

For DISCUSSION

## Social Safety Net Primer Series

### The Targeting of Transfers in Developing Countries: Review of Experience and Lessons

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## **Abstract**

This paper presents evidence comparing outcomes by targeting methods from a new, comprehensive compilation of international evidence drawn from journal articles and the “gray literature”. It includes 100 programs from 41 countries.

The median performance over the whole sample is progressive, providing a quarter more resources to the poor than would random allocations. Nonetheless, in over a quarter of the programs considered, outcomes were regressive. The differences in outcomes between methods are small, accounting for only 16 percent of total sample variability. Outcomes are highly variable within a method, accounting for 84 percent of total sample variability. Targeting performance appears to be better in countries with higher incomes and greater voice and accountability. It is also better in countries with higher levels of income inequality.

The comparative results suggest the prime importance of implementation in good targeting. We therefore devote extensive discussion to the practical considerations of implementing the main methods covered – means testing, proxy means testing, geographic targeting, demographic targeting, self-selection and community-based methods. The paper also provides a briefing on the basic conceptual and measurement issues of targeting.

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## 1. Introduction

Reducing poverty requires raising the incomes of those at the bottom end of the income distribution. Government resources are very scarce, however, so it is attractive to concentrate efforts to raise income on some “target group” of poor households or individuals in an attempt to achieve the maximum impact from a given poverty-alleviation budget or, equivalently, to achieve a given impact at least budgetary cost. The attraction holds for many kinds of poverty reduction programs and expenditures, but perhaps, most strongly for the transfer programs that comprise safety nets because these transfers confer a benefit that is largely a private good for the recipient household.

Although there are obvious benefits from targeting, there are also costs that need to be considered. The objective of this paper is to provide a briefing to policymakers and program managers about targeting – to convey what results can be expected, the basic options, and information to help in choosing among them and to implement the chosen option to good advantage. In section 2, we present briefly the basic principles of targeting. In section 3, we sketch our nomenclature for targeting mechanisms. These two sections can be skipped by the targeting *cognoscenti*. In section 4, we summarize the evidence on targeting outcomes from the large body of international evidence compiled for this paper. In Section 5, we draw more detailed lessons about the pros and cons and discuss some of the “how to’s” of the predominant methods. Section 6 summarizes and concludes.

## 2. The Principles of Targeting

Targeting is a tool that has costs and benefits. Decisions about whether to target, how precise to be and what method to use will depend on the relative size of these costs and benefits, which will vary by setting. This is the first tradeoff in targeting. The second concerns targeting errors – who is mistakenly admitted or excluded from the program by the procedures used for targeting.

### 2.1 *The Benefit of Targeting*

The motivation for targeting arises from:

- a limited poverty alleviation budget (i.e. a budget constraint);
- the trade-off between the number of beneficiaries covered by the intervention and the level of transfers (i.e. an opportunity cost); and
- the desire to maximize the reduction in poverty or, more generally, the increase in social welfare (i.e. an objective).

These three features of the policy environment imply that there is potentially a return to targeting transfers at poor households, namely, that one can increase the amount of the transfer budget going to those households that are deemed to be most in need of transfers.

Imagine an economy with 100 million people, of whom 30 million are poor. The budget for a transfer program is \$300 million. With no targeting, the program could give everyone in the population \$3. If the program could be targeted only to the poor, it could give each poor person \$10 and spend the full budget. Or it could continue to give each poor person \$3 for a budget of only \$90 million. Thus targeting is a means of increasing program efficiency by increasing the benefit that the poor can get within a fixed program budget.

## ***2.2 The Costs of Targeting***

The scenario just outlined to illustrate the benefits of targeting assumed that it was possible to distinguish who is poor and who is not. In fact, there are costs to acquiring information about who is needy. These costs can be classified as:

- *Administrative Costs:* These costs include the costs of collecting information, for example, conducting means testing of households or conducting a survey on which to base a poverty map. The presence of these costs means that less of the budget is available to be distributed to beneficiaries. In general we expect that the costs of gathering information to target will increase with the precision of targeting.

It is possible that if finer targeting means that the total number of beneficiaries declines, the total administrative costs will decline, either absolutely or a share of total costs. This would result from two forces. First, a targeted program may serve a smaller number of people so the overall scope of machinery to deliver benefits could be smaller. Second if the tighter targeting allows a larger benefit per client, the share of administrative costs will be lower. Imagine a program that costs \$1 per household to gather information about targeting, and \$5 per household for the administrative costs of delivering the benefit, which is worth \$100. If the program serves 1 million client households, then the total administrative cost would be \$6 million, the total cost \$106 million, and the share of administrative costs about 6 percent. Then imagine that it moves to much finer targeting, say from demographic targeting to a means test. The cost of gathering information for targeting might rise to \$5 per household. The cost of getting the benefit into the client's hands remains \$5. But now the program serves only 250,000 families, so administrative costs are \$2.5 million, lower than previously. If the benefit is kept at \$100 per family, then the total budget will be 27.5 million and the share of administrative costs about 10 percent. If some of the resources freed through the finer targeting are used to raise the benefit to \$200 per family, then the total cost would be \$52.5 million and the share of administrative costs would be about 5 percent, lower in both absolute terms and as a share of the total program budget.

- *Private Costs:* Households also incur private costs involved in taking up transfers. For example, workfare programs involve households incurring an opportunity cost in terms of forgone income opportunities. Queuing involves a similar, though usually much smaller, opportunity costs. Households may also face cash costs for obtaining certifications required for the program (a national identity card, proof of residency, of

disability, etc.) and for transportation to and from program offices. Private costs are often overlooked when evaluating programs, but may be quite important, especially when self-selection methods are used or when the program is conditioned on certain actions by household members.

- *Incentive Costs*: These are often referred to as indirect costs. They exist because the presence of eligibility criteria may induce households to change their behavior in an attempt to become beneficiaries. For example, a program open only to those below a minimum income may cause some households to reduce their labor supply and thus their earned incomes. This is one of the reasons why transfers that guarantee a minimum income irrespective of earnings are not considered desirable. Other examples of such “negative incentive effects” are higher consumption of subsidized commodities, crowding out of private transfers, relocation/migration, or devoting resources to misreporting. It should also be recognized that indirect effects may also be positive, e.g. when transfers are conditioned on household behaviors such as the enrollment of children in school or attendance at health clinics.

Though labor dis-incentive effects are an important concern in many OECD countries’ welfare programs, they may be less important in developing country safety net programs. First, direct means tests are rare. Second, transfers are rarely graduated. Thus, only those around the cut-off point have an incentive to change their behavior so as to be deemed eligible for transfers. The number of people affected is lower, the smaller is the transfer. Moreover, benefit levels are usually low, implying that recipients will maintain a strong incentive to choose additional earnings over additional leisure when they have a choice. Nonetheless, in principle, such labor-disincentive effects cannot be ignored or assumed not to exist.

One way of minimizing disincentive effects would be to keep the population relatively uninformed about the detailed eligibility criteria being used, e.g. letting them know only that it is based on some concept of poverty but not the details of how this is actually measured. But such lack of transparency may in itself be seen as an undesirable characteristic of program design. Basing eligibility on information or characteristics collected prior to the program is another way to eliminate the problem (i.e. assuming that households were not answering strategically in anticipation of a program), the need for periodic re-certification eventually will require the use of updated information on characteristics so that the incentive problem will eventually arise.

- *Social Costs*: These costs may arise when the targeting of poor households involves publicly identifying households as poor, which may carry with it a social stigma. If the poorest households do not take-up the transfer as a result then this decreases the effectiveness of the program at getting transfers into the hands of the poorest. Such issues obviously take on additional importance when one appeals to concepts of poverty such as Sen’s “capabilities”.

- *Political Costs*: Excluding the middle classes may remove broad-based support for such programs and make them unsustainable if voter support determines the budget and is in turn determined by whether the voter benefits directly from the program. On the other hand, efficient targeting to ensure that only those in need receive benefits may actually increase political support from those who support it based on its indirect benefits to them of reducing poverty (such a feeling of social justice, or being hassled by fewer beggars, or lower likelihood of property theft or increased political stability). And of course political support may come from interest groups who are suppliers to the program or advocates for its beneficiaries – farmers’ and teachers’ unions may support school lunch programs on these grounds.

The relative importance of the above costs will obviously differ across targeting methods but also across different socio-political environments. For example, it is likely that administrative costs are more important when individual or household assessment is used. Incentive costs are likely to be less important when categorical targeting is used. Private costs are likely to be more important when self-selection methods are used. The nature and importance of social costs may differ widely with the form of self-selection inherent in the program design. But all of these costs need to be considered when evaluating the targeting effectiveness of programs.

### **2.3 Tradeoffs in Targeting Errors**

In practice program officials do not have perfect information about who is poor because this information is difficult, time consuming and costly to collect. Thus, when basing program eligibility on imperfect information, they may mistakenly identify a non-poor person as poor and therefore admit him to the program (an error of inclusion) or do the reverse, i.e. mistakenly identify a poor person as not poor and thus deny him access to the program (an error of exclusion). The analysis is often presented in terms of a two-by-two matrix (Table 2.1). Consider a case where there is a total of 100 households and a poverty line that implies that 50 of these are classified as poor. Now consider a program that gives benefits to 50 households selected according to imperfect targeting criteria. Of these, 40 are poor (i.e. have incomes below the poverty line) and 10 are non-poor (i.e. have incomes above the poverty line). Both the 40 poor households included in the program and the 10 non-poor households excluded are treated as successful targeting. The 10 poor households excluded are treated as "errors of exclusion" while the 10 non-poor households are seen as "errors of inclusion". These imply common under-coverage and leakage rates for the program of 20 percent.<sup>1</sup>

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<sup>1</sup> The fact that undercoverage and leakage rates coincide reflects the fact that the number of persons in the program is equal to the number of poor persons so that the number of persons wrongly excluded will always equal the number of persons wrongly included. If the number of eligible persons is greater (less) than the number of poor persons then this will inevitably tend to increase (decrease) leakage and decrease (increase) undercoverage rates. But this mistargeting is in a sense due to the wrong program size (i.e. the number of eligible persons being different from the number of poor persons) as opposed to imperfect targeting *per se*. For example, if the number of eligible persons was 40 then even with perfect targeting undercoverage would still be 10 percent.

**Table 2.1. Calculating Leakage and Under-coverage Rates**

	Welfare Status of Households		Total
	<i>Poor</i>	<i>Non-Poor</i>	
Households excluded from program	10 (U=20%) (Exclusion error)	40 (Successful targeting)	50
Households included in program	40 (Successful targeting)	10 (L=20%) (Inclusion error)	50
<b>Total</b>	50	50	100

Note: U and L denote under-coverage and leakage rates, respectively.

In general actions taken to reduce one kind of error may cause the other to increase. Introducing more stringent rules in order to identify need so as to screen out the non-poor will, for example, also make it more difficult for the poor to provide the necessary information. Thus, while meant to reduce errors of inclusion, it will also raise errors of exclusion. Similarly, raising the cut-off point in order to reduce undercoverage will also tend to increase leakage.

In practice, the inevitability of targeting errors affects the decision about whether to target, how precisely to target and the method used for targeting. First, it reduces the potential benefit; the illustration in section 2.1 assumed perfect targeting and thus exaggerated the benefit from targeting. Second, the fact that targeting errors will occur, and are generally inversely linked, means that policymakers must decide how well they can tolerate each. An error of inclusion wastes program resources (e.g. by leaving less for “poor” households or by increasing the budget required to have the same poverty impact) and thus makes the program inefficient. An error of exclusion leaves that person without help and makes the program ineffective at reducing poverty. Both are undesirable, and different policymakers may have different views about which is worse. In the formal targeting literature, the tradeoff as to which is more acceptable is often made by simulating or measuring the impact of the various targeting options of a transfer program on a general poverty measure (such as the headcount or poverty gap). The option that lowers poverty the most for a given budget (or keeps it the same for a reduced budget) is preferred.

One of the shortcomings of the simple error of inclusion/exclusion analysis is that it discards much distributional information. Surely it is better to give a transfer to someone just over the poverty line than to someone at the very top of the distribution, but both count equally as errors of inclusion. Similarly benefits to the very poorest as opposed to those just below the poverty line count equally as success cases, though the former is presumably more desirable. A very simple way of partly mitigating the problem is to



present information on the distribution of participation and benefits over the whole distribution (either continuously or by decile or quintile). For a discussion of the relative strengths and weaknesses of alternative methodologies, see Annex 1.

### 3. Menu of Targeting Options

Targeting methods all have the same goal – to correctly and efficiently identify which households are poor or which are not. In order to understand the effectiveness of these approaches, it is useful to distinguish between “methods” and “actors”. Methods refer to the approaches taken to reach a target group. Typically, these take one or more of three forms: *individual/household assessment*; *categorical targeting*;<sup>2</sup> and *self-selection*. Actors refer to the identity of the individuals who perform two roles: the implementation of the targeting method; and the subsequent implementation of the intervention.

*Individual/Household Assessment* is a method in which an official (usually but not always, a government employee) directly assesses, household by household or individual by individual, whether the applicant is eligible for the program. It is the most laborious of targeting methods. The gold standard of targeting is a verified means test that collects (nearly) complete information on a household’s income and/or wealth and verifies the information collected against independent sources such as pay stubs, or income and property tax records. This requires the existence of such verifiable records in the target population, as well as the administrative capacity to process this information, and to continually update it, in a timely fashion. Consequently, this standard is sought, though not always achieved, largely in OECD countries, but rarely in developing or transition countries. Absent the capacity for a verified means test, other individual assessment mechanisms are used. Three common ones are simple means tests, proxy means tests and non-statistical assessments.<sup>3</sup>

Simple means tests, with no independent verification of income, are not uncommon. A visit to the household by a program social worker may help to verify in a qualitative way that visible standards of living (which reflect income or wealth) are more or less consistent with the figures reported. Or the social workers’ assessment may be wholly qualitative, taking into account many factors about the household’s needs and means, but without having to quantify them. These types of simple means tests are used for both direct transfer programs and for fee waiving programs, with or without the visit to the household. Jamaica’s food stamp program, implemented in the 1980s, is an example.

Proxy means tests are being instituted in a growing number of countries, though they are still relatively rare. We use the term to denote a system which generates a score for applicant households based on fairly easy to observe characteristics of the household such

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<sup>2</sup> Collectively, these two methods are often referred to as forms of *administrative targeting*.

<sup>3</sup> A fourth example is the assessment of nutritional status, such as low weight for age or growth faltering. They can be used to target increased medical care or transfers in cash or kind, such as food during disaster relief. Such programs often operate in conjunction with the health system. We do not review them here.

as the location and quality of the dwelling, ownership of durable goods, demographic structure of the household, and the education and, possibly, occupations of adult members. The indicators used in calculating this score and their weights are derived from statistical analysis (usually regression analysis or principal components) of data from detailed household surveys of a sort too costly to be carried out for all applicants to large programs. The information provided by the applicant is usually partially verified by either having the information be collected on a visit to the home by a program official (as in Chile's CAS – SUF (unified family subsidy) or by having the applicant bring written verification of part of the information to the program office (as done in Armenia).

Non-statistical assessments are methods used to assess individual eligibility without recourse either to the calculation of household income or wealth or to the calculation of a score. For example, eligibility for social assistance in Uzbekistan is partly determined by local committees called “Mahallas” who draw on local information about household income.

*Categorical Targeting* refers to a method in which all individuals in a specified category – say a particular age group or region – are eligible to receive benefits. This method is also referred to as statistical targeting, tagging or group targeting. It involves defining eligibility in terms of individual or household characteristics that are fairly easy to observe, hard to falsely manipulate, and correlated with poverty. Age, gender, ethnicity, land ownership, demographic composition or geographical location, are common examples that are fairly easy to verify. Age is a commonly used category, with cash child allowances predominant in transition countries, supplemental feeding programs for children under five common in poor countries, and non-contributory pensions for the elderly common in many places. Geographic targeting is perhaps even more common, often used in tandem with other methods. Unemployment or disability status is somewhat harder to verify, but cash assistance to these groups may be categorically targeted as well.

Under *self-selection*, the program is open to all (i.e. universal eligibility) but the design involves dimensions that are thought to encourage the poorest to use the program and the non-poor not to do so.<sup>4</sup> This is accomplished by recognizing differences in the private participation costs between poor and non-poor households. For example, this may involve: (i) the use of low wages on public works schemes so that only those with a low opportunity cost of time due to low wages or limited hours of employment will present themselves for jobs; (ii) the restriction of transfers to take place at certain times with a requirement to queue; (iii) the transfer of in-kind benefits with “inferior” characteristics (e.g. low quality wheat or rice); (iii) or the location of points of service delivery (ration stores, participating clinics or schools, etc.) in areas where the poor are highly concentrated so that the non-poor have higher (private and social) costs of travel. Universal food subsidies can be viewed as a form of self-selection since they are universally available and households receive (more) benefits by consuming (more of) the commodity. In practice households can often determine not just whether or not to

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<sup>4</sup> Note because there are always some actions (and therefore costs) required of beneficiaries in order to register for and collect a benefit, strictly speaking all programs are self-targeted in some degree.

participate, but also the intensity of their participation. Tunisia's reformed milk subsidy program, whereby milk subsidies are higher for reconstituted milk in less convenient ½ litre containers is an example of a self-targeted intervention, as is a public works program in Maharashtra State, India called the Employment Guarantee Scheme.

Whereas methods refer to “how” targeting is undertaken, actors refer to “who” targets and “who” implements these interventions. Actors can include central government officials, lower state, municipality or district level officials, private sector contractors and community members such as teachers, health clinic staff, and elders. Deciding whether to decentralize both the identification of beneficiaries, as well as the provision of the program, will hinge on several factors, including: which actors can provide the most cost-effective source of information on individual, household or locality circumstances; which actors can deliver the intervention most cost-effectively; and whether different actors have the incentive to target and implement the intervention in the manner desired by those who fund the program.

In recent years, targeting, or implementation, has sometimes been decentralized to local communities. Under the rubric of *community based-targeting*, a community leader or group of community members whose principal functions in the community are not related to the transfer program will decide who in the community should benefit and who should not. School officials or the parent-teacher association may determine entry to a school-linked program. A group of village elders may determine who receives grain provided for drought relief. Or special committees composed of common community members or a mix of community members and local officials may be specially formed to determine eligibility for a program. The idea is that local knowledge of families' living conditions will be much more accurate than what a means test conducted by a government social worker or proxy means test could achieve.

In reviewing this menu of targeting options, policy-makers should be mindful of two important considerations. First, individual targeting methods are not mutually exclusive and can be used in different sequences. A child allowance (categorical targeting) may be means tested. Subsidized coarse grain (self-targeting) may be available for sale only in food shops in poor neighborhoods (geographic targeting). In fact, the use of a single targeting method is unusual; 70 per cent of the interventions described in the next section used two or more methods. Second, when assessing whether a particular intervention reaches its intended beneficiaries, it is important to be cognizant of four dimensions: i) the type of interventions chosen – for example, a food-for-work program will, by design, exclude poor people who are physically unable to work; ii) the targeting method chosen; iii) the identity of the actor who undertakes this targeting; and iv) the identity of the actor who provides the intervention.

## 4. The International Evidence

### 4.1 Data

While there is a fairly rich literature on targeted programs, much of it documents single programs. Even comparative pieces tend to cover either a single region (eg. Grosh, 1994, for Latin America and the Caribbean; Braithwaite, Grootaert and Milanovic, 2000 for Eastern Europe and Central Asia;), or method (Bigman et al, 2000 on geographic targeting), or intervention (Rawlings, Sherburne-Benz and van Domelen, 2001 on social funds). Consequently, it is difficult to make broadly valid quantitative statements about the effectiveness of different targeting methods or to draw policy-relevant lessons.

This section presents an overview of empirical evidence on targeting in low and middle-income countries in Latin America and the Caribbean, Eastern Europe and the Former Soviet Union (FSU), the Middle East and North Africa, Sub-Saharan Africa and South and East Asia.<sup>5</sup> It includes those programs with the following characteristics: (1) their principal objective is poverty reduction; (2) documentation on the program or intervention contains, at a minimum, information on the targeting method used; and (3) they are relatively recent (generally, but not always, from 1985-2000). Details on individual programs are found in Coady, Grosh and Hoddinott (2001).

Interventions with poverty reduction as their principal objective included: ‘welfare’ payments – cash or in-kind transfers; non-contributory pensions; targeted price subsidies (principally food and housing; and also includes food stamps and ration shops); public works; and social funds. Focusing the review in this way necessarily means excluding a number of programs or interventions that may, in some cases, be targeted, and may have poverty reduction as one of their objectives. Thus, excluded are: ‘occupationally based transfer schemes’ such as formal sector unemployment insurance or occupational old age or disability pensions (here, the principal mechanism that determines eligibility and benefit levels are employment and contributions history rather than current poverty status); credit and micro credit schemes (although these are often targeted, they are motivated, in large part, by credit market failures); supplementary feeding programs based on clinical measurements of malnourishment in children (partly because, by design, they are highly unlikely to include any child who does not meet criteria for inclusion and partly because our initial foray into the vast literature on this type of intervention did not yield studies that satisfied the criteria described above); most short-term emergency aid (because although this has a clear poverty focus, and is often targeted by need, the time scale on which it operates typically precludes an assessment of the distribution of the benefits).

