indexes increase, and real impacts are smaller than nominal ones.<sup>6</sup> Real income multipliers range from 1.08 (CI: 1.07–1.10) in Kenya to 1.84 (CI: 1.52–2.05) in Ethiopia. Differences in SCT multipliers within and across countries reflect differences in programme targeting, expenditure patterns, business composition and production functions, and market integration. Sensitivity analysis shows that only under the most pessimistic assumptions about local supply elasticities are real income multipliers not significantly greater than 1.0.

There has been a shift in scientific research from *in vivo/vitro* to *in silico* methods.<sup>7</sup> LEWIE is *in silico*. Like other *in silico* methods, it can benefit from experiments to obtain better parameter estimates, update parameters that change as a result of a treatment, and validate simulation findings. LEWIE, in turn, can provide structural explanations for the reduced-form findings that experiments yield.

Unlike experiments, it can be carried out *ex ante*, and it can offer a way forward when other evaluation methods are not only difficult to contemplate but infeasible due to data limitations, timing, logistics, cost, the lumpiness of treatments, the ethics of experiments or other considerations. More often than not, answers are needed before programmes and policies are put in place. Simulations can help policymakers and donors design complementary programmes—for example, production interventions to facilitate SCT spillovers.

The stakes are high in development projects, and time and resources are scarce. SCT programmes are charged with social protection, but LEWIE illustrates their potential to also stimulate growth in poor economies. As one SCT programme director noted, this is something you can take to the finance minister.<sup>8</sup> ■

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Thome, K., M. Filipiński, J. Kagin, J.E. Taylor and B. Davis (2013). 'Agricultural Spillover Effects of Cash Transfers: What Does LEWIE Have to Say?', *American Journal of Agricultural Economics*, 95 (5): 1338–1344.

1. University of California, Davis.
2. PROGRESA (later OPORTUNIDADES, currently PROSPERA) gave cash transfers to poor women, conditional on their children's enrolment in school and at the local medical clinic. Initially rolled out randomly across villages, it entailed the first large-scale randomised poverty treatment in a developing country. For an early explanation and evaluation, see Schultz (2004).
3. These Monte Carlo methods involve making a large number of random draws simultaneously from all parameter distributions, recalibrating the base model, then using multiple base models to simulate the same SCT 'shock'.
4. The results are available on the UN Food and Agriculture Organization's Protection to Production website: <<http://www.fao.org/economic/ptop/publications/reports/en/>> (accessed 24 March 2015), as well as in Thome et al. (2014) and Filipiński et al. (2015).
5. At 90 per cent confidence intervals (CIs), with 500 iterations. (Results do not change appreciably when 95 per cent CIs are used or the number of iterations increased.)
6. CPIs increase by 0.12–0.22 per cent for different household groups in Ethiopia, 0.07–0.23 per cent in Kenya, and 0.21–0.22 per cent in Malawi.
7. I am indebted to my son, Sebastian Fletcher-Taylor, for pointing this out. Witness a sharp increase in usage of 'in silico' contrasted with declining use of 'in vivo' and 'in vitro' on the Google books Ngram viewer.
8. See Taylor and Filipiński (2014: 8).

# Cash Transfers and Economic Growth: Some Steps Beyond Wishful Thinking<sup>1</sup>

by Stephanie Levy<sup>2</sup> and Sherman Robinson<sup>3</sup>

Providing safety nets to poor households is nowadays part of the agenda of most developing countries. When the incidence of poverty is high, providing a significant share of the population with social transfers implies substantial mobilisation of government resources. It also implies that a large injection of funds will flow into the economy and reach a population that will mostly consume the transfers they receive. This rise in household consumption will increase demand for all sorts of goods and services and will have varying economic impacts depending on whether it reaches markets that have the elasticity required to respond efficiently and rapidly enough to prevent prices from increasing.

The lack of market integration which is characteristic of remote areas and

rural villages where social protection programmes are especially needed implies that such a rise in household demand for goods and services could generate price effects, and hence, compromise the benefit of the measure for both recipients—whose real income might not increase as expected—and non-recipients, who will see their purchasing power affected. Rising prices may also lead to an increase in imports, thereby lessening the potential benefit to domestic producers, which is often referred to in relation to the economic impact of social transfers (Barrientos, 2012; Dercon, 2011). Such risks could, therefore, potentially affect the efficiency of cash transfer policies.

