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Cash Transfer Programs With Income Multipliers: PROCAMPO in Mexico

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The four main types of social assistance programs currently used by governments and international development agencies include food subsidy programs, generating programs, credit programs, and cash transfer programs. This study analyzes the direct and indirect income effects of cash transfers to Mexican farm households in the context of PROCAMPO (Program for Direct Assistance in Agriculture).

The primary objective of cash transfer programs like PROCAMPO is to raise income. While studies have focused on the potential "negative" indirect effects of cash transfers on work effort, and on the decline in private transfers received by the targeted households if these transfers are crowded-out by public transfers, none to our knowledge has assessed the positive indirect effects of cash transfer programs via income generation by putting the cash transferred to work. Yet, if the household is liquidity constrained and hence has underemployed and ill-allocated productive assets relative to an unconstrained situation, the cash transfer should generate benefits at least similar to a credit program. For example, the money can be used to purchase current inputs or to invest in physical and human capital.

The PROCAMPO Program

As a consequence of the North American Free Trade Agreement, trade liberalization for basic crops competitive with U.S. and Canadian exports was anticipated to create a sharp decline in domestic prices for Mexican producers as prices for these crops had been supported above border prices. The Inter-American Bank-supported PROCAMPO program was introduced as a compensatory income transfer targeted to these crop producers. PROCAMPO is a cash transfer program of significant magnitude. Since its inception in 1994, it has covered, on average, 14 million hectares a year, including more than 95 percent of the area that had been planted in corn, beans, sorghum, and wheat. Payments are made to approximately 3 million producers a year, for a total expenditure in 1998 of US\$919 million. In 1997, transfers represented, on average, US\$329 per recipient and US\$68 per hectare. This represents 46 percent of the gross maize income for a farmer who obtained the average yield of 1.06 tons per hectare and the average price of US\$140 per ton observed in the *ejido*. While the value of payments has eroded from US\$102 to US\$68 per hectare between 1994 and 1997, the transfers still represent a very

significant cash contribution to farm households, particularly the poor.

The Ejido Sector, the Data, and the Methodology

This paper analyzes the impact of the PROCAMPO program on households in the *ejido* sector. The *ejido* sector was the product of the sweeping land reform that followed the peasant-led revolution of 1910 and contains approximately 60 percent of the Mexican rural population, half the country's agricultural land, and half its irrigated land. In terms of social welfare, it is a major reservoir of rural poverty and an important source of migrants to the United States.

The data are derived from a nationwide panel survey of *ejido* communities and *ejidatario* households within these communities. The data were collected in 1994 by the Mexican Ministry of Agrarian Reform and the University of California at Berkeley, and in 1997 by the Mexican Ministry of Agrarian Reform and the World Bank. The data characterize resource use and income formation by households. The sample with complete panel information on income includes 958 households.

During the period under study, total household income increased by 14 percent. Hence, direct PROCAMPO transfers represent more than 60 percent of the registered increase in income. PROCAMPO transfers served as an important compensating mechanism for the larger landholders and for households with low labor, education, and migration assets for whom the observed change in income was less than the PROCAMPO transfer. Direct PROCAMPO transfers, however, fell short of compensating for the fall in income in the North-Pacific region where agriculture is more technological and diversified.

The data show that even though all households are landed, the share of total income derived from nonfarm activities is very high, and it rose during the period analyzed. This increase is in part due to

PROCAMPO, which did not exist in 1994, and provided, on average, in 1997, 7.7 percent of total household income and 14 percent of nonfarm income.

We analyze the income multiplier effects of the PROCAMPO transfers by identifying the determinants of income change between 1994 and 1997. We measure the multiplier effect of PROCAMPO on total household income using several alternative econometric specifications. We

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then calculate this multiplier for specific subsets of the population and for each income source. Finally, we track the origins of the PROCAMPO multiplier in agriculture by analyzing how PROCAMPO has induced greater use of purchased chemical inputs.

Results

This study found that, in at least the case of this program, the indirect effects of cash transfer programs can be highly significant and that they thus deserve full consideration in the design of other such programs. We found, in particular, that PROCAMPO created large indirect effects through multiplication of the liquidity received. The multiplier for all households is in the range of 1.5 to 2.6. Multipliers are higher for households with medium and large farms, low numbers of adults in the household, nonindigenous backgrounds, and located in the Center and Gulf regions. Large multipliers reflect uncaptured marginal income opportunities due to liquidity constraints that are relaxed by the transfers. Opportunities come from the asset endowments that these households have, particularly irrigated land, and they are enhanced by access to technical assistance. Liquidity constraints derive from incomplete property rights in the *ejido* sector, and from the current disarray of financial institutions servicing agriculture following the scaling down of the agricultural development bank as a result of structural adjustment. Large multipliers thus reflect sizable gaps between opportunities and constraints. Households with migrants sending remittances and with higher levels of education may thus have lower multipliers because they were able to work around the liquidity constraints more effectively than other households. Households with little land and with ethnic backgrounds may have lower access to liquidity, but also have lower opportunities to invest additional cash received, again resulting in lower multipliers.

Discussion

There are two policy implications that derive from this analysis. First, if multiplier effects are important and policy-

responsive (as suggested by heterogeneity of multipliers across households), then the PROCAMPO program would gain from being managed as part of a comprehensive effort to maximize these multipliers (since the ultimate goal is to raise the income of targeted households). This can be done by introducing complementary rural development initiatives that increase opportunities to use the transfers productively. It is worth emphasizing that the households that benefit from the multiplier effect are primarily from higher income groups. Thus, while increasing incomes, the indirect effect does not reinforce the impact of the direct effect on poverty. Thus the cash transfer that maximizes the multiplier effect may not be the most effective at reducing poverty.

The second policy implication is that high multipliers show capacity to borrow even at high interest rates. Willingness to pay for liquidity is somewhat overrepresented by the magnitude of the multipliers since they need to be discounted for the risk of borrowing, which is not present with gifted money. However, the results show that there is a clear unmet need for liquidity that can be productively invested, and that *ejidatarios* can pay for this service at interest rates that are quite compatible with current commercial rates. This shows the high payoff that exists from constructing an alternative set of financial institutions able to replace the parastatals that previously served the sector. If land is to serve as collateral in accessing loans in these financial institutions, then the current titling program should have a high payoff. Titling without access to credit will, however, not change the current situation. PROCAMPO multipliers help reveal the shadow value of liquidity in every category of potential borrowers. They consequently provide a metric to identify where the effective demand for financial services is the greatest.

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