In reviewing this information, it is important to remember that the sample of interventions is non-random. Because most studies of targeting do not appear in peer-

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<sup>5</sup> We would like to continue to update this bibliography as new studies become available. If you know of studies that document targeting outcomes and methods for the kinds of programs described here please send details to Margaret Grosh at [Mgrosh@worldbank.org](mailto:Mgrosh@worldbank.org). Studies that have information on administrative costs and details of implementation are especially valued.

reviewed journals, the construction of our database relied heavily on searches of the “gray literature”, web searches and canvassing individuals active in this field for information on interventions that were targeted, that had some measure of targeting outcomes and had been written up in the catalogued English language literature that we were able to access. Programs are more likely to be written up this way if one or more of the following features apply: it is from a country with a household survey that measures consumption and participation in government programs; it is in a country with a culture of evaluation as part of decision-making; it receives funding from an international agency that requires measurement of outcomes; it is a program that by virtue of methods or setting is deemed attractive by analysts and editors.

We suspect that programs using community based methods and agents are under-represented. These are often only locally funded and the methods chosen when there is poor data and low administrative capacity, features which all reduce the likelihood of an evaluation being done and finding its way into the international literature. In addition to being few in our sample, we suspect that those we have may perform better than average (for example, if those that seemed successful were those that drew the attention of evaluators). For similar reasons, it is likely that we under-represent the literature on public works in sub-Saharan Africa. Proxy means tests are, on the other hand, well represented, with a large share of all such programs in the world showing up in this sample.

Lastly, note that some programs described here have been reformed or in some cases eliminated since the studies of them were written. The lessons from how the old versions of programs worked are still valid experience to guide lessons on program design and implementation. But the sketches of programs provided both here and in Section 5 will no longer reflect actual practice in the program or country.

Tables 4.1 through 4.3 provide some basic descriptive information on the distribution of interventions and their targeting methods. Table 4.1 explores the distribution of targeting methods. Note that many intervention types use more than one method, so totals will be greater than the sum of programs. There are some marked differences by region. A legacy of the central planning era in ECA has been an extensive administrative system that is suited to the individual assessment of individual circumstances. This, together with a distribution of income that, at least at the time of transition, was relatively equal, has meant that targeting in this region is based either on some form of individual assessment or individual characteristic such as age. Reliance on food subsidies explains why self-targeting based on consumption patterns is the dominant targeting method in MENA. South Asia is notable for its extensive use of geographical targeting as well as a relatively high reliance on self-selection based on work or consumption. LAC countries also use geographical targeting extensively, but this is more often accompanied by either direct individual assessment (i.e. means or proxy means testing) or by targeting children. The small number of documented programs for sub-Saharan Africa and East Asia and the Pacific show more mixed patterns.

Table 4.2 examines the distribution of interventions by geography and country income levels. Interventions fall into three broad categories: direct transfers (cash, near cash transfers such as food stamps and ration cards that entitle the holder to free or subsidized food or other goods, food); subsidies and public works. In some regions, a particular intervention type dominates: cash transfers in Eastern Europe and the former Soviet Union; food subsidies in the Middle East and North Africa; near cash transfers in South Asia. By contrast, there is a wider mix of reported interventions in Latin America, in sub-Saharan Africa and in East Asia. As we move from poorer to richer, there is evidence of a reduced reliance on near-cash transfers and, to some extent, also on public works programs where job creation is the principle objective. Conversely, there is increased use of pure cash transfers and possibly food subsidies.

Table 4.3 cross-tabulates targeting methods by type of intervention. While certain program types are synonymous with certain targeting methods, most also use a combination of methods, presumably because there is synergy from the perspective of targeting efficiency. Public works programs typically use self-selection based on low wages and a work requirement, and also often require additional rationing of employment using categorical targeting if demand exceeds supply at the wage paid. Similarly with social funds, which are also often demand driven and therefore have an element of community self-selection. Food subsidies are self-targeted based on consumption patterns. Cash transfers are most likely to have some form of individual assessment, but are also often conditioned on other characteristics (such as age in the case of pensions or child benefit).

#### ***4.2 Indicators of Targeting Performance***

In order to compare the performance of the different targeting methods used in the range of programs considered in our analysis, we need a comparable performance indicator for each program. As is always the case in such “meta” analyses, the definitions, methods and presentations in the original studies vary in ways that make it difficult to assemble such a single summary performance indicator (see Box 1 for a plea for uniformity and Annex 1 for a detailed discussion of alternatives for measuring targeting performance). Incidence and participation rates may be reported over the full welfare distribution; for the poorest 10, 20 or 40 percent of the population; or for a poor/non-poor classification that differs by country. Other studies report none of these measures, but use other less common ones. And, of course, the measure of welfare used is not always strictly comparable from study to study. Thus we are faced with how best to compare targeting performance outcomes using data that are not strictly comparable.

Generally, the various studies that are catalogued in our bibliography provide information on at least one of the following indices:

- The proportion of total transfers received by households falling within the bottom 40, 20 or 10 percent of the national income distribution.

- The proportion of total transfers going to “poor” households, where the poor are defined in terms of some specified part of the welfare distribution (e.g. falling in the bottom 35 percent of the income distribution).
- The proportion of beneficiaries falling within the bottom 40, 20, or 10 percent of the national income distribution.
- The proportion of beneficiaries classified as poor, where the poor are defined in terms of some specified part of the welfare distribution.

Ideally we would like to know the proportion of total transfers received by households falling within different centiles (40<sup>th</sup>, 20<sup>th</sup>, 10<sup>th</sup> and so on) of the national income distribution. This is a better measure than the proportion of beneficiaries by centile because in the case of the latter, we do not necessarily know anything about the levels of transfers. These two measures – proportions of total transfers and proportions of beneficiaries – are only equivalent when transfer levels are uniform across beneficiaries.

Given that no single common measure of targeting performance is available, we have constructed a measure based on a comparison of actual performance to a common reference outcome, namely, the outcome that would result from neutral (as opposed to progressive or regressive) targeting. A neutral targeting outcome means, for example, that each decile receives 10 percent of the transfer budget or that each decile accounts for 10 percent of the program beneficiaries. The indicator used in our analysis is constructed by dividing the actual outcome by the appropriate neutral outcome. For example, if the bottom 40 percent of the income distribution receive 60 percent of the benefits then our indicator of performance is calculated as  $(60/40)=1.5$ , so that a higher value is associated with better targeting performance. A value of 1.5 means that targeting has led to the target group (here those in the bottom two quintiles) receiving 50 percent more than they would have received under no (or neutral or random) targeting. Alternatively, if 50 percent of transfers go to poor households and 35 percent of households are classified as poor then our indicator would equal  $(50/35)$  or 1.43. This indicates that the poor receive 43 percent more transfers than they would have under neutral targeting. It should be obvious that a value greater than one indicates progressive targeting, less than one for regressive targeting, with unity denoting neutral targeting. Note, however, that such an indicator cannot be calculated for the second and fourth categories above when we do not know where in the distribution of income the poverty line is drawn. Note also that our performance indicator evaluates performance in relation to different parts of the income distribution (e.g. the bottom 40 percent of households for some programs and the bottom 20 percent for others) and it may be, for example, that targeting the “severely” poor is more or less difficult than targeting the “moderately” poor.

The performance indicator used in the analysis below is based on a lexicographic selection process among the available incidence indicators based on the different “target groups”. Where it is available, we base performance on the proportion of benefits accruing to the bottom two quintiles. Where this is not available, we base it on the proportion of benefits accruing to the bottom quintiles, benefits to the bottom decile and lastly, the share of program benefits received by individuals deemed to be below a poverty line. As a shorthand, we will denote this as measure  $\alpha$ , the Greek letter alpha.

This yields a measure of targeting performance for 67 programs found in 30 countries. As a check on the robustness of our work we calculate (but for editorial parsimony only selectively report) results from an alternative measure, when we begin with benefits to the bottom decile, the bottom quintile, the two bottom quintiles and lastly, the share of program benefits received by individuals deemed to be below a poverty line. We refer to this second measure as  $\omega$ , the Greek letter omega.

It is not clear *a priori* which is the better measure.  $\omega$  accounts better for the presumably harder job of reaching the very poorest which is more socially valuable. But we suspect that the  $\alpha$  measure more closely reflects the goals of more programs. In fact, we find that  $\alpha$  is greater than  $\omega$  in 13 cases, of which 12 fall below the median.  $\alpha$  is less than  $\omega$  in 27 cases, of which 20 fall above the median. Thus the overall variability is lower when  $\alpha$  is used than when  $\omega$  is used. And we can conclude that programs that are well targeted do a good job of reaching the poorest decile as well as the poor generally, whereas those that are badly targeted do less well at reaching the poorest than the not quite so poor.

Finally, the issue of program administrative costs can also be easily incorporated into the above framework (see Annex 1 for more detail).

In conducting the literature review we collated the available evidence on administrative costs, hoping to be able to say something about how these varied by method. Unfortunately, such data were scant. We have some sort of cost data for 27 programs, but both cost and our performance indicator for only 16. Moreover, the cost data too suffer from lack of comparability. Most of the data for Latin America are taken from Grosh (1994) and gives administrative costs as a share of the program budget. These numbers were based on budget or expenditure records for program administration and thus includes only official costs. No attempt is made to determine how much of program benefits are siphoned off due to corruption or theft. In contrast much of the cost data on South Asian programs is constructed from knowing a total budget and having data from a survey sample on the value of benefit received by households. Through appropriate grossing up, a figure for the total cost per dollar of benefit received is calculated. In most cases it appears that corruption and theft contribute more to total program expenses than legitimate administrative expenses, though little is said about these latter. We therefore have only a very limited discussion on costs.

### **4.3 Findings**

#### a) Descriptive results

Table 4.4 lists these 67 programs with our comparable performance indicator, ranked from best to worst targeting performance using the  $\alpha$  measure. There is enormous variation in targeting performance, ranging from 0.28, for VAT exemptions on fresh milk in South Africa, to 4, for the Trabajar public works program in Argentina. The median value of  $\alpha$  is 1.23, so that the “typical” program transfers 23 percent more to the target group than would be the case under no targeting. (The median  $\omega$  value is 1.25.) However, a staggering 19 of the 67 programs – more than a quarter -- are regressive, with



an a measure less than one. In these cases, a random selection of beneficiaries would actually provide greater benefits to the poor.

It is instructive to focus on the best and worst ten programs. The worst ten have a median score of only 0.58, ranging from 0.28-0.79, and are mainly from sub-Saharan Africa and the Middle East and North Africa, with three from South Africa. Six out of the ten are food subsidy programs, and three of the remaining four programs involve cash transfers. It is also noticeable that only two of the programs use either means or proxy-means targeting methods, none of them are geographically targeted, and they come from across the income spectrum. The top ten have a median score of 2.49, ranging from 2.0-4.0, and are mainly from Latin America and the Caribbean or Eastern Europe and Central Asia. Again, six out of the ten involve cash transfers and three are targeted public-works-cum-social-funds programs. Nine out of the ten make use of means, proxy-means, or geographic targeting, and eight out of the ten are in upper-middle income countries. The fact that cash-transfers feature prominently in both the best and worst ten, and that public works programs are located right above the worst ten as well as one being in the top ten (the “winner”, Trabajar), highlights the possibility that variations in targeting performance may reflect poor implementation rather than poor potential for the program *per se*. Also, the dominance of upper-middle income countries among the best ten programs suggests that characteristics correlated with income are important determinants of targeting performance.

Figure 4.1 provides some descriptive information on the 25<sup>th</sup> percentile, median and 75<sup>th</sup> percentile of the a performance indicator by region and country income level. We use the 25<sup>th</sup> and 75<sup>th</sup> percentiles rather than the best and worst programs in the category to avoid undue focus on outliers, either good or bad. Generally, targeting performance is better in Latin America than in other regions. However, the more striking feature is the enormous variation in performance within regions and income levels. The only exception to this pattern of variability is the Middle East and North Africa which is characterized by relatively little difference between the 25<sup>th</sup> and 75<sup>th</sup> percentiles. As Tables 4.1 and 4.2 have shown, in this region the dominant form of anti-poverty intervention is subsidized food, that is a transfer based on self-selection of a consumed item.

Figure 4.2 provides some descriptive information on the 25<sup>th</sup> percentile, median and 75<sup>th</sup> percentile of the a performance indicator by targeting method. Figure 4.3 provides the same information for the ? measure. As noted earlier, it shows more variability. Targeting interventions to the elderly and consumption appears to do relatively poorly, and targeting by the community appears to do relatively well, but even within these methods, there is enormous variability in performance just as there is across other methods. The only statistically significant difference among the means by method is for self-selection by choice of food commodity, which performs poorly.

One way of exploring further the source of variation in targeting outcomes is by using a Theil inequality index. The Theil index takes on values between 0 and 1, with lower numbers corresponding to – in this case - less dispersion in outcomes. A desirable feature of the Theil index is that it is sub-group decomposable; that is, if we group our data by

some characteristic (say region or targeting method) that we can allocate variation in targeting across these programs into two categories: that due to variations within each group and that due to variations across groups.

Theil indices for three different groupings, type of program, type of targeting and region are presented in Table 4.5. When programs are grouped by targeting method (i.e. according to whether they use geographic, means/proxy means, both, or other targeting methods) we find that the variation in average performance between these groups explains only about 16 percent of the total variation. Grouping according to program type, we find that variation in average performance between programs explains only 19 percent of the total variation. Grouping by region, we find that it explains only 28 percent of the total variation. Grouping by income group, we find that it explains around 16 percent of the total variation. Grouping according to how the performance indicator was calculated, we find that it explains around 22 percent of the total variation, more than the amount explained by between-method variation!

Thus, the key feature of Tables 4.4 and 4.5 as well as Figures 4.1, 4.2 and 4.3 is that variation within method type is responsible for most of the variation in targeting performance. One way of interpreting these results is in terms of implementation effectiveness. No matter how well one chooses among methods or programs, effectiveness of implementation is the key factor in determining targeting performance. This point is further illustrated by noting that raising the performance of all programs with the same targeting method and with performance below the method median to the median for that method, increases the average targeting performance from 1.36 to 1.51, a return of 14 percentage points. The equivalent improvement for all program types will increase it from 1.37 to 1.54, a return of 17 percentage points.

#### *b) Multivariate results*

Although factors other than choice of method or program may be relatively large, this does not mean that these choices are unimportant. To get an idea of the importance of these choices, we now present the results of a series of regression, which identify how performance varies systematically across these choices. Most regression analysis uses least squares regressions which generates results that are interpreted relative to the mean of the variable being examined. Here, however, we take a slightly different approach, estimating median regressions, which express differences in performance in terms of differences in medians.<sup>6</sup> This is an attractive approach because the median is considerably less sensitive to outliers, unlike the mean, an especially important consideration when working with small sample sizes.

Before presenting these results, it is important to be aware of some limitations of this work. First, recall that the data we have collated are only a sub-sample of the hundreds of anti-poverty interventions that exist. Second, we could only calculate our performance

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<sup>6</sup> Technically speaking, we estimate a quantile regression centred at the median with standard errors obtained via bootstrap resampling with 50 repetitions to correct for heteroscedasticity. Increasing the number of repetitions does not appreciably alter the standard errors.

indicator for two-thirds of this sub-sample. These observations when taken together point to the possibility of “sample selection bias”, that is to say that there may be certain characteristics of these programs – for example, the fact that they were evaluated and documented – which are themselves associated with our measures of targeting performance. A good example of this possibility relates to community targeting. Our sample is only a fraction of the studies listed in Conning and Kevane (2001); it could well be that only successful interventions using community targeting have been well documented. Third, because measured performance may be systematically related to the underlying incidence indicator on which it is based (ie our performance measures are based on benefits going to the bottom two quintiles in some cases, bottom quintiles in others etc), in the regressions that follow we take this into account.<sup>7</sup> Lastly, targeting methods are themselves choices, they are not “exogenous” or “pre-determined”. Consequently, it is incorrect to treat these results as causal relations. Rather, in a statistical sense, they are measures of correlation or association.

We begin by building on the possibility that variations in implementation account for much of the observed variation in targeting performance. To what extent is this related to implementation capacity within a given country? We consider four proxies for this capacity: income, voice, government effectiveness and inequality. Income is measured in terms of GDP per capita in PPP dollars. The hypothesis is that as a country becomes wealthier, it acquires both the human and physical capital needed to design a well-targeted intervention. Our measures of voice and governance are taken from the mean values reported in Kaufmann, Kraay and Zoido-Lobaton (1999). Kaufmann, Kraay and Zoido-Lobaton compile subjective perceptions regarding the quality of governance in different countries using sources such as polls of experts, commercial risk rating agencies and cross-country surveys. Voice, perhaps more accurately described as ‘voice and accountability’ is a composite measure based on aspects of political processes, civil liberties and political rights and thus captures the extent to which citizens participate in the selection of their governments as well as the extent to which citizens and media can hold governments accountable for their actions. Government effectiveness combines perceptions of the quality of public service provision, the competence of civil servants and the credibility of governments’ commitment to policies. Inequality, as measured by country-specific Gini coefficients, is not a direct measure of capacity. However, as explained in section 2, targeting requires variation across individuals and it is plausible that identifying potential beneficiaries is easier when differences across individuals are greater.

Table 4.6 reports a series of results based on these approximations for implementation capacity. Columns (1) through (4) are based on entering these characteristics individually. This shows that targeting performance improves with country income, with greater government accountability and is higher in countries with higher levels of

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<sup>7</sup> We do so by including a series of dummy variables. In preliminary estimates, we used a full set denoting whether the performance measure was based on shares accruing to the bottom 10 percent, 20 percent, 40 percent or poor. Generally, only the dummy variable for shares accruing to the bottom 10 percent had any real impact and, in order to conserve degrees of freedom, only it was included in the final set of regressions.

inequality. Including all characteristics, as in Column (5), reduces the explanatory power of these individual variables, reflecting the fact that in this sample, all these characteristics are highly correlated. This correlation is especially marked between income and inequality, as shown by the loss of statistical significance of income in columns (5) and (6) when inequality is also included. This feature, which arises because almost all our middle income countries are found in Latin America, together with our small sample size and the fact that we have less data on inequality measures than we do on income, means that we are forced to be somewhat selective in the indicators of implementation capacity that we choose. We retain income and voice, as reported in Column (7). Column (8), based on the ? measure of performance tells us that changing our measure of targeting performance does not affect these conclusions.

Table 4.7 reports the results of adding individual targeting methods to the specifications reported in Columns (7) and (8) of Table 4.6. They are grouped by three approaches to targeting described in section 2, individual assessment, categorical targeting and self-selection. The parameter estimates reported in this table are interpreted relative to the median. For example, the negative value for targeting to the elderly tells us that, conditional on income and voice, this form of categorical targeting performs worse than the median value for all other methods of targeting. The value  $-0.302$  indicates that relative to the median value, targeted to the elderly reduces targeting performance by 30.2 percentage points. The number in parentheses is the absolute value of the t statistic associated with this estimate; in this case, it is statistically significant at the 10 per cent level.

Most parameter estimates are statistically insignificant. This is consistent with our claim that variations in implementation, not method itself, account for much of the variability in targeting performance. Somewhat surprisingly, although self-targeted food transfers perform less well than the median, the coefficient is not statistically significant. This arises because of the inclusion of voice in these regressions. The majority of these self-targeted food transfers are found in the Middle East and North Africa, where median scores for voice are considerably lower than elsewhere. When we re-estimate, but remove voice, the negative coefficient for consumption based targeting increases in magnitude to  $-0.33$  and is statistically significant at the 2 percent level.

Two methods are associated with improved targeting performance.<sup>8</sup> Using the community to select beneficiaries more than doubles the share of benefits going to the

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<sup>8</sup> Although categorical targeting towards children does not, in itself, improve targeting, it does so when combined with some form of conditional action, such as ensuring that a child receives primary health care or schooling, as is done in Honduras' PRAF program. We are cautious, however, about the power of conditioning in targeting (though it has obvious and sometimes large benefits for human capital formation). First, all of the conditioned programs use other targeting methods as well as the age criteria and these other methods may account for the better outcomes. Second, we only have outcomes for five conditioned programs, all of which are in countries (Bangladesh, Chile, Honduras, Jamaica, Mexico and Nicaragua), in which family sizes vary across the income scale

poor, though again the small number of observations and the selective nature of the sample means that this should be treated cautiously. Use of some form of geographic targeting improves targeting performance.

Do targeting methods work equally well, or equally poorly, in better off or poorer countries, all else held constant? Exploring this question is made tricky because of our relatively small sample size. That said, some information can be gleaned by separating the sample into two groups, where we exclude the poorest third of the sample and the richest third of the sample. Table 4.8 reports the impact of selected targeting mechanisms when we divide our sample into these two parts. The striking result here is that excluding the richest tercile of countries, no targeting method has a statistically significant impact on performance. When we exclude the poorest countries, we find that targeting is improved when geographic methods are used, or when community self-selection is a component of targeting. Means or proxy means testing also improves targeting performance, but the effect is not statistically significant. Conversely, self-selection based on consumption of goods has an adverse impact on targeting performance once we move outside very poor countries. Taken collectively, these results suggest that in poorer countries, implementation rather than choice of method appears to be the dominant feature determining targeting performance. In relatively richer countries, both implementation and choice of method appear to matter.