Since pilot projects were implemented in the early 2000s, research on social

protection has mainly focused on its impact at the household level, through the analysis of their behaviour and decision-making processes. Few studies (Alderman and Yemtsov, 2014; Barrientos, 2012; Dercon, 2011) have analysed or empirically tested the impact that social transfers are likely to have on the local economy. Our research focuses on the potential economic impact that social protection policies might have on a small economy with market imperfections and weak market integration between rural and urban areas. Our study (Levy and Robinson, 2014) illustrates, with the case of Cambodia, why cash transfers might induce price effects that could reduce the efficiency of the cash transfer policy and call for complementary measures to benefit both recipients and the domestic economy.



Photo: Jean Dominique, 2009 IPC Photo Competition; Cambodia.

In Cambodia, policy discussion around wider social protection (other than food distribution, which is relatively well established) emerged a few years ago in and around the development of the National Social Protection Strategy (NSPS). This strategy aims at combining and reinforcing existing efforts to target poor people with health and education programmes, complementing them with social safety nets.

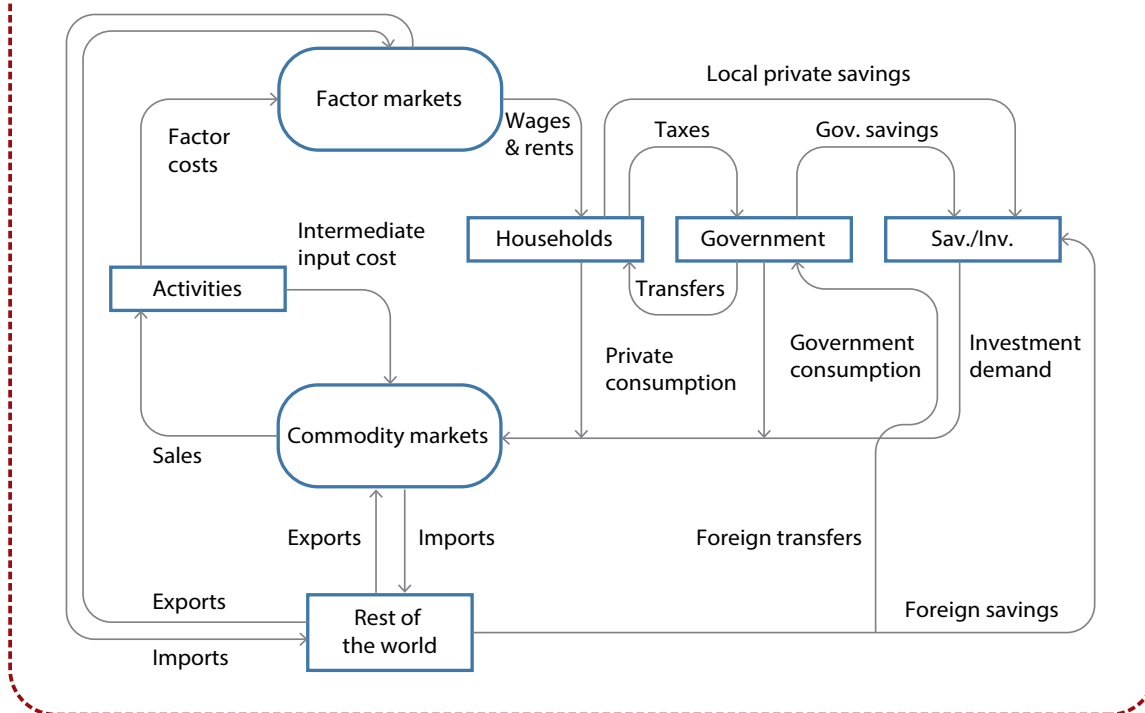
The planned measures predominantly target rural households. In fact, over the past decades, the gap between rural and urban areas has widened, and poor people in rural areas of Cambodia nowadays face a number of interlocking multi-layered problems, among them the lack of access to social services, remoteness from markets and public services, a lack of productive assets, insecure land tenure, low levels of education, and high dependency ratios. The functioning of rural markets is hindered by the substantial lack of roads and transport networks.

The provision of basic infrastructure and services to agriculture remains a binding constraint on the sector's development and on the improvement of the livelihoods of rural households in Cambodia.

