Are the Welfare Losses from Imperfect Targeting Important?

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Over the last decade or so, developing countries have emphasized targeted programs to avoid leakage of poverty alleviation budgets to nonpoor households. Poor targeting may result in a much smaller impact on poverty. To efficiently target transfers to households, one needs an observable indicator that is highly correlated with program objectives.

This paper evaluates five common indicators of household welfare that have been used in practice or suggested by the literature as alternatives to the "ideal" indicator of household consumption. This household consumption standard, though perceived as a better indicator, is also time-consuming and expensive to measure. Thus, it is not always available from household surveys, and one is often forced to rely on alternatives that can be constructed with data that already exist or can be more easily or cheaply collected. When evaluating indicators as targeting variables, one needs to address the trade-off between the inevitable targeting errors that will result and the cost savings.

Household Welfare Indicators Compared

Using the real-life example of the Programa Nacional de Educación, Salud y Alimentación (PROGRESA), a Mexican anti-poverty program that involves cash transfers to households, with the amount of the transfer depending on the age and gender of each child, the authors briefly discuss the range of indicators they consider as viable alternatives. Their choices were motivated by their greater availability, ease and lower cost of data collection, or simply by the fact that they are commonly used or proposed.

The "gold standard" against which the authors compare these indicators is reported total consumption per adult equivalent. Consumption is widely considered a better measure of household welfare over the life cycle, or a better indicator of persistent poverty, because it is thought to be less susceptible to seasonal variation or underreporting by households. However, consumption data are also more expensive and time-consuming to collect.

The authors evaluated reported expenditures, food share (the share of total consumption accounted for by various foods), reported income, the probability of being poor (a categorization derived through logit analysis), and an asset index (derived from information on the range of assets held by households). These indicators were all viewed as imperfect proxies for the ideal consumption indicator.

Methodology and Data

The authors set out to evaluate the welfare losses resulting from use of these alternative, "imperfect" welfare indicators. The approach was based within standard welfare theory but also incorporated various poverty indices and indices of "undercoverage" and "leakage." The data used to simulate program interventions were based on 4,378 rural and 9,001 households in Mexico surveyed as part of the 1996 National Survey of Household Income and Consumption (ENIGH).

The authors classify households as poor using household consumption and a poverty line drawn at the median of the rural sample—they assumed 50 percent of the rural population was poor. They also calculated welfare weights based on household per-adult equivalent consumption. For each indicator, they determined which households would receive the transfers by taking those falling into the bottom half of the distribution of this indicator.

The amount of transfer received was then determined by household composition according to the scheme developed by the PROGRESA program. Using the various welfare indices, the authors then

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compare the welfare impact of the various programs with what would have resulted from "perfect targeting," i.e., using reported consumption.

Results and Discussion

The simulations showed that the size of the welfare losses associated with different indicators varied considerably. The preferred welfare index implied that the losses from the two best targeting indicators—reported expenditures and reported income—were very low. Moreover, the welfare losses suggested by the preferred welfare index, which attaches a larger penalty to targeting errors the greater their distance from the poverty line, were always lower than those suggested by the poverty, undercoverage, and leakage welfare indices.

In contrast, the welfare losses suggested by undercoverage and leakage indices were substantially higher, while those based on poverty indices were relatively high for the worst performing indicator (food share). In the case of the preferred welfare index, this reflected the fact that most of the targeting errors (exclusion and inclusion) were highly concentrated around the poverty line. Thus, the differences in welfare weights between those receiving and not receiving the transfers were insufficient to make much difference to the overall welfare impact.

Allowing for the fact that the estimated welfare indices are subject to sampling error, the authors find that there are significant welfare losses associated with different targeting indicators. The asset-based index and the food share index showed the highest welfare losses relative to all other targeting indicators examined by this paper. Although there may be room for improvement in the construction of a "gold standard" consumption indicator, the authors argue that it was not obvious that improvements in this direction would overturn their conclusions.

The authors also found that rejecting the hypothesis that there were no welfare losses associated with using the better performing alternative indicators (e.g., reported expenditures or reported income) depended on the extent of aversion to inequality. This result could mean that the profile of consumption and other household characteristics are so different across countries that results are country-specific.

Keywords: consumption, poverty alleviation programs, imperfect targeting, social welfare

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