Lastly, we consider whether certain combinations of method yield improved targeting outcomes. We focus on combining geographical targeting with other types of methods. These results are reported in Table 4.9. The first column is based on the same specification we have been using throughout. It appears that linking geographic targeting to other methods yields little improvement in targeting outcomes. Recall though that this specification also includes a measure of voice and accountability. One might believe that in countries where governments are more likely to be held accountable for their actions, that one might observe, for example, an increased use of geographically targeted interventions. The second column of Table 4.9 thus excludes voice as a regressor. When we do so, we find that geographic targeting together with age-based targeting, a work requirement or community selection is associated with improved targeting performance.

#### ***4.4 Summary***

In summarizing our results, we again stress that although efforts to construction a data base on targeting were exhaustive (or at least exhausting), there are good reasons to believe that it is neither a random sample nor a census of all targeted programs and their impacts. For these reasons, we phrase our conclusions in terms of ‘tendencies’ and ‘associations’ rather than causal relations.

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more than is generally true for the Eastern European countries where many of the non-conditioned demographically targeted programs occur. Thus it may be the strength of the demographic correlate rather than the conditioning that produces good outcomes. In the abstract, conditioning raises transactions costs to the household which would work to raise errors of exclusion but might lower errors of inclusion.

- There appears to be no one dominant targeting method across most regions of the developing world. There are some variations by income level, with categorical and self-selection more common amongst low and low-middle income countries and individual assessment more prominent in middle income countries.
- “Targeting appears to work” in the sense that the median intervention in our data base provides a quarter more resources to the poor than would random allocations. However, in more than a quarter of the cases we considered, targeting was regressive.
- There is enormous variation in targeting performance within each method chosen. In a Theil decomposition, “within” method differences account for 84 percent of total variability; “between” method differences for 16 percent. This implies that the key to successful targeting depends heavily on careful implementation.
- Targeting performance appears to be better in countries with higher incomes and greater “voice and accountability.” It is also higher in countries with higher levels of income inequality.
- Conditional on income and voice, our regression results show that most methods do not seem to improve performance relative to the median, again reinforcing the argument that implementation, rather than method chosen, is the key factor that determines performance. This is particularly marked in poorer countries.
- That said, there are some exceptions to this statement. Use of geographic methods or targeting children with conditional actions required by their parents is associated with improvements in targeting outcomes as does combining geographic methods with targeting to children or via a work requirement.
- Outside the poorest tercile of countries, targeting is associated with improved performance by use of geographic targeting and self-selection by communities and worsened when conditioned on consumption. Means and proxy means testing also works better outside of the poorest countries, though this effect is less well measured.
- It is difficult to achieve a very progressive incidence using universal food subsidies, even when subsidized commodities are chosen carefully, partly because it is difficult to identify strongly inferior goods whose price can be manipulated through well-developed marketing channels. One can only get so much out of subsidizing income inelastic goods.
- Although targeting by communities themselves also appears to improve targeting performance, the small and self-selected nature of the interventions using this method means we should treat this finding cautiously.

### **Box 1: Minimal Desired Reporting for International Comparability**

A frustration in reviewing the current literature on targeting was the difficulty of making international comparisons. This was usually due to the incomparable nature of different measures of targeting performance. Many papers gave results for one of the bottom 10<sup>th</sup>, 20<sup>th</sup> or 40<sup>th</sup> percentile, or even for the whole distribution. Others only reported the share of benefits going to the poor, but without specifying what percentage of the population was poor. Others used sophisticated new aggregate measures such as the extended Gini or new measures invented by the authors for use in a single country, but without the old standard of incidence and participation across the distribution. Since it is always at least a secondary benefit to any study to contribute to the international knowledge in the field (the first benefit may be country-specific policy conclusions), we recommend that any study of targeting include, to the extent that information is available, the following basic information and measures even when the authors also use others.

- *Program Description*: A description of the objectives of the program, the program coverage (e.g. urban, rural, demographic groups), the type of transfer (e.g. cash, food, etc), and the structure and levels of transfers.
- *Targeting Methods*: A detailed description of the targeting methods officially used in the program (e.g. geographic, means, proxy means, or categorical) as well as any information regarding how well these operated in practice.
- *Targeting Agents*: Information on which bodies (e.g. central or provincial governments) is responsible for setting eligibility criteria, collecting and verifying this information, and implementing the program.
- *Targeting Performance*: Information on the incidence of beneficiaries and benefits across deciles (or quantiles) defined in terms of some standard welfare measure as well as a discussion of the construction of this welfare measure. Analogous information on participation rates. This information can be presented based on individual- or household-level observations. It can also be presented in tables showing actual or cumulative shares. If it is presented graphically, it should also be presented in tabular form to avoid consumers off the information having to interpolate numeric values of small print graphs.
- *Program Budget*: Information on the breakdown of the total program budget between transfers to households, illegal leakages and administrative costs. Where possible, program costs associated with the targeting of the program should be identified separately. The overall targeting performance of the program can then be seen as a combination of the incidence of the actual transfers and the share of the program budget absorbed by program costs (see Annex 1 for more details).

## **5. Pros/Cons and Lessons of Methods**

Good targeting requires a sensible choice of method and considerable attention to how to implement it well. This section is meant to help with both of those tasks. Because, as we saw in section 4, there are several targeting options available for several program types and few absolute rules about which targeting method should be used where, both the choice of method and its thoughtful implementation require knowing a great deal about how each method works in general, and variations in how it can work in different circumstances or variants of implementation.

Table 5.1 provides a brief overview of the pros, cons, and suitable circumstances for each targeting method. Then for each we review international experience, how the method works, what determines how well it works, what its costs are likely to be and appropriate circumstances for its use. We take these up in turn for means testing, proxy means testing, geographic targeting, demographic targeting, self-targeting and community-based methods, moving from the most information intensive to the less information intensive methods. Some readers may find that Table 5.1 will help them hone in on a couple of good options to read further about and they will be able to skip or skim the other subsections. Most readers, however, will need to understand the whole panoply of options in a fair amount of detail.

This paper can help benchmark programs against their peers. A good deal of information on lessons from other countries and international good practice is contained in the essays in this section. The final step is in applying that information to a specific program. To do so, we suggest that the program manager ask herself the six questions in Box 5.1 and think about whether any of the practices or examples presented in this section might be useful in the local context.



**Table 5.1: Comparing Targeting Methods**

<b>Means testing</b>		
<i>Definitions and International Experience</i>		
<p>Means testing has three main variants: those with third party verification of income, those in which the applicant provides documents to verify income or related welfare indicators, and those in which a simple interview (either in the program office or in the applicant's home) is used to collect information.</p>		
<i>Pros</i>	<i>Cons</i>	<i>Suitable Circumstances and other comments</i>
<ul style="list-style-type: none"> <li>• In the best of cases, very accurate.</li> </ul>	<ul style="list-style-type: none"> <li>• Requires high levels of literacy and documentation of economic transactions, preferably of income.</li> <li>• Administratively most demanding.</li> <li>• Implies substantial work disincentives.</li> </ul>	<ul style="list-style-type: none"> <li>• High portion of income verifiable OR self-selection and stigma play an important role in limiting applications.</li> <li>• Large benefits.</li> <li>• High administrative capacity.</li> </ul>
<b>Proxy Means Tests</b>		
<i>Definitions and International Experience</i>		
<p>Proxy means test use a handful of easily observable characteristics about a household to calculate a score that indicates how well off the household is. Entry into various programs or the benefit levels are decided based on the household's score. The indicators and weights in the scoring formula are the result of a sophisticated statistical analysis of national household survey data. The indicators usually include location and quality of housing, ownership of durable goods, features of household demographics, human capital and sometimes labor force activity. Proxy means test have been thoroughly evaluated in a small handful of countries; are operational in less than two dozen countries; but very much the sexy new method at present.</p>		
<i>Pros</i>	<i>Cons</i>	<i>Suitable Circumstances and other comments</i>
<ul style="list-style-type: none"> <li>• Verifiable, may allay concerns over politicization or randomness of benefit assignment (especially among program administrators).</li> <li>• Single targeting system may be used for several programs, which maximizes return for fixed overhead.</li> <li>• Uses easy to observe variables strongly correlated with poverty in market economies.</li> <li>• Probably little effect on work effort.</li> </ul>	<ul style="list-style-type: none"> <li>• May seem mysterious or arbitrary to some (especially among clients and critics).</li> <li>• Sophisticated system, requires large body of literate and probably computer trained staff, moderate to high levels of information and technology.</li> <li>• Inherent inaccuracies at household level, though good on average.</li> <li>• Not sensitive to quick changes in welfare, as experienced in a crisis or in some transition countries.</li> </ul>	<ul style="list-style-type: none"> <li>• Reasonably high administrative capacity.</li> <li>• Programs meant to address chronic poverty in stable situations.</li> <li>• Has been used most for cash transfers, often conditioned on use of preventive health care for young children and school attendance for school-aged children. Also for targeting food subsidies and rations, and for rationing entry for subsidized health insurance, for workfare and vocational training.</li> <li>• For large benefits and/or for multiple programs.</li> </ul>

<b>Geographic Targeting</b>		
<i>Definitions and International Experience</i>		
<p>A poverty map is used to determine where a program will operate and to allocate budget within those areas. Some areas may be excluded altogether. Among included areas, the amount of budget per capita will usually be differentiated so that the poorest areas receive more than the less poor ones. Often geographic targeting is used in tandem with other methods. It is very commonly used in all regions and types of programs. New techniques of merging census and survey data are greatly improving the conceptual underpinnings and accuracy of poverty maps. These have been used in a score of countries in the last five years.</p>		
<i>Pros</i>	<i>Cons</i>	<i>Suitable Circumstances and other comments</i>
<ul style="list-style-type: none"> <li>• Administratively simple.</li> <li>• No labor disincentive.</li> <li>• Little stigma.</li> <li>• Easy to combine with other methods.</li> </ul>	<ul style="list-style-type: none"> <li>• Accuracy is only moderate. It depends on correlation of space and poverty and will usually be more accurate for smaller areas, or for services used daily and in person.</li> <li>• May occasion some political infighting for resources.</li> </ul>	<ul style="list-style-type: none"> <li>• A very useful way to allocate budget for services and infrastructure in a pro-poor way.</li> <li>• Useful for selecting the sites (schools, clinics, ration shops, etc.) that will offer subsidized goods or services or where a cash transfer will be an add-on benefit of using the service.</li> <li>• Where administrative capacity low or in conjunction with other methods.</li> </ul>
<b>Demographic Targeting</b>		
<i>Definitions and International Experience</i>		
<p>Demographic targeting is the most common method in our sample of targeting, and most demographic targeting is by age. Child allowances and non-contributory pensions for the elderly are very common in Eastern Europe and the former Soviet Union. Children under five and pregnant and lactating women are eligible for free or subsidized health care or food programs in many countries in sub-Saharan Africa and Latin America and the Caribbean. School aged children are served by a patchwork of scholarships, fee waivers, school supplies, or school lunches, with the latter being more common. May be combined with other methods.</p>		
<i>Pros</i>	<i>Cons</i>	<i>Suitable Circumstances and other comments</i>
<ul style="list-style-type: none"> <li>• Administratively simple.</li> <li>• Politically popular.</li> <li>• No labor disincentive.</li> <li>• Little stigma.</li> </ul>	<ul style="list-style-type: none"> <li>• Not very accurate by itself.</li> <li>• Technicalities of economies of scale and equivalence hotly debated and drive results.</li> </ul>	<ul style="list-style-type: none"> <li>• Registration of age easy and population extensively covered.</li> <li>• For low cost services where a low cost method required.</li> <li>• For services with strong public goods element, so that broad coverage is appropriate, e.g. free preventive health care for infants and pregnant/lactating women</li> </ul>

<b>Self-Targeting</b>		
<i>Definitions and International Experience</i>		
A program, good or service that is open to all, but designed in such a way that take-up for it will be much higher among the poor than the non-poor.		
<i>Pros</i>	<i>Cons</i>	<i>Suitable Circumstances and other comments</i>
<ul style="list-style-type: none"> <li>• No explicit administrative mechanism required.</li> <li>• No labor disincentives.</li> <li>• Work requirements usually result in very good targeting.</li> </ul>	<ul style="list-style-type: none"> <li>• Imposes a transactions cost, sometimes a quite substantial cost on the recipient, which lowers the net value of the benefit.</li> <li>• Stigma may be considerable.</li> <li>• May be difficult to find an instrument to deliver a very large benefit.</li> <li>• Self-targeting relating to consumption patterns is usually not very accurate.</li> </ul>	<ul style="list-style-type: none"> <li>• A work requirement for workfare programs.</li> <li>• For use in self-targeting food subsidies, where a staple grain is more consumed by the poor than the non-poor.</li> <li>• In countries with very low administrative capacity, or very great concern over labor disincentives.</li> <li>• In settings where individuals are moving rapidly in and out of poverty, often crisis or transition economies.</li> </ul>
<b>Community Targeting</b>		
<i>Definitions and International Experience</i>		
In this case a community leader or group of community members whose principal functions in the community are not related to the transfer program will decide who in the community should benefit and who should not.		
<i>Pros</i>	<i>Cons</i>	<i>Suitable Circumstances and other comments</i>
<ul style="list-style-type: none"> <li>• Takes advantage of local information.</li> <li>• Allows for local definition of need and welfare.</li> <li>• Does not require program-specific staff.</li> <li>• Is sometimes only feasible option.</li> <li>• Low on the books administrative costs.</li> </ul>	<ul style="list-style-type: none"> <li>• Local actors have other incentives besides good targeting of the program.</li> <li>• May lower authority or cohesion of local actors.</li> <li>• May continue patterns of social exclusion.</li> <li>• If local definitions of welfare are used, evaluation is made more difficult and ambiguous.</li> </ul>	<ul style="list-style-type: none"> <li>• Where local communities clearly defined and cohesive.</li> <li>• For programs that propose to include a small portion of the population</li> <li>• For temporary or low benefit programs that cannot support an administrative structure of their own.</li> </ul>

### **Box 5.1: Six Questions to Critique the Implementation of a Targeting Method**

1. *What administrative change would lower errors of exclusion? of inclusion? Would such a change be cost-effective?* For example, would a better public communications scheme be worthwhile? More staffpower or transport budget for visits to poor villages or neighborhoods? Translation of materials or employment of staff fluent in non-official languages? Stricter enforcement of rules? A change in eligibility thresholds? Simplifying required paperwork?
2. *What administrative change would lower private costs? social costs? Would such a change be cost-effective?* For example, is there a way to reduce the number of visits applicants must make to apply for benefits? Or to reduce waiting times or transport costs for all transactions? Can who is receiving benefits be kept confidential?
3. *How could the program's administration be improved, either by lowering costs or raising quality? Would such a change be cost-effective?* For example, would the program improve with better operational manuals, streamlined forms, more staff training, more equipment, a better computer system, redeployment or release of some staff, consolidation of overheads or specific support functions with other programs?
4. *Could the targeting mechanism be used by other programs that are not doing so? Why aren't they? Is the mechanism used by a program that would be better served by a different mechanism?* For example, could various programs give entry based on a single means test or proxy means test, thereby spreading the administrative cost over a wider base? Similarly could several programs use the same poverty map? Are some programs using the "wrong" tool?
5. *Is the technical basis used up to "good international practice"?* For example, are the data bases and statistical analyses underlying the proxy means test and poverty map sound? Are the measures of welfare used in the means test reasonable?
6. *How good is the monitoring and evaluation system in the program?* Is there a regular management information system to track enrollment, delivery of benefits, and all the components of costs? When was the last set of measures of errors of inclusion and exclusion or of private transactions costs? When was the last beneficiary assessment? Has there been a full impact evaluation? How complete were these evaluations? Was the program or its implementation adjusted after the evaluations were done?

#### **5.1 Means Tests**

Means testing is a form of individual assessment that compares resources such as income under the command of an individual or household with some threshold or cut-off. In our sample, 24 programs used some form of means test. Although these are found in all parts of the developing world, these are relatively more common in Latin America and East and Central Europe. The majority of means tested programs (13 of 24) involve cash transfers.

### *How does means testing work?*

The application of means testing requires the collection of information on the total income of households (or individuals). This requires either a visit by a designated officer to the home of the potential beneficiary (home visit) or a visit by the beneficiary to a program office (office visit). Verification can involve simply an interview with the information provided taken at face value, supporting documentation provided by the potential beneficiary (individual documentation), and/or supporting documentation provided by a third party (third-party verification). Consequently, within the rubric of means testing there are large variations in terms of the complexity of the means test, the level and the distribution (between beneficiaries and implementing agencies) of costs and the accuracy of targeting achieved.

The “gold standard” means tests involves verifying information provided by the applicant with information from third parties - often income or property-tax records from the public sector, sometimes wage information from employers or financial information from banks. This approach is sensible only where the targeted population (e.g. low-income families) is largely employed in the formal sector and/or participates in a well-functioning income tax system. Although these conditions may exist in many OECD and some transition economies, neither is commonly met in poor countries and they may not be met for the poor populations of middle-income countries.

Alternatively, applicants may be asked to supply verification of some aspects of their welfare. For example, instead of requiring employers to supply information to the welfare agency in a uniform format and time schedule, applicants bring copies of their pay stubs to a social welfare office. The range of information may extend beyond income to expenditures that are assumed to be correlated with income and can be readily documented, such as telephone bills or electricity usage. This will work poorly for individuals whose economic lives are largely un-documented, such as workers in the informal sector who do not have access to utilities. It should be noted that this procedure shifts the costs of collecting the information to the applicant in a way that can entail significant transactions costs for them.

Lastly, means tests may be based on an interview with at best informal verification. In some cases the interview may be based in the household on a home visit, which allows some sort of qualitative glimpse of the household’s living standard. In the (now defunct) Jamaican food stamp program, the form on which the applicant reported income had to be signed by a community representative such as a minister of religion or justice of the peace. In other cases the interview may be a simple in-office affair where there is nothing more than the consistency of the interviewee’s story to verify or rebut his claims.<sup>9</sup>

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<sup>9</sup> It is our impression that these are fairly common for in-facility based systems of fee waivers in the health sector, though these cases were not covered in our literature review. In essence, a member of the medical staff decides who gets a fee waiver, which is really just a form of community based targeting.

### ***What determines how well means testing works?***

Three out of the top ten interventions – social assistance programs in Estonia, Hungary and Poland - as ranked by the a performance measure used means testing, as did the fourth most poorly targeted intervention, *GAPVU* in Mozambique. The effectiveness of targeting based on means testing depends crucially on being able to collect reliable information on total income at a reasonable cost. This requires either access to formal employment or tax records that can be used to validate reported incomes, or the collection of first-hand information on household incomes, wealth and/or consumption. Such characteristics are typically associated with higher-income countries and in our data set, there is evidence to suggest that conditional on having chosen some form of means testing, that targeting performance rises with country-income levels.<sup>10</sup>

### ***What are the costs associated with means testing?***

Means testing appears to carry higher costs associated with the collection and verification of information than other methods, though hard evidence is scanty.<sup>11</sup> These can be incurred as program administrative costs or private costs by beneficiaries. Costs associated with the collection of comprehensive information on household incomes or consumption via a home visit can cost several dollars per applicant household. On the other hand, office visits may involve potential beneficiaries incurring substantial time and money costs associated with acquiring the relevant documentary evidence and possibly multiple trips to program offices. These costs can be reduced by ensuring that potential beneficiaries have easy access to offices, are well informed about eligibility rules and the documentation required, and that program offices have the capacity to deal efficiently with applications. Using means testing in combination with other targeting methods can also reduce costs, e.g. by avoiding the costs associated with collection of information from households or individuals that have little chance of being eligible to receive program benefits.

The social stigma costs associated with means testing, either related to the requirement that a beneficiary publicly identifies themselves as poor or undertakes actions in order to qualify, also means that use of means testing can be politically sensitive issue. Some argue that current income is not a good proxy for access to opportunity, and that it is the latter that requires public action. Others argue that the information requirements for

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<sup>10</sup> Both Spearman and Pearsonian correlation coefficients show a positive association between targeting performance and country income. We estimated a median regression for the sub-sample of programs that use means testing. It too shows a positive and statistically significant association between income and targeting performance, though for the reasons discussed earlier, such results should be treated with care.

<sup>11</sup> As noted earlier, the absence of cost data prevents making such statements less tentative. Our data suggests that the median cost of transferring \$1 to a beneficiary is \$1.38 in the case of means tested programs as opposed to \$1.24 in the case of non-means tested interventions, though we are unable to make such a comparison controlling for program type. Targeting and administrative costs for means tested interventions reported in Grosh (1994, pp. 36-38) are generally higher than for other methods, on the order of ten percent of total program costs. Lastly, Atkinson (1995) shows that the administrative costs associated with welfare payments to families in the UK – called “Family Credit” – are, at 5.3 percent of expenditures on benefits, more than twice as high as the costs associated with the universal child benefit program.

means testing represent unacceptable intrusion into the lives of citizens. However, where means testing is seen to prevent the “undeserving” from receiving benefits, such costs may appear attractive, especially by those who perceive themselves as financing these programs.

Where means testing is based on income, it may create a disincentive to earn own income, and thereby to work. To reduce this work disincentive, most needs-based schemes in OECD countries graduate the reduction in benefit. For example, for every dollar earned, they reduce the benefit by 30 cents, or 50 cents or 70 cents. Sometimes there are also other requirements, often to demonstrate that the recipient is doing something “worthy” - working, in training, actively searching for work, caring for young children, or sick or disabled household members. Though the motive for the requirements is clear, the monitoring of them can be quite difficult. It requires both extensive and continuous information that is hard to verify or assess. What constitutes looking hard enough for a job? How young must children be to excuse a parent from working? In western European and North America, finding the balance between fine targeting, maintaining work incentives and monitoring behavior is an ongoing policy problem. Such fine tuning of incentives systems is less common in low and middle-income countries, though recently several new programs that tie benefits to the provision of schooling and health interventions for children have been introduced.