Our aim is to assess the economic impacts of the planned social protection policies on domestic markets and to study the potential complementarity or synergy with Cambodian agricultural growth policies. To do so, we develop a macroeconomic model of the Cambodian economy, which is tailored specifically to simulate a large range of social policies and household targeting strategies.

We use a computable general equilibrium (CGE) model to simulate conditional and unconditional cash transfers. CGE models represent

**FIGURE 1** Structure of Financial Flows in the Standard CGE Model



Source: Lofgren, 2004.

a national economy through the annual resource and commodity flows among different economic agents across markets. These models are built on a set of equations that represent the behaviour of these agents and the economic or financial relationships that link them.

Figure 1 provides a simplified depiction of such links and flows.<sup>4</sup> CGE models provide a simulation laboratory for analysing the response of the economy to various ‘shocks’, generating new equilibrium prices and quantities that can be compared to base values. Comparing simulation results allows consideration of potential trade-offs and complementarities of different policies. Our model allows us to trace, measure and analyse the potential economic impact that social protection policies might have on a small economy with market imperfections and weak market integration between rural and urban areas. Our research illustrates why cash transfers might induce price effects that could reduce the efficiency of the policy and calls for complementary measures to benefit both recipients and the domestic economy.

### Price effects and impact on local markets

When cash transfer policies are simulated alone, we find no increase in the real Gross Domestic Product (GDP), even when up to 2 per cent of GDP is distributed to households and even when the policy is fully funded by aid donors or by Cambodian oil and gas revenue—therefore, not increasing the tax burden that could slow down the domestic economy. This result remains the same no matter what household targeting strategy is employed: cash transfers appear insufficient to promote economic growth when implemented alone. Why?

The rapid introduction of a relatively large-scale cash transfer programme gives rise to distortions on local markets—agricultural ones in particular—where supply fails to adjust rapidly enough to the increase in household demand through production, and even, for parts of the country, through trade. Our results show a potential increase in some domestic prices, of agricultural commodities in particular.

This outcome would be bad news for both the beneficiaries and the non-beneficiaries

of the measure. Even if many targeted households decide to invest part of the transfer they receive into productive activities and assets (such as cattle, tools, seeds etc.), the benefit of this investment to the domestic economy seems insufficient to overcome the distortion of domestic markets.

### Combining cash transfers with productive investment

So what role can social transfers play in an economic growth strategy? Our results show a strong complementarity between cash transfers and productive investment in agriculture (i.e. rural infrastructure, irrigation and productivity-enhancing inputs). For example, we find that it would be economically more efficient to share public spending between productive investments and cash transfers than dedicating it to any of these measures alone. Such an association of policies creates strong synergies and would be conducive to a beneficial combination of economy-wide impact and poverty reduction among all Cambodian households, when compared to social transfers or investment measures alone.

By stimulating domestic supply and allowing it to respond to the increase in demand without increasing prices, public investment appears to be an ideal complement to social protection, and the combination of the two a robust engine for growth. Therefore, social protection could become an engine for growth if it is complemented by productive investment that enhances productivity in economic sectors that are of particular importance to poor people.

When cash transfers are combined with productive public investment, we find that they are less likely to generate price rises on domestic markets. The economic impact of such programmes is positive and substantial, as food crop production and exports both increase substantially, while imports are largely reduced. These positive economic effects are also more likely to be sustained as a result of the accumulation of productive assets. Poverty reduction among all households is higher than when cash transfer programmes are implemented alone. Such policies should, therefore, be designed in conjunction rather than in parallel. Safety nets are likely to have a better impact on poverty reduction when integrated into larger investment and rural development programmes.

These results reveal that beneficial complementarity exists between social protection and investment strategies that are specifically focused on agricultural growth. Combining cash transfers with targeted public investment seems likely to significantly stimulate the domestic economy and generate better outcomes in terms of poverty reduction than each measure separately.

Policymakers have limited, typically scarce, funding capacity. They demand realistic assessments about what social protection can achieve. Our results suggest that the efficiency of these policies could be improved by taking into account, at an early stage of policy design, the capacity and ability of local production to respond to a sustained increase in domestic demand. Our research identifies a number of complementary measures that could improve the impact and even maximise the benefit of cash transfers. ■

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Photo: Gareth Bogdanoff, Artisans D'Angkor <<http://goo.gl/7csqD6>> <<http://goo.gl/dgEZwJ>>.

