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Cash, food, or vouchers? Evidence from a randomized experiment in northern Ecuador☆,☆☆

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ABSTRACT

The debate over whether to provide food-assistance and the form that this assistance should take has a long history in economics. Despite the ongoing debate, little rigorous evidence exists that compares food-assistance in the form of cash versus in-kind. This paper uses a randomized evaluation to assess the impacts and cost-effectiveness of cash, food vouchers, and food transfers. We find that all three modalities significantly improve the quantity and quality of food consumed. However, differences emerge in the types of food consumed with food transfers leading to significantly larger increases in calories consumed and vouchers leading to significantly larger increases in dietary-diversity.

1. Introduction

Certain design issues are common to all social transfer interventions: who should receive benefits; how much should be given and with what frequency; how long should benefits be provided; what form of assistance should be provided; what conditions should be attached; whether the intervention is incentive compatible with the behaviors or outcomes that are the objective of the program; and the cost-effectiveness of different design options. Analysis of these issues has a long history within economics. They appear in Senior's (1834) report on the operation of the Poor Laws in nineteenth century England, in the functioning of the Famine Codes in late nineteenth century and early twentieth century India (Drèze, 1990), in discussions surrounding welfare reform in the United States in the 1990s (Blank, 2002), and in contemporary debates regarding the design and implementation of social protection programs in developing countries (Grosh et al., 2008). The form of assistance – cash, near-cash transfers such as vouchers, or in-kind – has been especially contested.

Assistance in the form of cash is justified primarily on the grounds that it generates the largest welfare gains because it allows beneficiaries to use the transfers as they see fit. As Glaeser (2012) notes, "I am grateful for the freedom I enjoy when spending my earnings; surely, aid recipients also like autonomy. They can choose the spending that best fits their needs if they are given unrestricted income." Under the second theorem of welfare economics, given certain assumptions, lump-sum cash transfers are efficient in that they move the economy from one pareto optimum to another without introducing welfare-destroying distortions (Blackorby and Donaldson, 1988; Currie and Gahvari, 2008). Moreover, it is argued that less stigma is attached to cash transfers, which, compared with in-kind or near-cash transfers such as vouchers or food stamps, are less visible to non-beneficiaries (Grosh et al., 2008). After the necessary administrative structures are in place, cash transfers are also perceived to be less costly to administer. Jacoby (1997) argues that in-kind transfers are associated with a large deadweight loss due to substantially lower benefits relative to the cost of providing it.

Two arguments are made to justify near-cash transfers such as food stamps and in-kind transfers. The first relates to targeting. Where it is not possible or very costly to identify beneficiaries, in-kind transfers are advantageous because only those truly in need will take-up these in-kind benefits, and consequently, in-kind transfers may be less distortionary than cash transfers (Blackorby and Donaldson, 1988; Currie and Gahvari, 2008; Drèze, 1990). Bruce and Waldman (1991)

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extend this argument, showing that in the presence of a Samaritan's Dilemma, in-kind transfers are more efficient than cash transfers even under conditions of perfect information. The second argument for in-kind transfers is essentially paternalistic. Policy makers and program implementers seek to change a particular behavior or the consumption of a particular good (Currie and Gahvari, 2008). Underpinning this motive is an assumption that in-kind transfers do not crowd out private spending on the good being provided.

Other arguments in favor of one form of transfer over another are circumstance dependent (Coate, 1989). For example, although cash transfers are preferable when prices are declining, beneficiaries are protected from price increases when they receive in-kind transfers. The provision of cash transfers can also adversely affect non-beneficiaries living in the same locality when food markets are not integrated because the injection of cash may cause food prices to rise (Basu, 1996; Gentilini, 2007).

In the United States over the past 40 years in-kind programs have been growing faster than cash programs (Glaeser, 2012). Rather than debating which type of assistance is *most* effective, the debate usually centers on the effectiveness of a specific program such as the Supplemental Nutrition Assistance Program (SNAP, formerly known as the Food Stamp Program). Only a handful of studies in the United States compare different policy options for food assistance. One such study compares food stamps to equivalent cash transfers and finds that food stamp beneficiaries spend a greater fraction of their transfers on food, a result commonly referred to as the cash-out puzzle (Fraker et al., 1995). However, using variation in the roll-out of the food stamp program across counties, Hoynes and Schanzenbach (2009) find that the marginal propensity to consume food out of the food stamp is similar to the marginal propensity of cash. Another recent study compares the less restricted SNAP program to the more restricted Women, Infants, and Children (WIC) program and finds that WIC leads to greater nutritional impacts, especially among children (Yen, 2010).