### ***Appropriate Circumstances***

Means testing is appropriate for countries with high administrative capacity and well-documented economic transactions that allow third party or applicant supplied verification of income. Because it is demanding, means tests will be most applicable to programs that provide large benefits. Indeed, for a program with very large benefits, it is very unlikely that the simplest methods – demographic, geographic or self-targeting will, alone, be sufficient.

Means testing is not appropriate for countries with more limited administrative capacities, nor as part of a rapid response to a shock. One of the poorest performing interventions in our database was the now abolished *GAPVU* program, a means tested cash transfer program operating in urban Mozambique. Implementation was highly uneven across urban localities, with widespread corruption (via the inclusion of fictitious names on beneficiary lists) co-existing with such rigorous application of means testing that at one point, only 0.6 percent of the target population in Maputo receiving benefits (Government of Mozambique, 1998). The a performance indicator for *GAPVU* was 0.49, implying that transfers to the poor would have doubled if means testing had been replaced by random allocation.

### ***5.2: Proxy Means Tests***

Because of the difficulties associated with collecting and verifying detailed information on household income or consumption levels in many developing countries, governments and development practitioners have tried to identify alternatives that overcome these difficulties. In this section we examine the use and application of one such approach,

namely, so-called proxy-means testing. In our sample we have seven programs that use proxy-means tests, four from LAC and one each in ECA, South Asia and East Asia. Proxy means testing is a relatively new tool in the targeting toolbox. Chile was the first country to use this approach when it introduced its *Ficha CAS* program in 1980. Since then, the tool has been monitored and its implementation and use refined over the years (Wodon and Clert, 2000; Sancho, 1992; Racynzski 1991; Casteneda, 1990). The approach is catching on in Latin America, with large proxy-means testing systems having been set up and evaluated in Colombia (first for subsidized health insurance and then for several programs including conditional cash transfers, workfare and scholarships for vocational training) and Mexico (conditional cash transfers). A number of other Latin American nations (Argentina, Costa Rica, Ecuador, Jamaica, Honduras, Nicaragua) are more recently developing proxy means testing systems and results from these are not yet available. But the experience is no longer Latin American alone. Armenia has used a proxy means test since 1994 for humanitarian assistance and cash transfers and Indonesia has used one for targeting its subsidized rice rations. Turkey introduced such a system in 2001 as part of a response to the financial crisis and other countries have done some piloting without fully setting them up (e.g. Russia, Egypt and Zimbabwe).

### ***How does proxy-means testing work?***

Proxy-means tests use a relatively small number of household characteristics to calculate a score that indicates how well off the household is. This score is then used to determine eligibility for receipt of program benefits, and possibly also the level of benefits.

The first step in designing a proxy-means test is to select a few variables that are well correlated with poverty and have three characteristics: i) the variables should be few enough that it is feasible to apply the proxy means test to the significant share of the population that may apply for the program, maybe as much as a third; ii) the variables selected must be easy to measure or observe; and iii) they should be relatively difficult for the household to manipulate just to get into a program. These variables are typically drawn from the data sets of detailed household surveys, e.g. a household budget survey or a multi-topic survey that include detailed information on consumption, employment, education, health, housing, and family structure. In most cases the variables selected include indicators of the location of the family's home, the quality of its dwelling, its ownership of durable goods, the demographic structure of the household, labor force status, occupation or sector of work for the adults, and sometimes partial measures of income. The number of variables used is often on the order of two dozen.

Once the variables have been chosen, statistical methods are used to associate a weight with each variable. One common approach is to use regression analysis, and regress total income or consumption of the household on the selected variables. Often these regressions are run separately by region (e.g. by province or rural/urban) so that variable weights differ across regions. This procedure is often iterative in that the variables initially selected are often chosen on the basis of a more comprehensive statistical analysis that evaluates their predictive power, i.e. how closely they are correlated with household income. Sometimes the weights are rounded to facilitate calculation of scores



in the field. Analogous procedures are used when principal components analysis is used rather than regression analysis.

In all countries, the basic design of the system (e.g. choice of variables, design of forms, operational manuals, and so on) is handled by a single agency in the national government, usually in the ministry of planning or welfare. Who provides the staff power to fill out registration forms and do data entry for the hundreds of thousands or millions of applications differs somewhat by country. In Chile, the municipality administers the test. In Armenia, it is the staff of the social welfare ministry. In Mexico, a special temporary cadre of survey workers administered the first wave of registrations in each area, but eventually these functions were carried out by personnel employed and organized directly by program officials. This intensive first wave of outreach at the inception of a proxy-means test is a common and recommended technique to set up the system.

Well implemented systems include periodic re-certification of beneficiaries to ensure that those whose welfare has improved are removed from the system. (There may also be other program specific limitations on the duration of benefits or exit rules related to age or other criteria). Re-certification may also present the opportunity to update the scoring system. However, although re-certification may improve the accuracy of targeting it also involves additional costs. We do not know of any country that re-certifies more often than once a year. Some do so on a three-year cycle. All too often, there isn't a regular cycle but long periods without any and then perhaps ad hoc decisions to re-certify everyone.

In some cases the scoring system is made public. In theory making it public embodies the ideal of transparency. Individual applicants or their advocates are empowered to double check whether their application has been handled fairly or not, and civil society is fully informed on the policy choice and can debate the appropriateness of the formula. In Armenia, the formula has been public, usually posted on the walls of the welfare offices. But qualitative fieldwork (Gomart, 1998a) showed that even in a society with universal literacy and exceptionally high levels of tertiary and technical training, it was not very well understood, especially since the formula was presented in its mathematical form with specialized notation. In Chile, the formula was publicly known for some years, with the points assigned to each answer printed on the application card so that the interviewer could calculate the applicant's score on the spot. In 1987, however, the government revised the formula based on a new data set and decided to keep it confidential, partly because its complexity made it difficult to communicate clearly, partly due to concerns that applicants would know too clearly how to bribe social workers if it were publicly known. We are not aware, however, of evidence as to whether this concern was based on real incidents of note or just the hypothetical possibility.

A key feature of proxy means tests, which some see as an advantage and others see as a disadvantage, is the formulaic nature of its calculation of need. It has the merit of making replicable judgments using consistent and visible criteria. Because the information used is fairly straightforward to collect and simple to interpret, a well-instituted proxy means

test should guarantee “horizontal” equity – that the same or similar households (at least in terms of the variables chosen) will receive the same treatment or decision even if evaluated by different staff members or by the same staff member on different days (or in different moods). Moreover, the training can be fairly simple and need not include a great deal of social work content. Appealingly, the degree to which this holds can be monitored quantitatively. For a government fighting actual or perceived corruption of politicization of program entry, this can be important indeed. The flip side of the formula is that it is rigid – it does not take into account special circumstances.

### ***What determines how well proxy-means testing works?***

How well proxy-means systems work depends on a number of factors. Firstly, one needs to be able to identify variables that exist in the surveys that are highly correlated with household income, that can be easily observed, and that cannot be easily manipulated by households in an attempt to get into the program. In many cases the formulae at best only explains about half of the variation in consumption among households, and often substantially less. For example, in the case of Egypt’s food rationing system, the variables used explained only 43 percent of the total variation in consumption, compared to the most comprehensive model that explained 62 percent of the variation (Ahmed and Bouis, 2001). Moreover, the prediction for each individual household, even if unbiased, has a large standard error, a fact not really taken into account in current practice with proxy means tests. In Armenia, various candidate formulae explained only about a quarter of variation.

Basing the choice of variables on analysis of existing household surveys will also rule out many variables that astute field observers in the country would suggest. In Armenia, for example, social workers visiting households make note of the presence or absence of fast food wrappers in the rubbish bin, and whether the household’s clothing is apparently from before or after independence and the move to a free market. These indicators are probably very highly correlated with household income, but such questions are not on the standard survey on which proxy-means tests are built so it isn’t possible to test this hypothesis or to assign such questions weights in the proxy-means test formula. Though some special questions might be added to the survey, there is still the problem of making them relatively easy for the social worker to observe and hard for the household to falsely manipulate.

Secondly, one needs to have an information system that is capable of reliably gathering this information from many households, in particular from the poorest households. A body of literate personnel is required to help fill out the forms for each applicant. This is probably the requirement that most limits the countries in which proxy means tests are used. In addition, there needs to be a small central team with sophisticated analytic skills to set up the scoring system and supervise its implementation. The information technology used can include sophisticated networks of computers calculating scores during the client interview and sharing information with all levels of the program in real time, or scores can be calculated by hand and stand alone computers used only for ex-post record keeping.

As with means testing, administrative arrangements associated with collecting and verifying information are vital to ensuring low errors of exclusion. No matter how well or badly the statistical formula works, if the poor don't register for the program it will have high exclusion errors. In our experience, this is an area that often fails to get the attention it deserves. Some governments have devoted much more effort and ingenuity to the statistical issues of fine-tuning the formula and administrative attention to winnowing out unqualified participants than to lowering errors of exclusion through a good outreach program.

Information about the benefits and procedures must be made to reach the participants in appropriate languages through appropriate channels. (Postings and pamphlets in markets, village shops, places of worship, beer halls, schools and clinics; briefings of traditional leaders, community organizers and NGOs; and the like will usually be more effective than a mass media campaign in reaching the poor.) Transactions costs to register should be low, ideally involving a single visit between the household and registering officer, and this possibly in the applicant's home or involving only one trip and queue in the appropriate office (department of social welfare, clinic, etc.). Social workers should have the time and transport allowance to allow them to do extension work to help reach the homebound, infirm and those who live in areas remote from registration offices and therefore find it unusually difficult to register. As stated above, in the most thorough cases, this can involve a complete census in poor areas upon program inception followed by periodic outreach. Requirements that applicants present paperwork (like national identity papers, marriage or birth certificates for household members, tax papers, etc.) should be reviewed critically as each of these potentially raise errors of exclusion. Where they are required, a system to ensure that such paperwork can be obtained quickly and at low transaction costs is desirable. International experience includes cases where, in contrast, it may take multiple trips to various offices to determine what paper work is required and to get it in order. In addition to time and transport costs of this, there may be official fees to get some paper work complete, and under the table payments for others, all of which tend to raise errors of exclusion.

A home visit as part of the application procedure will be probably be the main way that administrative arrangements can reduce errors of inclusion (this is the main job of the formula itself). Public information campaigns that emphasize that the goal of the program is to serve the poor may create stigma that is also helpful in reducing leakage. Most of the Latin American programs (and five out of the seven proxy-means targeted programs in our sample) require an interviewer or social worker to visit the household to fill out the proxy-means testing form. This provides a means of verifying that the information on the form is true. It may also induce a certain amount of self-selection as those who live clearly too well to qualify may be discouraged from applying. But the home visit takes resources. In contrast, in Armenia and Russia home visits were not a routine part of the application procedure<sup>12</sup>, rather the applicants were required to bring documentation of their household status into the welfare office, including registry papers

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<sup>12</sup> In Armenia, a sample of households was visited by NGO monitors. They conducted a qualitative assessment of need, not based on the same formula as the proxy means test.

to prove family composition, proof of residency to show location, information related to earnings or unemployment status and receipt of other government programs, and a medical certificate of disability if applicable. Not surprisingly, the Armenian program is the only program out of the seven in our sample using proxy-means testing for which benefit incidence is regressive.<sup>13</sup>

There are certainly limitations to the verification through presentation of documents. Obviously the range of variables for which documentation can be expected is limited. A first limitation has to do with the general levels of literacy and documentation in the country. In low-income countries, these may be quite low indeed. But even in middle-income countries, paper documentation is often better for ruling out the upper end of the income distribution than for certifying poverty.<sup>14</sup> After all, it is the non-poor who are likely to have formal pay stubs, utility bills, or automobile tax records. Thus a program can rule out those that present such things. But it cannot tell whether those who do not present them are poor, or merely concealing information. In a limited number of cases it may be possible to link the proxy means testing agency's records with those of the government agencies that monitor these other forms of paper work. This may, however, encounter formidable barriers in terms of compatibility of records.

### ***What are the costs associated with proxy means testing?***

The cost issues related to proxy-means targeting are very similar to those for means testing so we will not repeat all of the previous discussion here. The collection and verification of information involves costs, and whether these are incurred as private costs by applicants or are financed from the program budget will depend on whether information collection involves office or home visits. An extra cost is that personnel need to be trained to process the information using the scoring system and, as we indicated above, the levels of sophistication that this involves can vary widely. There are also the costs associated with developing the scoring system. The additional costs involved are lower if household survey data already exist so that a special data collection round is not required solely for the program.

In absolute terms we have data for three programs. In Armenia the administrative cost of the proxy means testing was estimated at about \$1 applicant (World Bank 1999), in Chile at about \$5 per applicant (Sancho, 1992), and in Mexico \$12 , (Coady, Perez and Vera-Llamas, 2000). The Armenian costs are low both because local salaries are quite low, and because of features of the proxy means test's implementation – in-office interviews,

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<sup>13</sup> The next worst performer in the category is the Viviendas program, targeted using the Chilean proxy means test, which does require a home visit. It has a performance 25 percent better than neutral targeting. Its poorer performance compared to the other Chilean programs targeted with the CAS is perhaps due to the requirement in the housing program of a substantial down payment and mortgage service requirements, which tends to exclude the poor.

<sup>14</sup> In Costa Rica, candidates for university student loans are asked to present the same kind of documentation discussed here. Because the base of applicants – university students – is well off compared to the population in general and because literacy and documentation are extensive in Costa Rica, this does not present the same problem it would for a program targeted to a poorer client base, much less in a country with less extensive literacy and written documentation of economic transactions.

very limited outreach to help register those who face barriers in coming into the offices, etc. Chile and Mexico have higher staff salaries, but both also have interviews conducted in the home and much more extensive outreach. The Chilean figure may be lower than the Mexican in part because it is older. More substantively, it was calculated once the system was mature, development costs amortized and periodic outreach only a portion of registrations. In Mexico the costs were calculated when the system was newly introduced and all registrations done through the extensive outreach in targeted areas. Moreover, the Chilean form is a short 2 pages collecting only the information used in the formula. The Mexican form is twenty pages long and resembles more a survey questionnaire than a program application form. It collects not only information used in calculating the formula itself but a good deal more information used in other poverty analysis.

Note that if several programs are targeted using the system, this spreads the administrative cost over a larger benefit base and is thus more cost effective. Colombia's SISBEN, for example, certifies families as eligible for subsidized health insurance, for the system of conditional cash transfers, for workfare and for scholarships for vocational training. Note that it is possible for different programs to use different cut off scores.

Combining targeting methods can also reduce costs. For example, Mexico's Progres program chooses the areas where the program will operate from a detailed poverty map. Then teams of field workers canvas households in only those districts collecting information to be used in the proxy-means test. It is also certainly possible to use the proxy-means test in conjunction with demographic categories, for example, for a child allowance program, as done in the Chilean unified family subsidy program.

The potential social and political costs can vary widely across countries and may depend on how the introduction of the program is managed. The issue of using a formula often elicits a strong emotional reaction in many people. It appeals to some as "scientific", "rational" or a safeguard against corruption or prejudice. To others it will seem a mysterious black box ("the computer decided"), cold-hearted, or a cover-up for what the government or social worker wanted to do. The inclusion of certain variables may also be politically sensitive. For example, in the Egyptian system, binary variables indicating location at the governorate-level were removed from the scoring system because they were seen as being too politically sensitive, in spite of the fact that they were very powerful predictors of poverty.

### ***Appropriate Circumstances***

As described above, proxy means testing is administratively demanding, especially in its requirement for a large body of literate (and in some variants computer literate) personnel to carry out the registrations. There is usually also at least a moderately sophisticated computer network associated with the system. Most of the countries using proxy means tests thus far are middle income.

Proxy means tests can be (and have been) used for various cash transfers, subsidized food rations, health insurance, workfare, scholarships for vocational training, and housing

subsidies. Chile briefly used them for school feeding and fee-setting in health care, but eventually stopped that. In general they are best used for programs where it is not a logistical problem to delay a benefit until an applicant is certified. A cash transfer program, for example, is not inconvenienced if a given applicant hasn't yet had their paperwork completed. In contrast, it can be a problem for a hospital trying to use a proxy means test to determine whether to grant access or what fee to charge for, say, emergency room visits. Inevitably some patients will turn up, claiming to be needy, but without the proper certification in the means testing system. If proxy means tests are to be used for access to such services then one or more of the following arrangements have to be allowed: the hospital has to be able to administer the proxy means test itself (even without a home visit), it has to be able to admit the patient and waive the fees without the certification, or it has to be able to turn away the patient.

The indicators used in proxy means tests are usually rather static. Proxy means tests are, therefore, best used to reach the chronically poor rather than to distinguish those suffering most acutely from a newly confronted crisis (be it covariate or idiosyncratic). This is partly because household surveys typically don't collect many of the more quickly changing variables that indicate household welfare and partly because the subset of variables selected from the survey for use in the proxy means test are meant to be those that are fairly easy to observe and not much subject to manipulation. Thus even if a survey asks questions along the lines of "how many meals did you eat yesterday?" which can change from season to season or when a family confronts a crisis, those sorts of questions are rarely included in the variables selected for the proxy means test. This is surely something of a frustration to the policymakers searching (sometimes desperately) for a tool to ameliorate crises such as those suffered from East Asia and its knock-on effects in Russia and Latin America. But the flaw must be put in context. Even if the formula did incorporate more quickly changing indicators, the ideal sought of beneficiary lists that evolve rapidly as the crises waxes and wanes would require re-certifying households every few months. In most cases, this is too demanding an administrative burden to be practical.

### ***5.3 Geographical Targeting***

Geographic targeting is popular, indeed in our sample of programs, it was the most commonly used method, used in 43 out of 100 cases. It was the only method used by all program types, but relatively more important for public works and social funds and least important for universal food subsidies. It was used in all regions, but especially common in LAC, South Asia and East Asia. It was also used by countries in all income groups. In this section, we briefly discuss issues related to the implementation of geographic targeting.<sup>15</sup>

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<sup>15</sup> For a more detailed and comprehensive discussion of geographic targeting, see Bigman and Fofack (2000).

### *How does geographic targeting work?*

Geographic targeting involves allocating resources to geographic areas using information that is thought to be a good indicator of the extent of poverty in these areas. For this reason, this approach is now commonly referred to as “poverty mapping”. The areas used may be political subdivisions of the country (states or counties), or they may be the catchments of specific service providers such as clinics or schools. There are a number of approaches to geographic targeting; these differ essentially according to the amount of information used, and how it is combined, in order to evaluate the extent of poverty in each area. The main approaches are illustrated below moving from the least to most data intensive.

There are also issues of conceptual notions of poverty. Economists traditionally have focused on income or consumption as a measure of welfare, the latter typically being interpreted as a better proxy for “permanent” or lifetime income. In contrast, much of the history of poverty mapping has used a “basic needs” approach with poverty defined in terms of access to basic services. Recently, there has been a growing emphasis on the need for a broader concept of welfare, e.g. capabilities approaches (see Box A.1). The indicators used are often interpreted using one of these approaches.

The simplest form of geographic targeting involves the use of a single variable such as nutritional status, which is often used when the program being targeted has a strong nutritional objective. In the recent Honduran cash transfer program, municipalities were chosen based on nutritional levels, using as the criterion the measure of height-for-age z-scores available from the 1997 height census for first grade children. In an early stage of the Venezuelan *Beca Alimentaria*, the “mapping” was less formal, based principally on the judgment of program officials about which schools served poor areas. That judgment was based, of course, on having been exposed to various sorts of poverty maps and to field conditions, but was not formally quantified, nor necessarily reliant on the same factors in different areas of the country. In such cases the underlying concept of poverty is obviously very subjective and not especially explicit or transparent.

A more sophisticated version of poverty mapping uses principle component analysis to calculate the summary poverty indicator. It is often interpreted as a reflection of basic needs status or capabilities, and the choice of variables is largely guided by a combination of philosophy and data availability. For example, in its initial geographic targeting stage for the Progres program, Mexico used seven variables from three data sources -- the XI General Population and Housing Census of 1990, the Population, the Population and Housing Count 1995, and the Geographic Integration Catalog, all of which were constructed and carried out by the National Institute of Statistics, Geography and Information (INEGI). The seven variables used were: (i) the over-15 illiteracy rate, (ii) percentage of households with access to running water, (iii) without access to drainage, (iv) without access to electricity, (v) the average occupants per room, (vi) percentage of houses with earth floors, and (vii) percentage of labor force in agriculture. Principle component analysis was used to calculate a Basic Index of Marginalization for

each locality in the census based on these seven variables, and this indicator was usually interpreted as a reflection of basic needs.

More recent applications of poverty mapping have used consumption as the basic welfare or poverty indicator. The basic idea is to combine the information on consumption from nationally representative household-level income and expenditure surveys with the information available in a national census for all households in the country (Hentschel, Lanjouw, Lanjouw and Poggi, 2000). Using variables common to both data sets, a model of household consumption is estimated using the expenditure surveys. The estimated coefficients are then used to predict consumption for every household in the national census. Poverty rates are then calculated for each geographic unit based on some poverty line and poverty index (e.g. the poverty headcount, the poverty gap, or the severity of poverty). This approach is thus essentially a more sophisticated form of proxy-means tests applied to geographic units.