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Our results show a strong complementarity between cash transfers and productive investment in agriculture.

Safety nets are likely to have a better impact on poverty reduction when integrated into larger investment and rural development programmes.

1. This article is based on a previously published One Pager <[http://www.ipc-undp.org/pub/eng/OP255\\_Maximizing\\_the\\_Economic\\_Impact\\_of\\_Cash\\_Transfers.pdf](http://www.ipc-undp.org/pub/eng/OP255_Maximizing_the_Economic_Impact_of_Cash_Transfers.pdf)>.
2. Visiting Research Fellow, London School of Economics (LSE).
3. Senior Research Fellow, International Food Policy Research Institute (IFPRI).
4. The arrows represent financial flows. The model also includes 'real' flows (e.g. factor services or commodities) that go in the opposite direction of the financial flows across commodity and factor markets (from Lofgren, 2004).

# The Bolsa Família Programme: Distribution and Growth

by Joaquim Bento de Souza Ferreira Filho<sup>1</sup> and Daiana Inocente da Silva<sup>2</sup>

Brazil has been showing improvements in its social indicators since 2001. Its Gini index evolved from 59.3 in that year to 52.7 in 2012, while the number of poor households decreased from 35.9 million to 13.5 million. Among the factors behind the fall in poverty are the strong economic growth observed between 2003 and 2008, and the concurrent implementation of direct transfer programmes (Hoffmann, 2006), the most visible of which is the *Bolsa Família* (BF) programme.

BF was launched by the Federal Government of Brazil in 2003 with the explicit aim of alleviating poverty through direct transfers to households. The programme differentiates between two groups of programme beneficiaries: 'poor households' with monthly incomes between BRL77.01 and BRL154.0 per capita, and 'extremely poor households', with average per capita incomes limited to BRL77. BF programme participation is contingent upon child school attendance and basic health care. In 2013, the programme supported 14.1 million families, 50.7 per cent of which were located in the Northeast region of Brazil, the poorest region in the country. The amount spent on the programme amounted to BRL22.4 billion in 2013, or about 0.5 per cent of Brazilian Gross Domestic Product (GDP) for the same year.

The BF programme is generally regarded as being successful in targeting the poorest households in Brazil (Azzoni et al., 2007), and associated with the observed decrease in inequality and poverty that the country experienced over the last decade. The simultaneous improvements in social indicators and the strong economic growth displayed by Brazil up until 2008, however, have led some researchers to attribute a prominent role in the growth process to the programme. Neri, Vaz and Souza (2013), for example, conclude that GDP would increase by BRL1.78 for each BRL1 transferred through the BF programme.

The literature which supports the view that BF can be regarded as a short-run economic growth initiative tends to focus on the programme's local multiplier effects or on its effect on demand, which is likely to have a positive economic impact from a partial equilibrium perspective. However, this literature fails to acknowledge the impact of funding mobilisation for the programme. This is rather concerning for a programme of the size of BF, which transfers 0.5 per cent of Brazil's GDP every year, requiring a sizeable fiscal effort. The effects of this programme can hardly be evaluated in isolation from the sources of those funds.

Even though studies such as Hoffmann's (2005) have concluded that only 10–20 per cent of the decline in poverty over the period was due to transfer programmes, while the rest was attributed to economic growth, others typically tend to overestimate BF's effects on poverty, based normally on arguments related to fixed price multipliers. One difficulty associated with the issue is to establish a proper counterfactual analysis to disentangle the multiple effects operating simultaneously. The problem becomes even more complicated if the supply

side of the economy is disregarded. Our research uses a detailed Computable General Equilibrium (CGE) model of Brazil to include the supply side in the discussion of BF's broad economic effects. We use different economic adjustment possibilities to obtain insight about the programme's economy-wide effects once the financing side is taken into account.