In developing country contexts, the merits of cash transfers rather than near-cash or in-kind transfers, particularly food, have produced a debate that Devereux (2006) describes as polarized and acrimonious. There are concerns regarding the cost-effectiveness of alternative transfer modalities, a belief that in-kind transfers have especially pernicious disincentive effects and the impression that in-kind recipients often sell a portion of their transfers at prices below their market value, thereby reducing their value. This debate, however, has been hobbled by a lack of rigorous evidence. Numerous studies exist on the impact of cash transfers (for review see Fiszbein et al. (2009)) and food transfers (for review see Barrett and Maxwell (2005) and Margolies and Hoddinott (2012)), but comparisons of impact are often confounded by differences in program design, the magnitude of the transfer, and the frequency of the transfer.

In randomized studies of programs in Sri Lanka and Mexico impacts of cash and food transfers are compared and although food is inframarginal in both programs, in Sri Lanka food leads to smaller impacts on total food expenditures, while in Mexico food and cash lead to similar impacts (Cunha, 2012; Sharma, 2006; Skoufias et al., 2008). Differences in the design of cash and food transfers within and across countries however could explain results. In Sri Lanka cash transfers were provided bi-weekly over a three month period whereas food was provided twice, and in southern Mexico the food transfer was worth 33% more than the cash transfer at local market prices. In a randomized study in the Democratic Republic of Congo, cash and coupons are compared and found to have similar impact on total food expenditures (Aker, 2013). However, similar to the studies in Mexico and Sri Lanka, differences across cash and coupons (or food in the case of Mexico and Sri Lanka) emerge with respect to consumption of certain food items.

To our knowledge, this is the first study that directly compares three different types of food assistance side by side, and thus contributes to the existing literature. It uses a randomized design to compare the impact and cost-effectiveness of cash, food vouchers, and food transfers on the quantity and quality of food consumed. To reduce the probability that impact estimates are confounded by differences in program design, careful attention was paid to ensure that all aspects of the transfer program – transfer levels, transfer frequency, and conditions and nutrition messages attached to program participation –were as similar as possible across modalities. Moreover, the program was fielded in several urban and peri-urban localities in Ecuador with well-functioning food markets. Together with the fact that the intervention was small relative to the size of the local economy, means that results are not confounded by differences in price trajectories faced by beneficiaries receiving different transfer modalities.[1]

We find that all three treatment arms significantly improve the quantity and quality of food consumed as measured by the value of per capita food consumption, per capita caloric intake, and dietary diversity measures. However, across treatment arms differences emerge in the types of food consumed with food transfers leading to a significantly larger increase in calories consumed, and vouchers leading to a significantly larger improvement in dietary diversity. Combining impact estimates with costing data, we find that in this setting – urban with well-functioning food markets –given the significantly higher costs of implementing food transfers, food is always the *least* cost-effective modality for improving any outcome measure, and vouchers are usually the most cost-effective.

The rest of this paper is structured as follows: Section 2 introduces the program and study design; Section 3 presents the data and descriptive analysis; Section 4 discusses the empirical methods used to evaluate the different transfer modalities; Section 5 presents the impact results; Section 6 conducts robustness checks and extended analysis; Section 7 presents the costing and cost-effectiveness analysis; Section 8 discusses beneficiaries preferences and costs; and Section 9 concludes.

2. Program design

2.1. Intervention

Responding to a request from the government of Ecuador in April 2011, the World Food Programme (WFP) expanded its assistance to address the food security and nutrition needs of Colombian refugees and to support their integration into Ecuadorian communities. The new program was designed as a prospective randomized control trial and consisted of six monthly transfers of cash, food vouchers, or food to Colombian refugees and poor Ecuadorian households. The objectives of the program were three-fold: 1) to improve food consumption by facilitating access to more nutritious foods, 2) to increase the role of women in household decision-making related to food consumption, and 3) to reduce tensions between Colombian refugees and host Ecuadorian populations.

The program was implemented in seven urban centers in the provinces of Carchi and Sucumbíos. Both Carchi and Sucumbíos are northern border provinces that receive high influxes of Colombian refugees and cross-border traffic. However, Carchi is located in the northern highlands and Sucumbíos is located in the Amazonian lowlands, and therefore, each has distinct cultural, socio-economic and geographic features. *Barrios* (or neighborhoods)[2] within these urban centers were chosen for the intervention by WFP in consultation with the United Nations High Commissioner for Refugees (UNHCR) as areas that had large numbers of Colombian refugees and relatively high levels of poverty. Each household in the selected *barrios* was visited, mapped, and administered a one-page questionnaire that consisted of basic demographic and

[1] In 2010 the population of the two urban cantons where the study took place –Lago Agrio and Tulcan – was 91,744 and 86,498 respectively. The total number of beneficiaries across the two cantons was 3642. Thus, approximately 2% of the population experienced a 10% increase in income, which we conjecture had little impact on prices.

[2] *Barrios* are existing administrative units within the urban centers with oversight over social services and other administrative functions.