A special characteristic of this new approach is that greater recognition is given to the problems associated with the precision of predictions (Elbers, Lanjouw and Lanjouw, 2000). As the degree of disaggregation increases, so do standard errors so that precision declines. For example, in the Ecuadorian example used in Hentschel et al (2000), the administrative level below the canton (of which there are about 400) is the parish (of which there are about 1000). The standard errors become high enough to compromise comparisons for small parishes (below about 500 households). This Ecuador example served as pioneer and pilot for this approach. Since then similar applications are finished, underway or about to start in Brazil, Guatemala, Mexico, Nicaragua, Panama, Kenya, Madagascar, Malawi, Mozambique, South Africa, Tanzania, Uganda, China (one province), Indonesia (one province), Thailand, and Viet Nam.

Because construction of such poverty maps requires having access to census data at the household level, this implies either that the work be done within the census office, or may break precedents of access policies. The construction of consumption-based poverty maps also requires that the household survey have a large subset of the variables that are also in the census and that they are coded in the same way, which is not always the case.

### ***What determines how well geographic targeting works?***

There are various factors that influence the effectiveness and appropriateness of geographic targeting: its accuracy in the setting, the type of programs, and the alternatives available.

The potential for this approach depends very much on being able to identify variables that are highly correlated with the welfare concept underlying the analysis, whether it is basic needs, capabilities or consumption. However, only for the case of consumption-based poverty mapping can one really evaluate this underlying association, and this is undoubtedly one of its attractions. In our discussion below we will primarily be concerned with consumption-based poverty mapping, but much of what we say will also apply to maps based on other concepts of welfare.



The correlation between space and poverty is an obvious determinant of the accuracy of geographic targeting. Often there is a strong correlation, with some areas much wealthier than others due to, for example, differences in climate or natural resource base, different histories of policy and administration, or stock of infrastructure. These may occur more frequently in large countries, those with diverse geographic features, and with decentralized administrations. In Brazil, a large, federal country, poverty rates are only 5.1 percent in the southeastern state of Sao Paulo, but ten times that at 51.4 percent in the northeastern state of Maranhao (World Bank, 2001, report No 21790-BR). In contrast, in Jamaica, a small and unitary nation, although the wealthiest parish has mean consumption twice that of the poorest (STATIN and PIOJ, 1994), only 11 percent of total inequality in consumption is due to differences between parish averages (STATIN, 1989), the rest is due to differences within parishes. And in the Former Soviet Union, one of the legacies of central planning is that the cities tend to have more homogeneity of wealth across area than found in urban areas in market economies.

In most countries the census is the only source of information available for all small geographic units, but it has only a few variables, usually about the demographics of the household and the standards of its housing. In some countries there may also be a few other sources available – perhaps an annual census of the height and weight of first grade children in school, or maps of soil quality and rainfall patterns. These may be a little more closely correlated with welfare, but are still likely to be imperfect substitutes, especially if many children are not enrolled in school or if agriculture doesn't form a large part of the economic base. This used to limit either the choice of variables or the level of disaggregation possible and thus was a major constraint on the accuracy of poverty mapping. The introduction of census-survey prediction methods begins to address this constraint.

For a given spatial distribution of income the proportion of total inequality explained by variations in mean incomes between areas will increase with the level of disaggregation. The advantage of using the national census is that it usually contains information at the lowest geographic unit available among all data sources and this can greatly enhance the precision of targeting. But, two factors often work against using the map at the lowest level of disaggregation possible. Firstly, it may be that even at this level the spatial variation may be low in some countries so that targeting only certain areas will lead to large undercoverage rates. However, one can instead allocate resources to all areas, say, using a formula based on the index. Secondly, since the precision of predicted consumption decreases at lower levels of disaggregation, one cannot be very confident that targeting will in practice be effective. For both reasons, the best approach may be to use geographic targeting for allocating resources across areas and then use another targeting method to target within areas.

There are also some administrative issues about how the poverty map is used, that relate to the level of service delivery. Even when poverty maps are accurate for very small units, it may be administratively awkward to take full advantage of that information. It may be difficult for a school district to offer free textbooks in some schools in its district

but not in others. Or for a health center to charge fees to those in some neighborhoods but not in others. It might not, on the other hand, be administratively difficult to have some school districts have free books, or for some types of fees to be waived in all rural areas.

Some types of programs or services can use geographic targeting better than others. Poverty maps are very often used to guide investments in infrastructure, e.g. where to build new roads or schools. In the more limited context of safety net programs, they are used in various ways.

- For public works programs and social funds, citing infrastructure is important and poverty maps are used both to ensure that the area served by the infrastructure is poor and unserved and that the surrounding population from which the workers will likely be drawn is poor.
- Poverty maps can be used to select areas where a subsidized service will operate, or where transfers will be available. How well this works will depend on how often the services or purchases are needed, especially in urban areas. People won't travel as far to use a service they need often as they will for one they need only occasionally. Thus we would expect that the targeting that results from citing in poor area shops that sell subsidized tortilla, which must be purchased fresh daily, would be better than from shops that sell a month's ration of subsidized flour or rice. If stigma, danger, or inconvenience are an issue, we might also expect geographic targeting to work better for programs that one must use in person. A rich household can, for example, send its servant to a poor neighborhood to buy a month's supply of subsidized milk powder. But it probably wouldn't send its child daily to a drink a glass of milk at a feeding center in a poor neighborhood.
- Community based targeting methods, by definition, work only to allocate a budget given to the community for a specific program and thus must have some other allocation mechanism among communities if overall targeting is to be effective. Geographic targeting is the most sensible adjunct. For example, in the Indonesian scholarships program launched after the financial crisis of 1997/98, geographic targeting was used to allocate the budget to districts; and within the districts to the individual schools. Within schools, community targeting was used, with the neediest children chosen by a committee made up of community members and local officials (Government of Indonesia, 1998).
- A poverty map alone is rarely used to target a large benefit, especially one in cash, because of the inherent limits to its accuracy.
- Finally, the feasibility of other options will influence whether or not to use geographic targeting. Where administrative capacity is high enough to run a means-tested cash transfer program, geographic targeting may not be a useful substitute or adjunct. But where means testing is out of the question, one alternative might be to use a combination of geographic and community targeting; another to use a combination of geographic and self-targeting.

### ***What are the costs associated with geographic targeting?***

Geographic targeting is popular in large measure because it requires so few administrative resources. A small team of analysts can build a map (and indeed this can even be contracted out) using pretty much whatever data are available, though clearly the accuracy of the map will be greater if good data are gathered at disaggregated levels every few years. The map can then be used by a host of agencies that need only an intuitive understanding of how it was constructed.

How a poverty map is used is often determined by political and social as well as economic factors. A poverty map ranks areas by poverty, and may give some sort of absolute scale of poverty. But the map itself doesn't say anything about how many resources to give to which areas. The degree of gradation in resource allocation according to the poverty map can vary considerably. In some cases the gradation is slight, so that on a per capita basis the poorest district may receive only, say, 10 percent more per capita than the richest. Other times the gradation is quite sharp, with the poorest areas receiving several times as much as the richest. Indeed, a program may rule out wealthier areas altogether, and give graduated levels of resources among areas that participate.

Where the operation of the program involves high fixed set-up costs it may be more cost-effective to concentrate resources in only a sub-set of regions. However, excluding some regions may be deemed politically infeasible. For example, in building their system of geographic targeting, early planners in the Bolivian Social Investment Fund once thought to rank *cantons* (counties) nationally, and serve only the poorest grouping. Because some departments were so much better off than others, they had few or no high-priority *cantons* within their boundaries. Indeed, most of the priority *cantons* fell in just three departments. The representatives of the other departments protested at funds going to only those *cantons*, especially as the broader issues of decentralization and the sharing of revenues between the national and departmental governments were receiving much attention at the time. The priority ranking system had to be modified so that it was used to establish priorities with departments but not among them. Within each department, *cantons* were ranked according to literacy, school enrollment and infant mortality rates. Then the ranked lists of *cantons* were divided into four priority groups containing approximately equal shares of the population. The cutoff point of the poverty index that delineated the difference between the first and second tiers in the priority system thus varied by department. Priority 1 *cantons* in each department were given equal treatment in the project promotion and appraisal. Similar forces also influenced the geographic allocation of funds for the Egyptian food subsidy system as well as for the food-for-education program in Bangladesh. In the Egyptian case, the allocation was not very highly correlated with the underlying poverty map so that other forces were obviously important (Ahmed, Bouis, Gutner and Lofgren, 2001). In the Bangladesh case, for political reasons all *thanas* were eligible for the program, but within these geographic units the poorest *unions* were chosen (Ahmed and el Ninno, 2001).

Political factors may also have an influence on the targeting index used. For example, if the poorest regions are less densely populated, then it may be that targeting based on a poverty headcount measure allocates more funds to wealthier regions whereas targeting based on a severity of poverty measure results in a greater concentration of resources in fewer but poorer regions. The outcome may thus depend in part on whether the poorest districts are concentrated in a few provinces or scattered among them and depending on the political features of the country (e.g. the role of regionally based legislators in budget allocations, the general nature of decentralization or federalism and resource use, or perhaps confounding factors of regional ethnic divides with different welfare levels). Also, where the program starts out being very concentrated in a few regions there is usually increasing pressure to expand the program to other areas, especially when the program involves health and education services for which equality of opportunity (and not just alleviation of current poverty) is seen as the driving force. It may be that some areas are more income poor but that all are equally education or health poor.

How funds are allocated will also raise important social issues. For example, concentrating resources in the poorest areas, even when cost effective, will tend to exclude some who are equally poor but just happen to live in a less poor region. This obviously goes against the principle of horizontal equity, which requires that those who are alike in all relevant characteristics should be treated similarly. Adherence to the principle of horizontal equity then requires either that program resources go to all regions in proportion to the extent of poverty, or that the allocation of resources for other programs (possibly using different targeting methods within regions) rectify the situation.

In our experience, a great deal of effort has gone into the creation of competing poverty maps based on different *ad hoc* composite indicators of poverty and then the debates about which map is best overall or for a specific purpose. The art of geographic targeting could probably be advanced were that energy rechanneled into formulating maps that combine census and survey information and, perhaps most importantly, into addressing how the poverty map should be used. We have, for example, seen countries spend years arguing over minor changes in data source or *ad hoc* indices and then only very slightly differentiate the resources assigned to different areas according to the poverty ranking.

### ***Appropriate Circumstances***

Poverty maps are applicable for countries of all levels of income and administrative capacity. They can and indeed are used for all sorts of programs and geographic methods can be combined with most other targeting methods and are indeed almost essential to combine with community based methods. Thus at some level they are very broadly applicable. And yet, by themselves, they are not terribly accurate. Thus the choice of whether to use them alone or in combination with other methods will depend on several factors. All else equal, they will be best used where poverty is highly spatially correlated; where the benefit is linked to a service used daily and in person; where the benefit is small or other methods are not feasible.

## ***5.4 Demographic Targeting***

Demographic targeting – by age and/or sex - is a common form of categorical targeting. Our database contains 16 examples of programs targeted to the elderly, 27 for young children and 7 targeted by gender. Twelve of the sixteen programs targeted to the elderly are cash transfers spread evenly between LAC, Eastern Europe, sub-Saharan African and East Asia. For the programs targeted to children, 16 of the 27 are for cash transfers. LAC dominates with 12 programs, East Asia and Eastern Europe follow with 7 and 6, respectively and African and South Asia have only one program each.

The median demographically targeted intervention (by age or sex) in our database performed no better, but no worse than non-demographically targeted interventions. However, there were significant variations within these demographically targeted programs. Programs targeted toward the young, on average, did better at transferring resources to the poor than do those targeted to the elderly. Interventions that combined demographic targeting with some other method performed considerably better than those that used demographic targeting alone. The best demographically targeted intervention in our database that used no other targeting method is the payment of family allowances in Latvia. Yet, eleven of the eighteen demographically targeted interventions that also used means testing or geographic targeting transferred a greater proportion of program resources to poor households.

In our database, the best interventions targeted to the elderly were found in Chile (the CAS-PASIS) and Costa Rica (*Pensiones no Contributivas*) while the poorest were transfer programs in Viet Nam and Mozambique. In Chile, eligibility was determined jointly by age and a proxy means test based on a home visit. The test was overseen centrally, but the determination of eligibility was contracted out to local authorities and the private sector. In Costa Rica, individuals had to apply for benefits at local offices; social workers reviewing applications had considerable latitude in determining eligibility. The GAPVU cash transfer program in Mozambique had superficial similarities to both the CAS-PASIS and the *Pensiones no Contributivas*. Potential beneficiaries had to apply for benefits, home visits were made and the elderly were required to produce documentation confirming their age. However, there was insufficient administrative capacity to support the selection process, many elderly were dissuaded from applying because they lacked documentation, payments were delayed and decisions to specify an accelerated rate of enrollment led to corruption and the creation of fictitious recipients. GAPVU was eventually abolished (Government of Mozambique, 1998).

### ***How does demographic targeting work?***

The basic notion of demographic targeting is the height of simplicity – to select groups defined by easily observed characteristics (the old, the young, female-headed households or the like) that are poorer than average and to make them eligible for some sort of benefit. In some cases, such as the universal child allowance, no other criteria are used. But demographic targeting can be combined with other methods – about three quarters of programs targeted towards children also use means testing or geographic targeting.

While the criteria for demographic targeting appear remarkably simple, implementation may still require some effort. For programs limited to young children and the elderly, proof of age is often required and a national identity number if the country has such a system. If these are readily available, the targeting mechanism does not add to administrative requirements. In the absence of such documentation, program administrators risk errors of inclusion if proof of age is not required or errors of exclusion where documentation is required but is difficult to obtain.

Although in principle, obtaining these documents should be straightforward, in many countries, and the more so in poorer countries, poor people may have problems getting them. The poor may not be aware of the importance of the document or understand the procedures to get one. They may face barriers of language or literacy. In addition to having to pay official fees and possibly bribes, they face transactions costs –in time and transport costs – associated with visiting registry offices. If the offices providing these documents have poor service – erratic hours, long lines, and unreliable service standards - the transactions costs for clients increase where multiple visits are necessary. If proof of own or parents’ marital status has to be supplied, the problem can be compounded, especially where many unions are not officially registered. Problems are usually more marked for programs for the elderly than for the young because registry systems are better now in many countries than they were sixty years ago and because it is easier to find witnesses needed for informal testimony or formal affidavits for recent events than for distant ones.

Programs targeted to pregnant and lactating women usually require a medical certificate verifying pregnancy and stating the expected due date. This may be a source of additional transactions costs, though perhaps not in cases where women who are getting regular prenatal care or for women who would not seek such care in the absence of the intervention.<sup>16</sup> Sometimes women must get re-certified into a “lactating” category once their babies are born. Experience shows, however, that such a requirement should usually be avoided. It adds a bureaucratic process costly to both the program participant and the government that can be easily eliminated by calculating the exit date of eligibility the appropriate number of months after the expected birth date of the child.

There are two other administrative aspects of demographic targeting that should be noted. Dispensing individualized benefits can require millions of transactions –interventions as disparate as Peru’s “Glass of Milk” program and old age pensions in Viet Nam serve more than one million beneficiaries. The broad targeting criteria result in a large client base and thus in a large operational administrative requirement to ensure that transfers are provided reliably, that new beneficiaries can be added as they become eligible and that individuals who become ineligible are dropped.

Second, both the very young and very old are more physically immobile than the rest of the population and this has important implications for the take-up of benefits, especially

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<sup>16</sup> As a demographic targeting criterion, lactation isn’t usually meant literally, but rather refers to a period of eligibility of six months or a year following the birth of a child.

in rural areas of poor countries. An instructive comparison is that of South Africa and Namibia. In South Africa, the physical delivery of pensions is undertaken by a government agency. Mobile automatic teller machines are driven through the countryside, stopping at meeting points such as markets or shops. Take up rates in rural areas are about 80 per cent (Case and Deaton, 1998). By contrast, in Namibia, the delivery of pensions was contracted out to a private firm who provided few pay points. In more remote northern areas, some pensioners had to travel as much as 100km to receive their pensions. This feature, combined with difficulties in obtaining documentation and registering beneficiaries, resulted in take up averaging 48 per cent across the country, with coverage being as low as 30 or 34 per cent in some areas (Subbarao, 1998).

### ***What determines how well demographic targeting works?***

As a stand-alone method, the effectiveness of demographic targeting depends on whether the group identified – the elderly, children or other categorization – is poorer on average than groups that are excluded. There are enormous variations in the poverty levels of these categorizations. For example, the incidence of poverty amongst Polish pre-school children is twice as high as it is for individuals aged 65 or older. By contrast, the incidence of poverty amongst the elderly in nearby Estonia is 50 per cent higher than it is amongst pre-schoolers (Braithwaite, Grootaert and Milanovic, 1999). However, there are a number of important issues associated with measuring these poverty levels.

The first, which is common to all poverty assessments, is the importance of distinguishing between the incidence and severity of poverty. In the Polish and Estonian examples above, although incidence differed dramatically across age groups, the poverty gap, a measure of the depth of poverty, was approximately the same for both the old and young in both countries. Second, it is important to understand the nature of living arrangements when targeting by age. In South Africa, it is argued that because young children often reside with their grandparents, that the old age pension is an effective means of reaching young children; Duflo (2000) argues that pension income received by women has had a significant impact on improving the nutritional status of children, particularly girls.

A third issue relates to the construction of the measure of household welfare. If children ‘need’ less than adults, per capita measures will, all else equal, overstate poverty in households with many children. Adjustments for this are referred to as “equivalence scales”. Certain expenses, such as heating, lighting and to a certain extent housing, are household rather than individual expenses. For such items, a number of people living together can do so more cheaply, in per capita terms, than living separately. Adjustments for this come under the heading of “scale economies”.

Lanjouw, Milanovic and Paternostro (forthcoming) demonstrate the importance of carefully considering both equivalence scales and scale economies in their seven-country study of Eastern Europe and the Former Soviet Union. With no equivalence scales, in all seven countries, the elderly are less than averagely poor. Households with three or more children are poorer than average, sometimes markedly so. However, even a modest

adjustment to equivalence scales (assuming children have consumption needs that are 70-90 per cent of adults) causes this ranking to be reversed. This matters powerfully for policy – should money go to pensions or to child allowances and services for children?

Deaton and Zaidi (2000) and Lanjouw, Milanovic and Paternostro provide excellent source materials on the construction of equivalence scales and scale economies. Their general approach is via the following equation:  $\text{Adult Equivalents} = (A + aK)^\alpha$  where  $a$  adjusts for age equivalences, and  $\alpha$  for economies of scale. A per capita measure of household welfare assume that there are no economies of scale, e.g. that  $\alpha$  equals one; and that children and adults have the same requirements, i.e. that  $a$  equals one.

If household consumption is largely food, as in the case of the ultra poor in very poor countries, economies of scale are close to zero. And since children eat less than adults, equivalence scales would be important and much different than one for young children, since infants need few calories relative to adults. As households and nations grow wealthier, consumption patterns change. The share of resources spent on food declines and the share household “public” goods such as housing and durable goods rises, so the scale economies increase. At the same time, children consume more non-food goods such as clothing and toys, all of which add to the costs of supporting them and reduce the importance of food-based equivalence scales.

### ***What are the costs associated with demographic targeting?***

Programs using demographic targeting appear to have lower administrative costs than other targeting methods, though this statement should be treated cautiously given that cost data are available only for a small number of interventions. Private costs are largely related to the transactions costs associated with enrolling and obtaining benefits; as the South African and Namibian examples show, these can vary greatly. An additional appeal of programs for the very young and old is that they are directed at members of society for whom work, or at least heavy work, is not generally expected, thus granting transfers to them does not raise questions of whether it fosters low work effort.

Demographically targeted programs often have high political acceptability. Programs for children are politically popular almost everywhere partly because they appeal to the arguments of building human capital for the next generation and providing equality of opportunity. Programs for the elderly are usually very popular as well; many societies still accord the elderly great respect and no one likes the specter of destitute and disabled elderly, either as a reflection on society’s caring or as a possible fate for oneself.

### ***Appropriate circumstances***

Demographic targeting alone is suitable when there are no other sensible options, when the political appeal of a program universal to the age group is important, or when the correlations between poverty and age are particularly strong. It appears to work better in combination with means tests, proxy means tests or community based methods as a



way of first reducing the target population to a smaller sub-set in the relevant age cohort as long as such additional methods are feasible.

### ***5.5 Self-Targeting***

Our sample includes 12 programs self-targeted with a work requirement, 23 self-targeted through the purchase of subsidized goods and 10 in which the community must put forward a proposal to benefit, as under a social fund. Thus taken all together, self-targeting is a commonly used technique. It is closely associated with program types – the work requirement and public works go hand in hand; food price subsidies and self-targeting through the quality of the good do likewise, and community bidding and social funds. The correlations with regions are a bit less marked. Social funds are present throughout the world, though our sample contains only a small number and most of these are Latin American. Public works are found mostly in Latin America, Africa and South Asia. Our sample of food subsidies is heavily based in MENA and is probably reflective of current world experience (though twenty or thirty years ago subsidies were found much more widely).

The results from self-targeting through a work requirement or through community bidding are rather variable, with high and low performance indicators ranging from 1.08 for India's Maharashtra Employment Guarantee Scheme to 4.0 for Argentina's *Trabajar* program; and from .93 for the Armenian Social Fund to 2.3 for the Thailand Social Fund, respectively. For self-targeting through purchases of subsidized goods, the results are less good, from .28 for the VAT exemption on fresh milk in South Africa to 1.17 for the subsidy on flour in Morocco.