We start by analysing how BF is funded. We assume that the financing of the increase in the BF programme funds is realised mainly through PIS/COFINS (Cury and Leme, 2007) and CSLL,<sup>3</sup> two sets of taxes aimed at funding Brazil's social security policies. Our objective is to analyse the impact of taxes on the prices of products and services; therefore, we investigate the effects of the BF transfers under three different adjustment hypothetical scenarios. The 2012 *Pesquisa de Orçamentos Familiares* (POF) (2008–2009) presented a special supplement devoted to BF, from which it is possible to track the distribution of the programme by household and region. We use this to create a detailed map of the transfers, used in simulations, which consisted of applying the calculated variation of the BF transfers between 2005

**TABLE 1**

**Model Results  
Macroeconomic Variables, Percentage Change**

	Scenario 1	Scenario 2	Scenario 3
Household consumption	0.35	0.47	1.32
Investment	-2.11	0	0.30
Exports (quantum)	-0.31	-2.33	-3.88
Imports (quantum)	-0.36	0.20	0.80
GDP (real)	-0.14	-0.10	0.16
Average real wage	-0.87	-0.71	0.35
Balance of trade/GDP	0	-0.37	-0.68

Source: Authors' elaboration.



Photo: Fundação Jose Lazzarini, 2009 IPC Photo Competition; Brazil.

“ The BF programme is generally regarded as being successful in targeting the poorest households in Brazil (Azzoni et al., 2007), and associated with the observed decrease in inequality and poverty that the country experienced over the last decade.

and 2012 to the appropriate household groups in each region.

Using a CGE model requires choices regarding model behaviour. In this article we have considered three different economic adjustment hypotheses (closures),<sup>4</sup> all of which consider that household consumption is endogenously determined and a function of each regional household income, and government consumption is fixed (constant). In the first two closures, the amount transferred by the BF programme has to be raised by taxes, forcing the economic system to levy the transfers through an endogenous adjustment of an indirect tax rate on goods and services. Additionally, in the first closure option, investment is endogenous and linked to profits, while the trade balance is fixed as a share of GDP. The level of investment, therefore, needs to adjust to restore the savings–investment balance after the policy shock (the increase in the BF transfer). In the second closure, investment is exogenous, while the trade balance adjusts endogenously.

In the third closure, the BF funds are not levied by taxes but, instead, allow government debt to increase, with both the level of investment and the trade balance being endogenous. The macroeconomic results of the simulations can be seen in Table 1.

We find that household consumption increases in all simulations—as expected,

since the shock consists in an increase in the direct transfers they receive, allowing for higher consumption of goods and services. The increase is particularly important for the poorest households, who benefit the most from the transfers. In the first simulation, with the trade balance set as a share of GDP and fixed government consumption, the increase in household consumption must be compensated by a strong decrease in investment. This is due to the rise in prices generated by the increase in the tax rate to collect the amount transferred—not compensated, as in the case of consumption, by transfers. The adjustment also implies a decrease in actual wages, offsetting part of the consumption increase and reducing GDP.

In the second closure, with investment fixed exogenously, the burden of the adjustment goes to the external-sector balance. With government consumption and investment fixed exogenously, the increase in household consumption generated by the transfers cause exports to decrease and imports to increase, leading to a deterioration of trade balance (-0.37 per cent as a share of GDP) and a decrease in real GDP. This movement is equivalent to a real exchange rate revaluation, caused by the increase in domestic prices, a requirement to raise the transfer funds.

Finally, the third closure allows investment and the trade balance, as well as government debt, to vary endogenously. Notice that this is the only case where real



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Another important aspect of the programme is that it contributes to the reduction of regional inequalities, something also related to the fall in poverty witnessed in Brazil.



Photo: Fundação Jose Lazzarini, 2009 IPC Photo Competition; Brazil.

GDP growth is observed. This happens because now there are no constraints on the expenditure side: both household expenditure and investment can increase, however backed by a strong deterioration in the trade balance. This is also the only case in which an increase in real wages could be observed. All this adjustment, however, is made possible by massive transfers from abroad made necessary to match the trade account deficits, generated by an increase in government debt required by the transfers.

Another important aspect of the programme is that it contributes to the reduction of regional inequalities, something also related to the fall in poverty witnessed in Brazil. The transfers would increase the GDP of the poorest states in Brazil, notably in the North and Northeast regions, at the cost of reducing (proportionately less) GDP in the relatively richer regions of the country. This, of course, happens because most of the taxes are levied on the richest regions and transferred to the poorest ones. However, the outcome of a transfer programme which must be funded through taxes is likely to hinder, not stimulate, economic growth.