#### ***How does self-targeting work?***

Self-targeting programs are open to all, but designed in such a way that they are used mainly by the poor. The non-poor choose, of their own accord, not to use them. The factors that contribute to this choice are private or transactions costs of participation, stigma associated with the use of the service or program, and preferences about quality.

*Transactions costs can be small or large, implicit or explicit, in the value of time, or in cash.* It is always important to understand the order of magnitude of transactions costs. Even if they are not planned to be a targeting tool, they may well affect program participation rates. Let us consider some examples.

The time cost of workfare is a classic form of self-targeting. In order to receive a payment in cash or food, individuals must perform significant labor. Usually the jobs involve unskilled, heavy manual labor. Usually the jobs are organized offering full day, or nearly full day employment on days worked. Some programs offer a job for several weeks or months duration, others allow individuals to work only occasional days or a week here or there. Such full time labor means that the workers must reduce the hours spent on other activities. Most of the workers would, in the absence of their public works job, be seeking and getting at least some employment, often as casual day labor or

working on their own land or in their own micro-enterprise. Thus they would be generating some earnings in the absence of their workfare jobs. The transaction costs to them of holding the workfare job is the earnings foregone. The extent of these will be influenced by program design. Programs in rural areas in slack agricultural season, those that offer day labor or those that have short work days better allow participants to carry out other labor activities and will have lower foregone earnings than do those that are full time for concentrated periods of several months.

A few programs require some “volunteer” labor or time in helping to organize the program or to render token service to the community exchange for the benefit. Peru’s famous and extensive community soup kitchens require users to take their turn preparing food. An old version of the Honduran food stamps program requested a day per month of time spent collecting trash, though it isn’t clear how rigorously this was enforced. Usually the order of magnitude of such volunteer labor is much smaller than for the workfare and does not preclude full employment, though it may slightly reduce hours of casual labor or domestic chores.

A third variant on this theme is the effort required of communities who solicit projects under Social Funds. The rules of course vary somewhat by country, but in all cases a certain organizational effort is required to convene the community or a sub-group of it to put together and shepherd the application. In many cases some sort of formal contribution to the project is also required, sometimes on the order of 5-15 percent of its costs. These contributions may be in cash, materials or unpaid labor time, depending on the rules of the social fund.

Most other kinds of programs involve transactions costs, though of a smaller magnitude and often not explicitly stated or thought out. Virtually all programs require some action to sign up and/or to collect benefits. This in turn requires going to a program office, queueing, sometimes paying fees or even bribes to complete paperwork, etc. Depending on the program design and the quality of service offered, multiple trips and long lines can be involved. And they may be required to get relatively small benefits. The time and cash costs can be a significant deterrent to program participation even in cases where they are not an explicit part of the targeting mechanism. Examples abound, we give only one typical one as illustration. In Ecuador’s *Bono Solidario* cash transfer program, recipients had to go monthly to participating banks to collect their money. This was hardest for those in rural areas, where take up was alleged to be lower than in urban areas. A small survey conducted among those who did collect benefits (Leon, 1999) showed that while for most recipients collecting the monthly benefit was manageable, for some transactions costs were high. A third had to wait in the line for more than 3 hours. Three quarters had to pay some transport costs and 8 percent had transport costs that were above 10 or 20 percent of the value of their benefit (depending on which category they were in). Four percent had to spend a night away from home. Faced with the prospect of a similar problem, the designers of Colombia’s *Familias en Accion* program decided to exclude from its program municipalities that did not have a branch of the commercial bank, thus excluding about 12 percent of the poorest areas otherwise chosen from its poverty map.

*Stigma may be a factor in people's decisions about whether to participate in a program.* The degree of stigma associated with program receipt seems to be rather variable depending on the country's general belief structures about the causes of poverty, equality of opportunity, the role of the state in providing minimum living standards, etc. (see Rainwater, 1982 or Graham, 2001) as well as to program specific features.

At the program level, how the public outreach, application and benefit processes are designed can make participation more or less prone to stigma. In public outreach, governments can encourage or discourage stigma. In publicizing the new cash transfer system that grew out of humanitarian assistance, the Armenia government emphasized that the new program was meant only for the poor, essentially trying to encourage stigma as a self-targeting device. In contrast, in Jamaica when the food stamps program was organized in 1984, the publicity for the maternal-child part of the program included television ads with the pregnant wife of a cabinet official enrolling for her stamps. There the emphasis was on boosting enrollment and acceptability of the program. In an increasing number of targeted programs, partly as a feature of good governance and partly to use stigma to deter leakage to the non-poor, a listing of all program beneficiaries is posted in a public place such as the local welfare office or municipality. This, of course, also leaves the poor open to stigma. Sometimes the means of publicly identifying beneficiaries has to do with the form of benefit. Food stamps, ration cards or vouchers are visibly different from cash and thus clerks and fellow shoppers may notice when participants make purchases with them. Cash, in contrast, does not carry this visible label of provenance.

Is stigma good or bad? The answer may be some of both. Clearly it is a cost to the program recipient who feels it. Whether it is mildly unpleasant or soul-destroying depends a great deal on the context, as well as on the sensitivity of the individual. As with other sorts of transactions costs, stigma is a tool that can help discourage leakage. But it is quite a blunt tool, in that it can also discourage participation among the poor. Thus it should be analyzed carefully and used judiciously.

*Features of program quality will also affect peoples' decision about whether to use a subsidized product or service.* The second classic example of self-targeting after public workfare is the subsidization of a basic food stuff more consumed by the poor than the non-poor. The idea is to find different staples or variations on them that are nutritionally equivalent or closely so but differ in terms of prestige – sorghum vs corn, broken rice vs whole, coarse flour vs fine, and yellow vs white corn and examples where the former is usually less prestigious but nutritionally equivalent to the latter. If the price of the less desired commodity is subsidized enough, the poor who are still trying to meet their calorie needs will buy it, while the non-poor purchase the more prestigious one. Of course the sorting will not be exact, and will depend upon the relative strengths of preferences and differences in prices.

### *What influences how well self-targeting works?*

The size of transactions costs, the degree of stigma and the differences in sensitivity to them between the poor and the non-poor are the direct influences on how well self-targeting works.

In self-targeting through low wages, the critical factors are the wage paid relative to the market wage for such labor, and the distribution of wages in the economy. In Argentina's *Trabajar* program, the maximum wage paid was initially set at the minimum wage and subsequently lowered (and was subsequently about the equivalent to the earnings of the lowest decile of the population) and a few districts elect to pay somewhat less. Its performance indicator is the best observed for any program in our sample 4.0 according to the alpha measure. The Bolivian Emergency Social Fund, in contrast, paid the prevailing wage in the construction industry. Targeting was somewhat less progressive, with a performance indicator of 1.93 because the reference wage was not undercut and because construction workers were not among the very poorest. Note that if there are a lot of people earning near the public works wage, targeting will not be as good as it will be when the wage gradient is steeper.

Even in cases where the wage is set low enough to ensure that applicants for jobs are poor, if the program is not large enough relative to demand, then some kind of other rationing system will be needed. Sometimes this is informal – who knows the foremen or the party politicians. Other times is it formal – use of a lottery (as being considered in Argentina's *Trabajar* program) or proxy means test (as in Colombia's *Manos a la Obra*) or some community group decision (as in the South Africa's Western Cape).

It can also be difficult to identify vehicles suitable to transfer substantial resources. Workfare can do so, but is suited only to those who can work, and conventionally to only those who can do hard physical construction labor. This certainly excludes children and the elderly and may exclude others depending on social conventions. In Indonesia's *padat karya* workfare programs, women participated to significant degree only in (Hindu) Bali, in other (Muslim) provinces their participation was negligible.<sup>17</sup> And such jobs may not be taken up by those with secondary education or who had held white collar jobs.

Aside from workfare, it can be hard to find a self-targeting tool that allows both good targeting and provides a substantial benefit. For a cash payment of any size, the queuing costs alone would not be sufficient to guarantee good targeting. For food price subsidies, there may not be a commodity that is consumed more by the poor than by the non-poor (especially if this is judged in absolute terms rather than in relative ones). Even if there is one, it needs to have a production and trade chain that makes it easy to attach the subsidy. For example, grain grown by smallholders and sold in a thriving private market to

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<sup>17</sup> There are design features than can help encourage women's participation in workfare, at least in some contexts -- payment in food rather than cash, payment for piece rates, provision of adequate latrines, provision for on-site child care, inclusion of "pink collar" activities in the program, etc. (see Subbarao, 2001).

dispersed outlets will be harder to subsidize than a product that is largely imported by the monopoly state trading agency. And consumption patterns are important. Sorghum or millet, for example, may be consumed not only by poor humans, but also used as animal feed. Thus subsidies on these grains may result in a costly indirect subsidy to the livestock industry.

***What are the costs associated with self-targeting?***

First and foremost, self-targeting relies on social and transactions costs to the participants. Social costs are difficult to quantify. Transactions costs in the form of foregone earnings for workfare can be on the order of one quarter to over a half of the wage paid. Ravallion and Datt, 1995 report them as one quarter for the Maharashtra Income Guarantee Scheme. Ravallion and Jalan, xxxx report them for Argentina's *Trabajar* to be about half of gross earnings. Newman, Jorgensen and Pradhan, 1992 calculate them as being 60 percent for workers on Bolivia's ESF.

Non-wage costs in workfare are also significant. Skilled labor, materials, equipment and administration are all important inputs and incur considerable costs. The share of unskilled labor in total costs tends to vary from a low of around 20 percent to about 60 percent at the higher end of the spectrum. Occasionally programs may have higher wages shares but these programs tend to operate only a narrow portfolio of work types (which can limit their size or impact) and/or put less emphasis on the long run return to the works done (Subbarao *et al.* 1997).

It must also be acknowledged that though the targeting part of workfare programs can be simple, administering the program as a whole is complex. Most programs run a plethora of small works sites, widely scattered over the whole country or the poorer areas of it. Centrally run programs may have to do the whole gamut of tasks from identifying works, designing the engineering specifications, procuring materials, hiring workers, supervising construction, etc. In Social Funds, some of these roles are delegated to the soliciting agencies with the Social Fund limiting its role to that of financier and supervisor. Even so, it is a complex job. Where the public works program has features that will make it an especially useful anti-poverty tool – offering jobs during the slack agricultural season, offering short term or daily work, or guaranteeing employment within a certain distance of the worker's home, the administrative complexities can increase enormously. How well the program is administered in general will certainly influence its value and probably its size both in the short and long run.

In other sorts of programs that have transactions costs high enough to play an important role in targeting outcomes, these are usually as much the result of low administrative budgets and capacity as of intentional design and thus do not raise the costs found on the program budget, but rather those borne by the applicants.

Administrative costs for food price subsidy programs are usually rather low (and often unquantified). There may, however, be significant incentive costs in the economy depending on how the subsidy is applied and financed. Implicit taxation of the

agricultural sector or direct purchase by marketing boards at prices below those on the world market are fairly common and produce a chain of distortions in the sector. Rarer nowadays though once more commonly associated with general food price subsidies, use of disequilibrium exchange rates produces even more widespread distortions in the economy (Pinstrup-Andersen, 1988, Alderman 1992).

Political costs are usually low for self-targeting programs. Indeed, such programs can be very popular, though the reasoning will vary slightly by the type of self-selection used. Food subsidies may reach a very large share of the population and thus have many direct beneficiaries and supporters. Subsidies to basic public health or education services, or to add-on benefits attached to them, usually benefit from the halo of the desire to provide/human right to have access to these services. And again, a fair share of the population may use such providers for at least some services or some part of their life cycle. Benefits from workfare are usually much more finely targeted, but since workers on public works schemes are required to work, usually at jobs that are hard, uncomfortable and dirty, they are perceived to deserve their benefit. Thus issues of laziness or dependency don't arise, or can be dealt with by ensuring that in fact a serious work effort is required (and not just leaning on brooms).

### ***Appropriate Circumstances***

Self-targeting is especially desirable when other methods are less feasible than usual, notably where administrative capacity is particularly low, in crisis settings, and where incomes are irregular. The first case is perhaps obvious and more need not be said. In crisis settings, there can be a cascade of household into (deepened) poverty as jobs are lost, public services or transfers are cut, and household's coping abilities are exhausted. It is hoped that the crisis will quickly abate and that households would start to move out of poverty quickly as the economy picks up and their employment or wages recover. In such a setting, to be very accurate, a means tested or proxy-means tested program would have to be certifying and re-certifying many households very rapidly, a task which is daunting and expensive at best, and often completely infeasible. And proxy means tests may not even be accurate in a crisis, as they are usually based on largely static indicators. Similar issues can apply in settings where household incomes are quite uneven, and especially where they are unpredictable as well as uneven. Farmers can at least plan for the annual cycle of harvest sales. In Armenia, in contrast, qualitative poverty work (Gomart, 1998b) showed that many households had insufficient regular sources of income and moved in and out of poverty during the year as they managed to find a temporary job, sell a durable good, or receive a transfer from abroad, all of which were hard to predict.

### ***5.6 Community Based Targeting***

Of the 100 programs in our sample, 16 use community based methods. They are spread fairly evenly across continents and over a large range of program types. As described in section 4.1, we suspect that we have under-represented the use of this method, especially in low income countries and that those we have may perform unusually well. We know,

for example, that several of the programs that use community targeting use other methods as well that may be responsible for a good deal of their power. Mexico's PROGRESA, for example, first uses a poverty map to select poor areas to work in, then a proxy means test to screen out non-poor residents of those areas, then the community based targeting to finetune the proposed beneficiary lists.

### ***How does community based targeting work?***

In this case a community leader or group of community members whose principal functions in the community are not related to the transfer program will decide who in the community should benefit and who should not. School officials or the parent-teacher association may determine entry to a school-linked program. A group of village elders may determine who receives grain provided for drought relief. Or special committees composed of common community members or a mix of community members and local officials may be specially formed to determine eligibility for a program.

There is little documented evidence on community-based targeting as compared to other methods. Conning and Kevane, 2000 [update reference], provide the most comprehensive summary and conclude that we know little. The ideas contained in this section are therefore rather more speculative than in most parts of the paper.

### ***What determines how well community-based methods work?***

Perhaps the most persuasive rationale for community-based targeting is that local actors have more information available to them or at lower costs than would officials from a welfare agency. A ministry social worker may know only what the applicant puts on the application form in the office, or what they can see on a brief visit to the applicant's home which will be costly to the agency in terms of time and transport, and during which the applicant may be trying to conceal information. Community members may know much more about the applicant's resources, needs, and the reasons for them without even having to gather any data beyond what they see in the course of daily transactions. Complementary to the argument based on information is one based on social capital. Where community members are enmeshed in multiple relationships, they may have less incentive or face greater repercussions if they hide or misuse information.

A second reason to choose community-based targeting is to allow communities to define need as they think most appropriate. National formulae, as discussed in the section on proxy means tests, may not work very well in all places. Access to networked utilities may be key markers of welfare in urban areas, but not mean much in rural areas where even the wealthy are off network. Or the differing definitions can be routed in deeper cultural norms of what constitutes well-being.<sup>18</sup>

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<sup>18</sup> Note that allowing for different definitions or interpretations of what constitutes need makes the evaluation of targeting outcomes difficult. If outcomes in different places are not the same when measured by a given standard (e.g. annual household consumption per capita as collected on a detailed household survey questionnaire) is one outcome better and the other worse? Or does each represent an optimal targeting where the definitions of need are different? If the outcomes are not strongly correlated with

*What are the limitations of community-based targeting?* Community-based targeting, by definition, gives decision-making power to a person or group whose principal responsibility is not related to the transfer program. That agent may therefore have incentives other than, or at least additional too, providing the best targeting. The community may wish to avoid dissent, the nurse or teacher may want to build a relationship with the parents of the children she serves, the municipal worker may want to get as many resources for the municipality from the national budget as possible, the mayor may wish to be re-elected, the local religious leader may wish to reinforce the social norms of his religion. The multiple interests of the community actors implies that even if they have excellent information on who is needy, they may not use that information in the way that the central welfare agency funding the program might prefer.

The duty of serving as targeting agent may also impinge upon the actors' abilities to perform their original and primary functions in the community. If the teacher says that the family should not qualify for free textbooks, will the parents listen as attentively when she says that their child behaves badly in class? If a neighbor says that a community member should not get a benefit, will the denied applicant be as likely to help him out when he is on hard times? Such problems indicate that there may be costs to community targeting that are not easily identified or quantified.

Community-based targeting may also perpetuate local power structures. This may mean that local leaders will direct benefits to their families or client networks. Or it may mean that patterns of exclusion of certain groups -- minority ethnicities are a predominant example, or those with HIV/AIDS, the disabled, unwed mothers, etc. are reinforced. Conning and Kevane cite examples -- in Slovak villages Roma were excluded, and in Mexican *ejidos* chola-speakers were excluded by non-chola-speakers.

Finally, the very notion of community is problematic. The idea of community-based targeting is easiest to apply in small communities where it is clear who is and isn't a member, where everyone belongs to one and only one community, and where members know each other. This model may hold reasonably well for rural areas where households are clustered in villages, or for urban areas with well-defined and tightly-knit neighborhoods. But a great deal of the world lives in areas where community is more amorphous. Some rural areas have dispersed settlement patterns. In many urban areas, close neighbors may not know each other well, and boundaries between "communities" may be very blurry, indeed pertinent communities may not be geographic but defined by social criteria.

### ***What are the costs associated with community-based targeting?***

Community-based targeting usually has, or at least appears to have, low administrative costs. Often community actors involved in community-based targeting are not paid for their time or expertise. They may or may not receive assistance in covering the travel

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annual household consumption per capita are they inaccurate? Or highly accurate according to the local definition?



costs of doing their jobs thoroughly or for stationary, communications and the like. These costs exist, but may be passed to the community or agency for which the community leader works rather than appear on the welfare program's budget.

An important administrative task and cost of community-based methods (and one that is not always given enough emphasis) is that involved in working with many thousands of individuals who are not dedicated staff of the program. Few or none of them will start out knowledgeable about the program and its workings. Some may not be sympathetic to them. They won't have the same incentives to learn about or follow program rules that staff would and will have many constraints on their time that a dedicated staff wouldn't. Illiteracy or lack of fluency in the national language will be greater problems than when dealing with a cadre of civil servants. And there will be no pre-established channel of communications. Thus the job of training and motivating actors will be even greater than if they were staff and, if community-based targeting is to work, must receive due attention and creativity.

### *Appropriate Circumstances*

Community based targeting often seems to be chosen where other options just don't seem feasible in the circumstance. Means testing or proxy means testing may be far too demanding administratively. Geographic and demographic targeting may result in too large a group of beneficiaries to be served by the budget, or groups that are not very poor on average. Self-targeting may not be very applicable to the type of program being designed.

*In what circumstances will community-based targeting probably work best?* We have already indicated that one premise of the method is a well-defined community with good social consensus. We suspect that the method will work best when the community is asked to choose only a few members for program receipt, say five or ten percent, rather than when closer to half the community might benefit. For one thing, the method is most often used in very poor countries where the difference in incomes between the moderately poor and poorer may be in terms of nickels a day and thus hard for even those in the community to observe and agree on. And when benefits can go to only a very few, most community members will stand little chance of getting them and may thus act in a more dis-interested or altruistic way in helping to make or allowing to stand the decisions about who should benefit.

Community-based targeting will probably work best where there is a hard budget constraint given to the community – so many rations or scholarships or fee waivers to grant. Certainly this will help with overall program planning. Otherwise the community will have no incentive to ration, and may just declare everyone poor, or a large share of the population, at any rate. Such a hard budget constraint will usually be accompanied by some geographic targeting in order to allocate the budget to the community.

Community-based targeting may also work relatively well in conjunction with demographic targeting. It may, for example, be a suitable tool for choosing among

widows if widows as a whole are too numerous for a program to help, or if widowhood is not highly correlated with poverty on average because the distribution of widow's welfare is bimodal. The community may be very well able to distinguish between types of widows -- the matriarch of a family with several adult income earners, who is co-resident or supported by one or more of them, versus the very old, frail woman living alone who receives no support from family.

We also suspect that the problems with undermining the principal roles of those involved in community-based targeting decisions may be minimized if the program is temporary or gives relatively small benefits.

## **6. Summary and Conclusions**

There are two levels of conclusions to be drawn from a paper like this. The first is messages that are very broad:

- Targeting is a tool, not an end. The costs and benefits of targeting must be assessed in each specific circumstance to decide whether, how finely, and with what instrument it is appropriate to target.
- The state of the art as practiced around the world is highly variable. The median program in our data base provides a quarter more resources to the poor than would random allocations. The best ten performers deliver to the poor two to four times the share of benefits that they would get with random allocations. However, in over a quarter of cases, targeting was regressive.
- There is no clearly preferred method for all types of programs or all country contexts. In our sample of programs, 84 percent of the variance was due to difference within targeting methods, and only 16 percent due to differences across methods. Differences in targeting performance within program type and within regions were also very high, accounting for 71 and 72 percent of differences respectively. Some matches between methods and programs or methods and settings are better than others. Examples are given in Table 5.1, though even these patterns are not without exceptions.
- Almost all methods have resulted in good incidence in their best cases. Details of how a method is implemented will have a great deal of force in determining the outcomes achieved, perhaps even more than the choice of targeting method.
- It very often works well to use multiple targeting methods for a single program.