In conclusion, we note that there is no reason to expect direct transfer programmes to be considered growth programmes, strictly considering their direct economic effects. In fact, this is too much to ask for of programmes designed for poverty alleviation—they should be regarded as such. ■

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1. Professor, Luiz de Queiroz College of Agriculture, University of São Paulo, Brazil.
2. PhD student, Luiz de Queiroz College of Agriculture, University of São Paulo, Brazil.
3. *Programa de Integração Social* (PIS — Social Integration Plan); *Contribuição para o Financiamento da Seguridade Social* (COFINS — Contribution for the Financing of Social Security); *Contribuição Social sobre o Lucro Líquido* (CSLL — Social Contribution on Net Profits).
4. CGE models normally have more variables than equations. The model's closure is the choice of a set of variables to be treated as exogenous, which is necessary for model solution and determines the model's behaviour.

# Linking Economic Growth and Economic Equity in Transfer Programmes

by Harold Alderman<sup>1</sup>

Transfer programmes are evaluated both in terms of their role in increasing current consumption of poor households and, increasingly, in their contribution to facilitating the poor to acquire the capital necessary to move beyond poverty.

To a large degree the former contribution of transfer programmes is indicated by their targeting effectiveness and generosity (Case and Deaton, 1988).

The latter role of transfers is more diverse and, thus, has generated a more complex literature. Attempts to measure the contribution of social (or cash) transfers to income growth can be broadly classified into four pathways (Alderman and Yemtsov, 2014). First, transfer programmes, particularly conditional cash transfers, are viewed as enabling households to make better investments in their future by addressing some of the imperfections in markets caused by constraints in obtaining credit, inputs and insurance, as well as from information asymmetries and by changing incentives to invest in the human capital of children (Das, Do and Özler, 2005). Conditional cash transfers aimed at encouraging education or health care

possess this as an explicit objective. A second stream of analysis gauges whether transfers help households manage either *ex post* or *ex ante* risk and serve as an insurance mechanism that both fosters efficient investments and protects against asset depletion. These two pathways are usually viewed from an individual or household perspective.

Additionally, from the perspective of a local economy, transfers, particularly public works programmes, can contribute to local economic growth by creating community assets. Furthermore, another potential influence at the community level can come from the liquidity injected into a community from transfers.

This may spill over into the form of increased demand for goods and services that provide multiplier effects for a local economy. Finally, the presence of an equitable transfer programme can allow a government to make reforms that may be economically efficient but nevertheless harm segments of society in its absence.

It is comparatively easy to acquire evidence on the impact of a transfer on household

consumption, taking into account any labour reallocation that results from the transfer being offered. Similarly, a range of randomised controlled trials or propensity score-matching studies support the understanding of how transfers affect household investments. It is, however, less straightforward to assess community-level impacts of transfers on growth; thus, the literature is less extensive.

In theory, cash transfers can stimulate economic growth by relaxing constraints of demand (Lewis and Thorbecke, 1992; Levy and Robinson, 2014). While this possibility can be demonstrated, for example, in general equilibrium models, it is often difficult to measure or isolate from other trends.

One reason as to why the long-term impact is difficult to measure is that the liquidity injected must come from public funding and, therefore, from a tax—with associated economic distortions. Households may change their behaviours in anticipation of future higher taxes to pay for government spending and, as a result, offset the short-term benefits of fiscal expansionary policies. In the long term, the effects on



Photo: Mauricio Victa, 2009 IPC Photo Competition; Philippines.

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From the perspective of a local economy, transfers, particularly public works programmes, can contribute to local economic growth by creating community assets.

growth will be positive only if permanently higher productivity growth is achieved in the local economy.

Transfers to one region that are financed by taxes collected more broadly can help create regional growth poles that stimulate lagging areas, as argued for China (Ravallion and Chen, 2005) and Mexico (Angelucci and De Giorgi, 2009). While those studies address multiplier effects in terms of local liquidity, they also address equity and, thus, indirectly elucidate another pathway from transfers to growth that has been postulated. If, as argued by Sala-i-Martin (1997), inequality fosters rent-seeking, transfers may have an effect that partially offsets this behaviour.

The evidence for this is, quite obviously, hard to accumulate. Related evidence that the aggregate impact of transfers at a community level can foster growth by reducing crime (Mahlum et al., 2005) or by encouraging reintegration in post-conflict situations is only occasionally available.

Even if such evidence were more persuasive, it is presented to assess the instrumental value of equity and usually does not directly credit equity as a value in itself. This is a generic problem common to many assessments of transfer programmes. As indicated, there are numerous studies that evaluate the impact of such programmes on human and physical capital, and others that assess their targeting effectiveness and, thus, their contribution towards poverty reduction.