Today these statements sound almost like platitudes. Less than ten years ago, they were findings and, to some people, surprising findings. The platitudes of that day were bold statements that, depending on the speaker's point of view, either proclaimed the panacea-like virtues of targeting or dismissed it as absolutely impossible or undesirable. Thus the platitudes have evolved and indeed now reflect that a much more nuanced view of targeting is widespread. Debate continues with respect to the role in the poverty reduction agenda of transfer programs vis-à-vis broad investments in basic health, education and economic infrastructure. Once that debate was often couched in terms of

whether targeting was good or bad. Now it is more often and more properly stated as about the balance of interventions.

Debate also continues, and this paper contributes its second level of conclusions to issues about conclusions about the pros and cons, the “how to”, and the suitable circumstances for each targeting method. We have attempted to summarize the long discussion from section 5 in a single summary statement in Table 5.1. This is an area where the state of the art is moving forward as countries implement, evaluate and reform programs.

**Table 4.1: The distribution of targeting methods by region and country income levels**

	Individual assessment		Categorical					Self selection			Community assessment
	Means tests	Proxy means tests	Geography	Age - elderly	Age - children	Women	Other	Work	Consumption	Community bidding	
<b><i>By Regions</i></b>											
LAC, 63	5	4	18	4	12	2	4	4	0	6	4
Eastern Europe and FSU, 26	7	1	1	4	6	0	3	1	0	1	2
MENA, 19	5	0	1	0	0	0	0	0	12	1	0
Sub-Saharan Africa, 22	3	0	3	4	1	1	1	2	4	1	2
South Asia, 39	1	1	14	0	1	4	4	4	7	0	3
East Asia, 32	3	1	6	4	7	0	4	1	0	1	5
<b><i>By Income Level</i></b>											
Low, 66	2	2	20	3	5	5	8	5	7	3	6
Low-middle, 61	11	1	9	7	7	1	3	4	11	3	4
Middle, 74	11	4	14	6	15	1	5	3	5	4	6
<b>Total, 201</b>	<b>24</b>	<b>7</b>	<b>43</b>	<b>16</b>	<b>27</b>	<b>7</b>	<b>16</b>	<b>12</b>	<b>23</b>	<b>10</b>	<b>16</b>

Notes. 1. Many programs use more than one targeting method. Thus the total number of targets methods tallied is greater than the number of programs. 2. Low income countries have per capita GDP in PPP dollars below 1000, low-middle income countries have per capita GDP between 1000 and 2500, and middle income countries have per capita GDP above 2500. These cutoffs divide our sample approximately into terciles, they do not correspond to cutoffs from other recognized sources (e.g. in the 2001 WDR the corresponding cutoffs are \$755 and \$2996).

**Table 4.2: The distribution of interventions by region and country income levels**

	Transfers			Subsidies		Public works for	
	Cash	Near cash	Food	Food	Non-food	Job creation	Program output (e.g. social funds)
<b><i>By Regions</i></b>							
Latin America and Caribbean, <i>27</i>	11	3	3	0	1	4	5
Eastern Europe and FSU, <i>18</i>	16	1	0	0	0	0	1
Middle East and North Africa, <i>13</i>	0	0	0	13	0	0	0
Sub-Saharan Africa, <i>12</i>	3	0	1	4	1	2	1
South Asia, <i>17</i>	0	11	2	0	0	4	0
East Asia, <i>13</i>	4	1	4	0	2	1	1
<b><i>By Income Level</i></b>							
Low, <i>35</i>	9	12	3	0	1	5	5
Low-middle, <i>32</i>	9	3	2	12	2	3	1
Middle, <i>33</i>	16	1	5	5	1	3	2
<b>Total, <i>100</i></b>	<b>34</b>	<b>16</b>	<b>10</b>	<b>17</b>	<b>4</b>	<b>11</b>	<b>8</b>

Notes. 1. Numbers in italics are number of interventions by region and income level. 2. Low income countries have per capita GDP in PPP dollars below 1000, low-middle income countries have per capita GDP between 1000 and 2500, and middle income countries have per capita GDP above 2500. These cutoffs divide our sample approximately into terciles, they do not correspond to cutoffs from other recognized sources (e.g. in the 2001 WDR the corresponding cutoffs are by \$755 and \$2996).

**Table 4.3: The distribution of targeting methods by type of intervention**

	Individual assessment		Categorical					Self selection			Community assessment
	Means tests	Proxy means tests	Geography	Age - elderly	Age - children	Women	Other	Work	Consumption	Community bidding	
<i>Transfers</i>											
Cash, <i>32</i>	13	4	7	12	16	2	8	1	0	0	5
Near cash, <i>18</i>	3	3	9	1	2	0	3	0	7	0	0
Food, <i>10</i>	0	0	8	2	8	3	3	0	0	1	5
<i>Subsidies</i>											
Food, <i>20</i>	5	0	1	0	0	0	0	0	16	1	0
Non-food, <i>4</i>	3	0	1	1	1	0	1	0	0	0	1
<i>Public Works</i>											
Job creation, <i>11</i>	0	0	9	0	0	2	1	11	0	0	3
Program output, <i>8</i>	0	0	8	0	0	0	0	0	0	8	2
<b>Total, 201</b>	<b>24</b>	<b>7</b>	<b>43</b>	<b>16</b>	<b>27</b>	<b>7</b>	<b>16</b>	<b>12</b>	<b>23</b>	<b>10</b>	<b>16</b>

Notes. 1. Numbers in italics are number of interventions. 2. Low income countries have per capita GDP in PPP dollars below 1000, low-middle income countries have per capita GDP between 1000 and 2500, and middle income countries have per capita GDP above 2500. These cutoffs divide our sample approximately into terciles, they do not correspond to cutoffs from other recognized sources (e.g. in the 2001 WDR the corresponding cutoffs are \$755 and \$2996).

**Table 4.4: Targeting performance by intervention**

Country	Program Number	Performance score “40, 20, 10, poor” a	Rank by a	Performance score “10, 20, 40, poor” ?	Rank by ?
Argentina	101	4.00	1	6.00	1
Estonia	210	3.50	2	3.50	4
Brazil	105	2.85	3	2.85	5
Hungary	214	2.72	4	2.72	7
Albania	201	2.65	5	3.60	2
Bangladesh	501	2.33	6	2.33	12
Thailand	608	2.15	7	2.15	16
Poland	220	2.10	8	2.10	17
Chile	106	2.08	9	2.85	6
Nicaragua	124	2.02	10	3.26	3
Honduras	123	1.99	11	2.21	13
Chile	109	1.98	12	2.65	8
Bolivia	103	1.93	13	2.50	10
Chile	107	1.83	14	2.50	11
Peru	120	1.80	15	2.10	18
Chile	110	1.78	16	2.55	9
Bulgaria	207	1.65	17	2.20	14
Mexico	118	1.60	18	1.60	23
India	5083	1.58	19	1.58	24
México	117	1.56	20	2.20	15
Costa Rica	113	1.55	21	1.65	22
Colombia	111	1.50	22	1.75	21
Costa Rica	112	1.48	23	1.95	19
Jamaica	1161	1.45	24	1.45	28
Zambia	407	1.35	25	1.40	29
India	5081	1.33	26	1.33	33
Latvia	216	1.33	27	1.50	26
Bolivia	102	1.30	28	1.10	40
Jamaica	1162	1.30	29	1.55	25
Sri Lanka	514	1.25	30	1.35	32
India	5084	1.25	31	1.25	34
Honduras	115	1.25	32	1.90	20
Chile	108	1.25	33	1.40	30
South Africa	4041	1.23	34	1.23	35
India	5086	1.20	35	1.20	36
Morocco	3061	1.18	36	1.15	37
India	5086	1.13	37	1.13	38
Armenia	203	1.13	38	1.40	31
Bulgaria	206	1.10	39	1.10	41
Peru	1211	1.10	40	1.15	39
Nicaragua	119	1.10	41	0.90	49
India	509	1.08	42	1.08	43
Zambia	408	1.08	43	1.50	27
Tunisia	3072	1.03	44	1.05	44
Latvia	217	1.00	45	1.10	42
Hungary	212	1.00	46	1.00	46
Egypt	3022	1.00	47	0.75	57
India	5082	1.00	48	1.00	47

Egypt	3021	0.98	49	1.05	45
Egypt	3024	0.95	50	0.90	50
Egypt	3023	0.95	51	0.90	51
Bulgaria	205	0.95	52	0.95	48
Armenia	202	0.93	53	0.80	55
Tunisia	3071	0.93	54	0.85	53
Poland	218	0.90	55	0.90	52
Peru	1212	0.85	56	0.85	54
Morocco	3062	0.85	57	0.75	58
South Africa	4043	0.79	58	0.79	56
Latvia	215	0.70	59	0.50	62
Algeria	301	0.70	60	0.60	60
South Africa	4044	0.68	61	0.68	59
Morocco	3063	0.60	62	0.55	61
Armenia	204	0.58	63	0.30	66
Mozambique	402	0.49	64	0.49	63
Yemen	308	0.45	65	0.35	65
Viet Nam	614	0.40	66	0.40	64
South Africa	4042	0.28	67	0.28	67



**Table 4.5: Disaggregating targeting performance across and within program type, targeting method and region**

Program type	No. of Prgms	Theil	Method	No. of Prgms	Theil	Region	No. of Prgms	Theil	Income group	No. of Prgms	Theil	Incidence measure	No. of Prgms	Theil
Cash transfer	22	.12	Geographic	24	.08	Latin America	23	.06	Low	18	.08	Tran40	41	.06
Near cash transfer	11	.03	Some form of means testing	20	.11	East & Central Europe	15	.14	Middle	23	.04	Tran20	6	.22
Food transfer	4	.01	Both geographic and means testing	2	.00	Middle East & North Africa	11	.03	High	26	.13	Tran10	4	.09
Food subsidy	15	.05	Other	21	.12	Sub-Saharan Africa	7	.10				TranPWB	4	.21
Non-food subsidy	2	.00				South Asia	9	.03				TranPS	4	.11
Public works	5	.15				East Asia and Pacific	2	.26				BenP	8	.04
Social fund	8	.08												
All	67	.11	Total	67	.11	Total	67	.11	Total	67	.11	Total	67	.11
Within		.08	Within		.10	Within		.08	Within		.10	Within		.09
Between		.03	Between		.02	Between		.03	Between		.02	Between		.03
Per cent of variation explained by within group variation		.71	Per cent of variation explained by within group variation		.84	Per cent of variation explained by within group variation		.72	Per cent of variation explained by within group variation		.84	Per cent of variation explained by within group variation		.78

**Table 4.6: Determinants of targeting performance**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
<b><i>Income</i></b>	0.00015 (2.80)**	-	-	-	0.0001 (1.11)	0.00008 (1.44)	0.00014 (2.10)**	0.00023 (2.41)**
<b><i>Voice</i></b>	-	0.0083 (4.23)**	-	-	0.0045 (1.09)	-	0.0077 (3.11)**	0.0083 (1.67)*
<b><i>Government effectiveness</i></b>	-	-	0.0029 (0.61)	-	-0.006 (1.00)	-	-	-
<b><i>Inequality</i></b>	-	-	-	0.0186 (2.94)**	0.0119 (1.08)	0.01662 (2.44)**	-	-

Notes. 1. Estimates are based on quantile regression centred at the median with standard errors obtained via bootstrap resampling with 50 repetitions. 2. Absolute values of standard errors in parentheses. 3. \* significant at the 10% level; \*\* significant at the 5% level. 4. Included but not reported are a constant term and dummy variable equaling one if performance indicator based on shares accruing to the bottom decile. 5. Columns (1) through (7) based on a measure, column (8) based on ? measure. 6. Sample size is 66.

**Table 4.7: The impact of targeting method on targeting performance**

		<b>Impact on a measure</b>	<b>Impact on ? measure</b>
<b>Individual assessment</b>	Means testing, <i>17</i>	0.048 (0.38)	0.099 (0.44)
	Proxy means testing, <i>4</i>	0.243 (0.63)	0.312 (0.47)
	Community selection, <i>5</i>	0.880 (2.26)**	1.152 (2.61)**
<b>Categorical targeting</b>	Geographic, <i>25</i>	0.325 (2.01)**	0.508 (2.27)**
	Age – elderly, <i>8</i>	-0.302 (2.43)**	-0.279 (1.37)
	Age – children, <i>16</i>	0.147 (0.55)	-0.070 (0.20)
<b>Self-selection</b>	Consumption, <i>20</i>	-0.304 (1.59)	-0.273 (0.76)
	Work, <i>5</i>	0.194 (0.38)	0.504 (0.49)
	Community bidding, <i>9</i>	0.157 (0.62)	0.221 (0.60)

Notes. 1. Estimates are based on quantile regression centred at the median with standard errors obtained via bootstrap resampling with 50 repetitions. Each row reports the result of a separate regression. 2. Absolute values of standard errors in parentheses. 3. \* significant at the 10% level; \*\* significant at the 5% level. 4. Included but not reported are a constant term, measures of income, voice, and a dummy variable equaling one if performance indicator based on shares accruing to the bottom decile and a dummy variable combining self-selection and conditional action for children. 5. Numbers in italics are the number of interventions using that method. 6. Sample size is 66.

**Table 4.8: The impact of selected targeting methods on targeting performance by country income level**

		<b>Exclude poorest tercile of countries</b>	<b>Exclude richest tercile of countries</b>
<b>Individual assessment</b>	Means or proxy means testing	0.400 (2.07)**	0.077 (0.53)
<b>Categorical targeting</b>	Geographic	0.725 (2.21)**	0.122 (0.57)
	Age – children	0.176 (0.74)	0.154 (0.40)
<b>Self-selection</b>	Consumption	-0.701 (3.10)**	-0.119 (1.06)
	Community bidding	0.913 (2.14)**	0.131 (0.52)

Notes. 1. Estimates are based on quantile regression centred at the median with standard errors obtained via bootstrap resampling with 50 repetitions. Each row reports the result of a separate regression. 2. Dependent variable is impact on a measure. 3. Absolute values of standard errors in parentheses. 4. \* significant at the 10% level; \*\* significant at the 5% level. 5. Included but not reported are a constant term, voice and a dummy variable equaling one if performance indicator based on shares accruing to the bottom decile.

**Table 4.9: The impact of combining geographic with selected other targeting methods on targeting performance**

		(1)	(2)
<b>Geographic combined with:</b>	Age – children	0.492 (1.31)	0.519 (1.57)
	Consumption	0.817 (0.84)	0.988 (1.34)
	Work	0.146 (0.59)	0.364 (2.15)**
	Community bidding	0.193 (1.12)	0.209 (1.25)
	Community selection	0.799 (1.91)*	0.816 (1.62)

Notes. 1. Estimates are based on quantile regression centred at the median with standard errors obtained via bootstrap resampling with 50 repetitions. Each column reports the result of a separate regression. 2. Dependent variable is impact on a measure. 3. Absolute values of standard errors in parentheses. 4. \* significant at the 10% level; \*\* significant at the 5% level. 5. Column (1) includes but does not report a constant term, income, voice and a dummy variable equaling one if the performance indicator is based on shares accruing to the bottom decile. 6. Column (2) uses the same specification as Column (1) except that it excludes voice.

Figure 4.1: Targeting performance by region and income level (alpha measure)

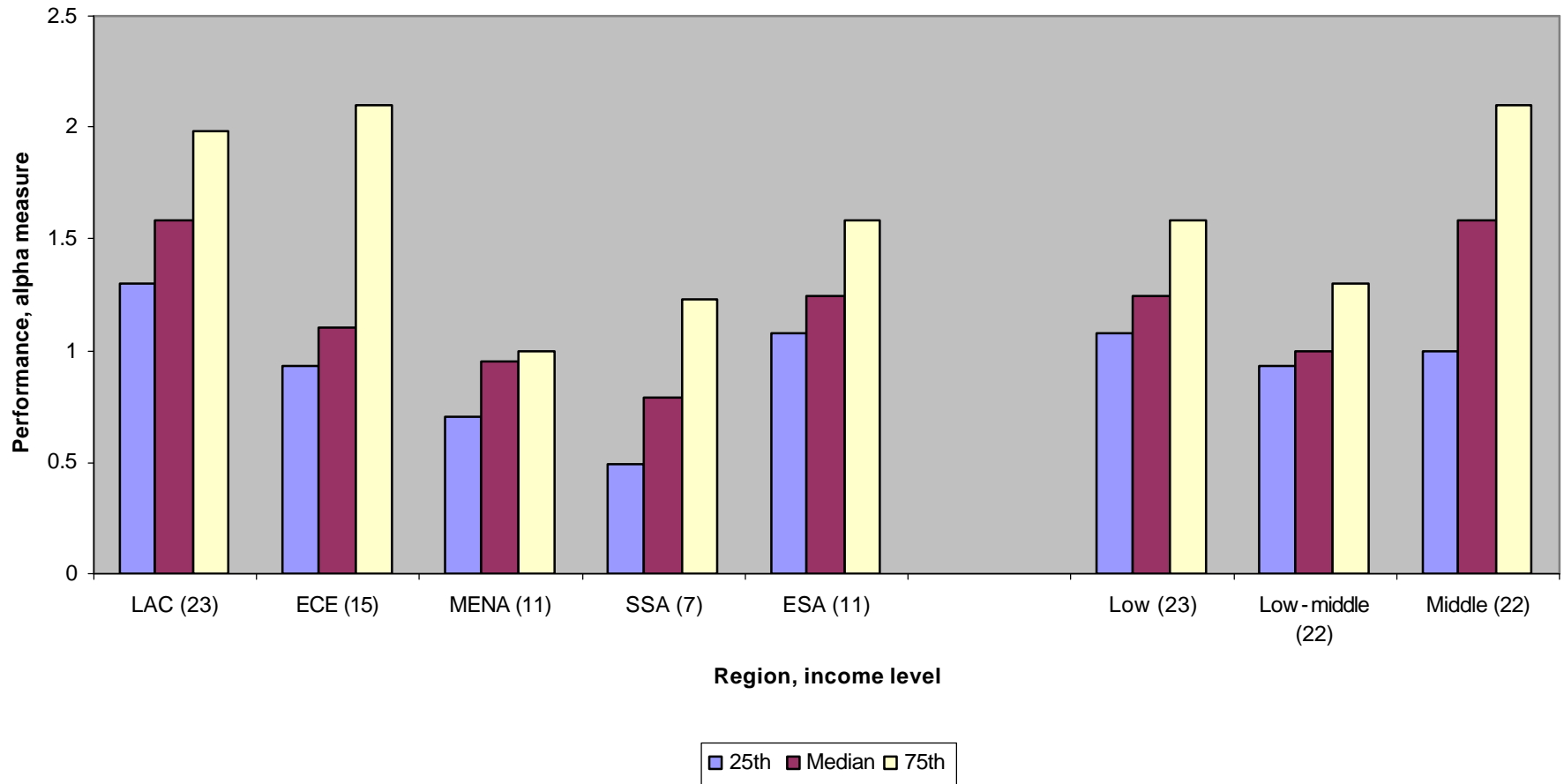


Figure 4.2: Targeting performance by method (alpha measure)

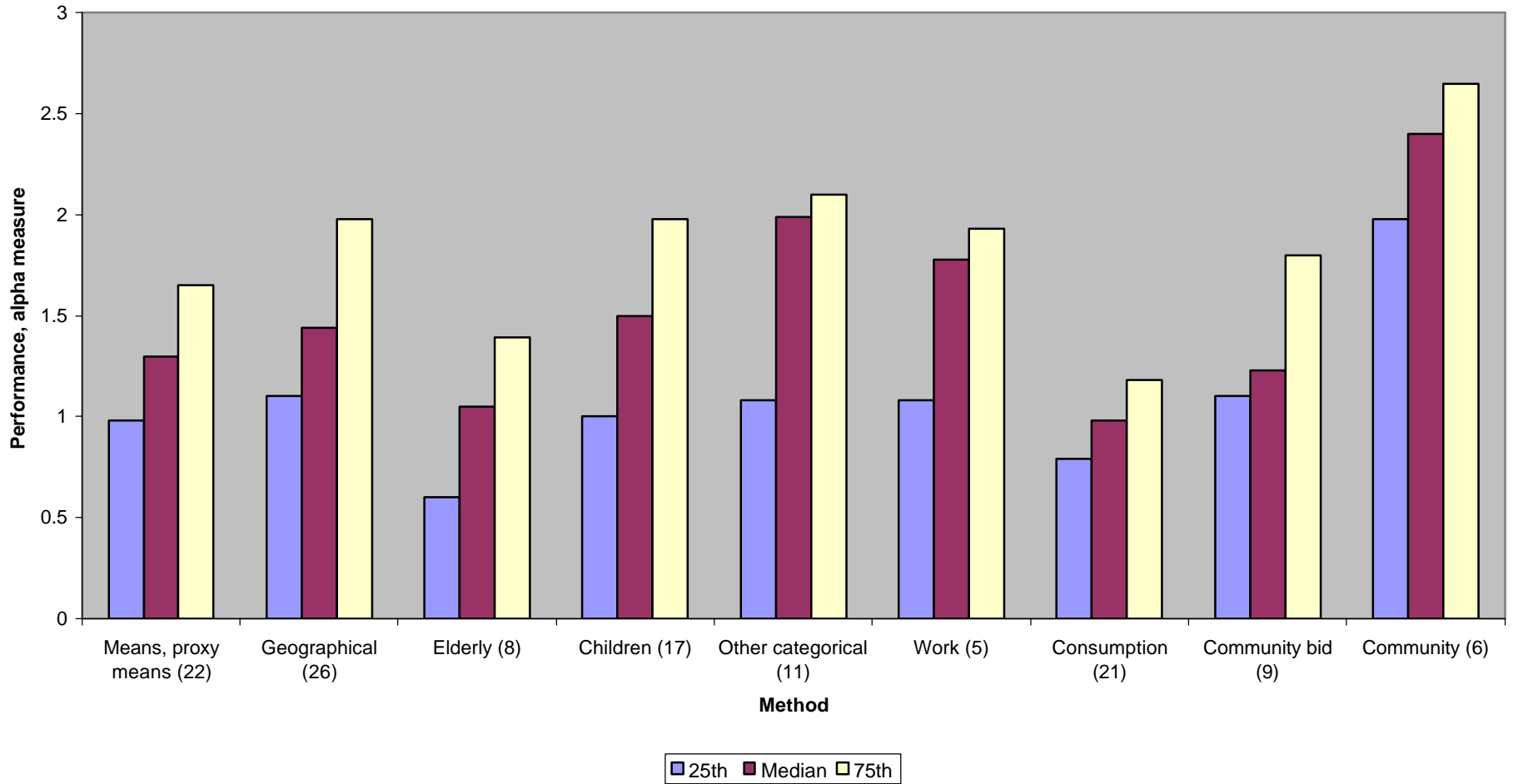
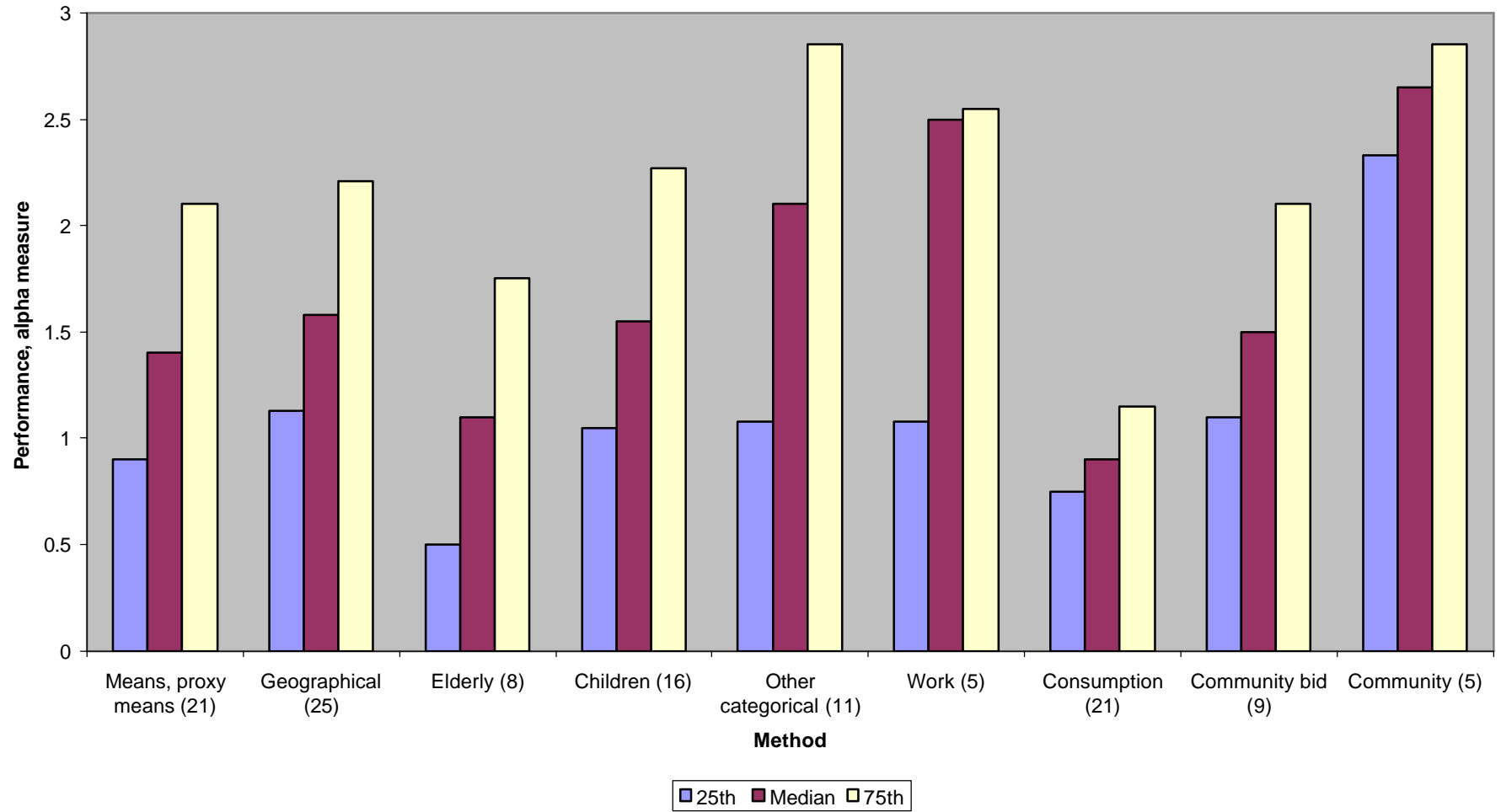


Figure 4.3: Targeting performance by method (omega measure)





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## Annex 1: Alternative Measures of Targeting Performance

In this annex we briefly describe a range of indices that are commonly used to evaluate the targeting performance of alternative transfer instruments. We distinguish between those indices that are based on the concept of a poverty line and those that are not. In doing so, we highlight the fact that all the indices commonly used can be seen as special cases of the so-called *distributional characteristic* commonly used in the literature on commodity taxation.<sup>19</sup>

For the purposes of evaluation, the point of departure is usually taken as a situation where the government has a fixed budget allocated to an existing program aimed at reducing poverty, and wishes to determine how effective this program is at achieving this objective relative to feasible alternatives for distributing the program budget to households. The program implementation typically involves two distinct steps. First, households are chosen to participate in the program (i.e. to be eligible for benefits) based on certain characteristics that are thought to be good (but not perfect) correlates of poverty (e.g. geographic location, asset ownership, and demographic composition). Second, households receive benefits determined by some predetermined schedule (e.g. a uniform transfer or transfers linked to family size or composition).

From the perspective of policy evaluation, two questions naturally arise: (i) How effective is the program at targeting "poor households", i.e. at identifying or promoting the participation of poor households in the program?, and (ii) How effective is it in terms of reducing poverty? The poverty-based approaches discussed below attempt to address each of these issues. Both start by identifying a *poverty line* based on some welfare index (here referred to as income, see Box A.1). Households (or individuals) with incomes below the poverty line are classified as "poor" and those above as "non-poor".

One commonly used approach to evaluate the targeting performance of alternative transfer instruments is to compare leakage and under-coverage rates. We formalize the notions of leakage and undercoverage as follows:

*Leakage*: The proportion of those who are reached by the program (i.e. are "in" denoted by  $i$ , as opposed to "out of", denoted by  $o$ , the program) who are classified as non-poor (errors of inclusion), or:

$$L = \frac{N_{np,i}}{N_i}$$

where  $N_{np,i}$  is the number of non-poor households in the program and  $N_i$  is the total number of households in the program.

*Under-coverage*: The proportion of poor households who are not included in the program (errors of exclusion), or:

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<sup>19</sup> See Ahmad and Stern (1991) for a more detailed discussion.

$$U = \frac{N_{p,o}}{N_p}$$

where  $N_{p,o}$  is the number of poor households who are left out of the program and  $N_p$  is the total number of poor households.

There are two obvious criticisms of this approach. Firstly, it ignores the seriousness of the targeting errors in so far as: (i) it does not differentiate between the erroneous inclusion of non-poor households lying just above the poverty line and those lying well above the line, and (ii) it does not differentiate between the erroneous exclusion of poor households just below the poverty line and those well below the poverty line. In both cases, the different errors are identically treated.<sup>20</sup> Secondly, it focuses only on who gets the transfers and not on how much households get (i.e. the size of the transfer budget). Thirdly, when comparing across programs it is often the case that those that score well on under-coverage simultaneously score badly on leakage. For example, so-called universal programs would be expected to score relatively well on under-coverage but badly on leakage, but this approach does not address the issue of trade-off. Much of the problem with this approach therefore lies in the fact that the relative social valuation of income transfers to different households (e.g. moderately versus extremely poor) is not made explicit, although it is obvious that all the poor are treated similarly and all the non-poor are also treated similarly even if the issue of their relative weights is ignored.

The other commonly used approach to evaluating the relative effectiveness of transfer instruments can be viewed as an attempt to incorporate the size of transfers and the budget explicitly into the analysis as well as how transfer levels are differentiated across households in different parts of the income distribution. Rather than asking how effective the program is at identifying the poor, it asks how effective it is at reducing poverty. It proceeds by comparing the relative impacts of the alternative instruments on the extent of poverty subject to a fixed common budget or, equivalently, the minimum cost of achieving a given reduction in poverty across instruments (see, for example, Ravallion and Chao, 1989; Ravallion, 1993).

The extent of poverty is then calculated using the set of measures due to Foster, Greer and Thorbecke (1984):

$$P_a = N^{-1} \sum_{i=1}^N \left(1 - \frac{y_i}{z}\right)^a I(y_i \leq z)$$

where  $y_i$  is income,  $z$  is the poverty line,  $N$  is the number of households, and  $I(\cdot)$  is an indicator function taking the value 1 if its argument is true (i.e. if the household lies below the poverty line) and zero otherwise (i.e. if the household is non-poor). The parameter  $a$  captures the extent of our concern for the severity of poverty, with higher values corresponding to a greater aversion to severe poverty. The most commonly used poverty measures can be seen as special cases of this family of measures, namely, the

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<sup>20</sup> This shortcoming can be overcome somewhat by plotting the percentages of households in, say, each decile that are mistargeted against mean decile incomes. Mistargeting left of the poverty line represents undercoverage within each decile, while that to the right represents leakage by decile. See Skoufias and Coady (2002) for more discussion.

poverty headcount index (a=0, or the percentage of households that are poor), the poverty gap (a=1, which captures the depth of poverty) and the severity index (a=2, which unlike the poverty gap is sensitive to redistribution among the poor).

For evaluation purposes, the use of the poverty headcount index is obviously undesirable since under this measure programs that concentrate the budget on households just (as opposed to far) below the poverty line appear to perform better. Using the poverty gap measure, one is indifferent to who among the poor receive transfers.<sup>21</sup> Only in the case of the severity index is there a higher value given to instruments that transfer more of the budget to the poorest households.

An alternative to the above performance indices is the so-called *distributional characteristic* more commonly used in the literature on commodity taxation.<sup>22</sup> This is defined as:

$$I = \frac{\sum_h \beta^h T^h}{\sum_h T^h} = \sum_h \beta^h q^h \dots\dots\dots(1)$$

where  $\beta^h$  is the social valuation of income transferred to household h (or its “welfare weight”),  $T^h$  is the level of the transfer to the household and  $q^h$  is each household’s share of the total program budget. The attraction of this index is that welfare weights are made explicit and all of the above can be seen as special cases in terms of how they implicitly specify welfare weights. For example, if (consistent with the poverty gap) poor households are given a welfare weight of unity and non-poor households a weight of zero, and we further assume that all beneficiary households receive the same level of transfer, then this index collapses to (1-L), the proportion of households receiving transfers that are classified as poor. If, in addition, we know the level of benefits received by beneficiaries, then it collapses to the share of the program budget received by poor households. Where the “poor” are defined as households falling within the bottom deciles (e.g. 20 percent or 40 percent) of the national income distribution, similar indices can be calculated.

An alternative to specifying welfare weights (either implicitly or explicitly) is to calculate the share of the program budget going to, say, the various deciles or quantiles of the national income distribution. The numbers can relate to either proportions of beneficiaries or proportion of total transfers. One can focus on whatever part of the distribution that one wishes, although one should be clear that this implicitly involves specifying welfare weights. For example, focusing on the share of the transfer budget accruing to the bottom 20 percent of the distribution is equivalent to attaching a welfare

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<sup>21</sup> This is strictly only true for small transfers, i.e. small enough not to bring any of the poor above the poverty line. For larger transfers, there is a penalty equal to the excess of the transfer above a household’s poverty gap. In this sense, for a given transfer amount, the poverty impact is higher if it is concentrated on those whose poverty gaps are greater than the transfer amount. *Ceteris paribus*, this holds true for all poverty measures with a>0.

<sup>22</sup> See Coady and Skoufias (2001) and Coady (2001) for more detailed discussion.

weight of unity to these households and zero to others. If, in addition to the shares of total transfers received by each decile, one also presents mean incomes, then one provides sufficient information for the calculation of the distributional characteristic. Despite the fact that such information is intuitively appealing and straightforward to calculate (given access to the appropriate data), it is surprising how many studies fail to present this basic information.

Finally, an important determinant of the overall targeting performance of a program is the amount of the overall program budget (B) absorbed by program administrative costs (C) and by actual transfers to households (T). For example, if we take as our performance indicator the share of the *budget* accruing to the bottom 40 percent of the income distribution (i.e. the “the poor”), then the overall performance indicator (2) can be written as:

$$2 = 2_p * (1 - 2_f) * 2_t$$

where  $2_p$  is the proportion of actual transfers going to the poor,  $2_f$  is forgone income as a proportion of transfers, and  $2_t$  is the share of transfers in the program budget. More generally, costs can be incorporated into the analysis by including them in the denominator of (1). Note, however, that from the perspective of targeting one is especially interested in the relationship between the level of costs incurred because of the decision to target transfers to the poor and the improved targeting performance resulting from these extra costs. So while from this perspective it is always desirable to reduce the level of non-targeting-related program administrative costs, higher targeting costs are acceptable if they lead to a better targeting of transfers. When interpreting the relative size of administrative costs across programs it is also important to recognize that some costs are fixed (i.e. independent of the number of households included in the program and/or of the transfer levels given to households) so that relative the cost-effectiveness of programs is very sensitive to the size of the program. Focusing on fixed targeting-related costs, this means that expensive targeting methods are only likely to be warranted for large programs (i.e. programs with large transfer levels and/or a large number of beneficiaries).<sup>23</sup>

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<sup>23</sup> See Coady, Perez and Vera-Llamas (2000) for more detailed discussion.

## Annex II: Program List

ID	Country	Program	Means Test	Proxy-Means-Test	Geographic	Demographic-Elderly	Demographic-Children	Demographic-Gender	Other-Categorical	Work Requirement	Food Commodity	Community Biddings	Community Based	Type
101	Argentina	Trabajar			Yes					Yes				Public Works-Jobs
102	Bolivia	SIF projects			Yes							Yes		Public Works-Infrastructure
103	Bolivia	ESF jobs			Yes					Yes				Public Works-Jobs
104	Bolivia	Bonosol				Yes								Cash
105	Brazil	RPAP			Yes							Yes	Yes	Public Works-Infrastructure
106	Chile	CAS-SUF		Yes			Yes		Yes					Cash
107	Chile	CAS-PASIS		Yes		Yes								Cash
108	Chile	CAS-Viviendas		Yes										Cash
109	Chile	Lunches			Yes		Yes						Yes	Food in-kind
110	Chile	PEM/POJH								Yes				Public Works-Jobs
111	Colombia	Housing sub	Yes											Non-food Price
112	Costa Rica	Noncontpens	Yes			Yes								Cash
113	Costa Rica	Lunches			Yes		Yes							Food in-kind
1141	Honduras	BMJF	Yes		Yes		Yes						Yes	Cash
1142	Honduras	BMI			Yes		Yes		Yes					Cash
115	Honduras	SIF projects			Yes							Yes		Public Works-Infrastructure
1161	Jamaica	Food stamps -MCH					Yes		Yes					Near Cash
1162	Jamaica	Food stamps -means tested	Yes			Yes			Yes					Near Cash
117	Mexico	PROGRESA		Yes	Yes		Yes						Yes	Cash
118	Mexico	Liconsa	Yes		Yes		Yes							Near Cash
119	Nicaragua	SIF projects			Yes							Yes		Public Works-Infrastructure
120	Peru	Vaso de Leche			Yes		Yes					Yes		Food in-kind
1211	Peru	SIF projects			Yes							Yes		Public Works-Infrastructure
1212	Peru	SIF jobs			Yes					Yes				Public Works-Jobs
122	Venezuela	SUF			Yes		Yes							Cash
123	Honduras	PRAF			Yes		Yes	Yes						Cash
124	Nicaragua	RPS			Yes		Yes	Yes						Cash
201	Albania	NE							Yes				Yes	Cash
202	Armenia	SIF			Yes							Yes		Public Works-Infrastructure
203	Armenia	Family benefit					Yes							Cash
204	Armenia	Humanitarian aid		Yes										Near Cash
205	Bulgaria	Family allowance					Yes							Cash
206	Bulgaria	Pensions				Yes								Cash
207	Bulgaria	Social assistance	Yes											Cash

210	Estonia	Social assistance	Yes								Cash
211	Hungary	Pensions		Yes							Cash
212	Hungary	Family allowance			Yes						Cash
214	Hungary	Social assistance	Yes								Cash
215	Latvia	Pensions		Yes							Cash
216	Latvia	Family allowance			Yes						Cash
217	Latvia	Social assistance	Yes	Yes	Yes						Cash
218	Poland	Family allowance	Yes		Yes						Cash
220	Poland	Social assistance	Yes				Yes				Cash
223	Russia	Social assistance	Yes					Yes			Cash
224	Uzbekistan	Social assistance					Yes			Yes	Cash
301	Algeria	targeted food sub							Yes		Food Price
3021	Egypt	Bread	Yes						Yes		Food Price
3022	Egypt	Flour	Yes						Yes		Food Price
3023	Egypt	Sugar	Yes						Yes		Food Price
3024	Egypt	Cookoil	Yes						Yes		Food Price
303	Egypt	Social fund		Yes						Yes	Food Price
304	Jordan	Targeted food sub	Yes						Yes		Food Price
3061	Morocco	Targeted food sub, flour							Yes		Food Price
3062	Morocco	Targeted food sub, sugar							Yes		Food Price
3063	Morocco	Targeted food sub, cooking oil							Yes		Food Price
3071	Tunisia	1990							Yes		Food Price
3072	Tunisia	1993							Yes		Food Price
308	Yemen	Targeted food sub							Yes		Food Price
4011	Ethiopia	Food aid		Yes	Yes		Yes				Yes Food in-kind
4012	Ethiopia	FFW		Yes					Yes		Public Works-Jobs
402	Mozambique	GAPVU	Yes		Yes	Yes		Yes			Cash
403	Namibia	Pensions			Yes						Cash
4041	South Africa	VAT exemptions, maize							Yes		Food Price
4042	South Africa	VAT exemptions, fresh milk							Yes		Food Price
4043	South Africa	VAT exemptions, beans							Yes		Food Price
4044	South Africa	VAT exemptions, vegetable oil							Yes		Food Price
405	South Africa	Pensions	Yes		Yes						Cash
406	South Africa	Public works							Yes		Yes Public Works-Jobs
407	Zambia	Housing	Yes								Non-food Price
408	Zambia	Social funds		Yes						Yes	Public Works-Infrastructure
501	Bangladesh	FFE		Yes		Yes	Yes	Yes			Yes Food in-kind



502	Bangladesh	StatutoryRation								Near Cash
503	Bangladesh	Foodgrain ration					Yes			Near Cash
504	Bangladesh	VGD		Yes		Yes	Yes			Yes Food in-kind
505	Bangladesh	FFW		Yes		Yes		Yes		Public Works-Jobs
506	Bangladesh	RMP		Yes		Yes		Yes		Yes Public Works-Jobs
5081	India	Rice		Yes					Yes	Near Cash
5082	India	Wheat		Yes					Yes	Near Cash
5083	India	Jowar		Yes					Yes	Near Cash
5084	India	Edoils		Yes					Yes	Near Cash
5085	India	Sugar		Yes					Yes	Near Cash
5086	India	Kerosene		Yes					Yes	Near Cash
509	India	JRY		Yes			Yes	Yes		Public Works-Jobs
510	India	MEGS		Yes				Yes		Public Works-Jobs
511	India	TPDS - UP		Yes	Yes					Near Cash
513	Pakistan	Flour ration		Yes					Yes	Near Cash
514	Sri Lanka	Food stamps	Yes							Near Cash
601	Indonesia	OPK		Yes						Near Cash
602	Indonesia	Padat karya PPDM-DKE			Yes			Yes		Yes Public Works-Jobs
603	Indonesia	Scholarships		Yes		Yes				Yes Cash
604	Indonesia	JPS-BK		Yes						Yes Non-food Price
605	South Korea	Cash - LPS	Yes		Yes	Yes				Cash
606	South Korea	Cash - TLPS	Yes					Yes		Cash
607	Philippines	Lunches				Yes				Yes Food in-kind
608	Thailand	Social fund		Yes					Yes	Yes Public Works-Infrastructure
609	Thailand	Health card	Yes		Yes	Yes		Yes		Non-food Price
610	Thailand	School lunch		Yes		Yes				Food in-kind
611	Thailand	School milk		Yes		Yes				Food in-kind
612	Viet Nam	Relief			Yes	Yes		Yes		Food in-kind
614	Viet Nam	Pensions/social relief			Yes			Yes		Cash

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