However, attempts to combine these two objectives are limited by the absence of a common metric. It is not possible, however, to consistently argue that society does not value the reduction of poverty or the increased equity resulting from a transfer, given that society chooses to use resources to administer the targeting of such programmes to poor households. If the value of increased equity or reduced poverty is believed to be positive—even if this value is perhaps unknown and possibly unmeasurable—then standard benefit–cost estimates are likely lower bounds for the true benefit–cost ratios.

Similarly, cost-effectiveness comparisons that, by design, focus on one dimension of benefits place transfer programmes

at a disadvantage. An illustration of this inability to aggregate the acknowledged distributional objectives of a transfer programme along with the politically desirable contribution to growth is found in Dhaliwal et al. (2013).

The objective of that review is to compare diverse schooling investments in education, including the recognised impact of Mexico's conditional cash transfer programme, *PROGRESA*, on schooling.

The benefits from *PROGRESA* in terms of schooling alone appear to be relatively modest. Thus, by including the full costs of the transfer in the denominator of a cost-effectiveness comparison of schooling investments, it appears costly to achieve the observed results. If *PROGRESA* (or its successor, *Oportunidades*) is assessed on this contribution to schooling alone, it would be at a major disadvantage in determining budget allocations.

While the distributional value to society of this—or any other—transfer programme cannot be directly measured, leaving it out of any assessment implicitly assumes that the social value of distribution is zero, a tacit assumption that is hard to defend in the context of a programme designed to provide cash to poor households.

Thus, evaluating a transfer in terms of an economic growth impact—in effect asking 'is the transfer the most cost-effective way to allocate the education or health budget?'—will provide a misleading answer compared to using the human capital improvements as one dimension of the answer to the question 'is the programme the best way to allocate the funds devoted to transfers?'

The latter question still requires a vexing set of trade-offs. For example, increasing transfers to potential secondary-school students at the expense of primary-school students is likely to increase the educational impact (as primary schooling is nearly saturated in many communities).

But as there remains an income gradient in secondary enrolment, a focus on this level of schooling may decrease the share of funds available for the poorest households. While not phrased in quite

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The presence of an equitable transfer programme can allow a government to make reforms that may be economically efficient but nevertheless harm segments of society in its absence.



Photo: Wong Chi Keung, 2009 IPC Photo Competition; Salt farming on volcanic rocks. Hong Kong, China.

“ In the long term, the effects on growth will be positive only if permanently higher productivity growth is achieved in the local economy.

these terms, Baird et al. (2011) illustrate two possible transfer programmes in Malawi in which the transfer with the greater impact on schooling has rather different distributional impacts from the one which does not influence schooling appreciably.

Similarly, allocation of a large share of a national transfer budget to elderly people will have a different balance of poverty reduction and human capital investments from a shift of that budget to a population of households that all contain school-age children.

While the trade-offs underlying these and similar choices are readily apparent, the analytical tools to investigate them are less developed than those for individual investment and consumption impacts. Even though there is increasing evidence of the contribution from transfer programmes to economic growth, the return on these investments does not come solely from any increases in individual human capital investment nor in the aggregate stimulation of poor areas.

Rather, it is the combination of the direct effect on poverty reduction in conjunction with their contribution to growth that jointly justifies their claim for limited public funds, even if this combination is difficult to quantify. ■

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**International Policy Centre for Inclusive Growth (IPC-IG)**

United Nations Development Programme

SBS, Quadra 1, Bloco J, Ed. BNDES, 13º andar

70076-900 Brasilia, DF - Brazil

Telephone: +55 61 2105 5000

E-mail: [ipc@ipc-undp.org](mailto:ipc@ipc-undp.org) ■ URL: [www.ipc-undp.org](http://www.ipc-undp.org)



Policy in Focus - May 2015.

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The themes of price and productivity effects of transfers have implications for the design of anti-poverty policies, and here trade-offs emerge.

**Martin Ravallion**

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Cash transfers can be managed not only for accurate targeting but also to help recipients maximise multiplier effects.

**Alain de Janvry and Elisabeth Sadoulet**

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The stakes are high in development projects, and time and resources are scarce.

**J. Edward Taylor**

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It would be economically more efficient to share public spending between productive investments and cash transfers than dedicating it to any of these measures alone.

**Stephanie Levy and Sherman Robinson**