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## Reaching the Poor with Poverty Projects: What is the Evidence on Social Returns?

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**Reaching the Poor with  
Poverty Projects:  
What is the Evidence on  
Social Returns?**



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## ABSTRACT

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Poverty targeting programs can in principle be assessed as projects using the tools of either cost-benefit or cost-effectiveness analysis. In practice where quantitative assessments have been made they are principally a form of cost-effectiveness calculations based on costs per unit of benefit received by the poor.

Many poverty programs appear high cost due to the targeting problems of under-coverage (as some of the poor are excluded) and leakage (as some beneficiaries are not poor).

Problems also arise for a number of reasons including lack of funding, difficulties in identifying who the poor are, technical errors of design and weak governance.

This paper discusses conceptual issues and draws on empirical evidence from five country surveys commissioned by the ADB Institute. It concludes that poverty targeting remains important but schemes must be modest and narrowly focused to avoid past difficulties.

The underlying country studies for PRC, India, Indonesia, Thailand and the Philippines will be published in full by Edward Elgar for the ADBI in early 2005 under the title *Poverty Targeting in Asia*.

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# Reaching the Poor with Poverty Projects: What is the Evidence on Social Returns?

John Weiss

## 1. Introduction

Although the consensus within the development community stresses the role of economic growth as a means of long-term alleviation of poverty, most governments and donors continue to fund measures to target the poor directly and to provide a social safety net to protect against adverse shocks. Such schemes can range from the provision of infrastructure, subsidized food, employment creation, access to health and other social facilities, microfinance and occasionally cash grants. Types of targeting include that by *activity*, such as primary health care and primary education, where it is established that the distribution of benefits tends to be progressive (so-called ‘broad targeting’), by *indicator*, where alternatives to income that may be expected to be correlated with poverty are used to identify the poor, by *location*, where area of residence becomes the criteria for identifying the target group, and *self-targeting*, where programs are designed to be attractive only to the poor. Insofar as these measures all involve the use of public resources to achieve benefits for a target group at or below the poverty line they can be thought of a ‘poverty projects,’ whose efficiency in principle should be amenable to formal quantification.

Poverty targeted interventions achieved prominence in development initiatives in the 1990’s in part due to the demonstrated weakness of universal schemes with high leakage rates and in part due to fiscal pressures that undermined governments’ ability to fund large universal programs (World Bank 1990).<sup>1</sup> This paper surveys briefly evidence on the impact of poverty projects in a number of large economies in South Asia (India), South East Asia (Thailand, Philippines and Indonesia) as well as in People’s Republic of China (PRC), drawing on the detailed studies in Weiss (2005). In some of these countries poverty targeting has a relatively long history stemming from longstanding social welfare concerns (India and to some extent the Philippines and PRC), whilst elsewhere it originated principally in the late 1990’s in response to the impact of the regional Financial Crisis (Thailand and Indonesia). The paper begins with a digression on methodology, before giving an overview of the quantitative importance of such projects. It then highlights difficulties in relation to identification of the poor, and errors of targeting relating to both misappropriation and technical errors causing under-coverage and leakage. Finally we draw some conclusions.

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<sup>1</sup> Besley and Kanpur (1991) introduce the theory of targeting in a development context. Finely targeted schemes imply high administrative costs for their operation and in general there will be an expectation that the more finely targeted these are (that is the lower is the degree of leakage) the higher will be the ratio of administrative costs to benefits to the poor. This has the important implication that the optimal degree of targeting need not be to aim for the minimum degree of leakage, since the costs of such targeting need to be compared with the benefits.

## 2. Appraisal Methodology for Poverty Projects

A basic distinction in the targeting literature is between two forms of error, that of under-coverage, that is the failure to reach some of the target group, and of leakage, that is where benefits accrue to those outside the target group. Following statistical terminology these are termed 'type 1' and 'type 2' errors, respectively. Practical application of targeting measures inevitably involves some trade-off between these two errors. For example to minimize undercoverage or type 1 error more generous means of assessing eligibility may be used, whilst to minimize leakage or type 2 error, stricter criteria may be applied, and if these are not specified or applied correctly they may serve to exclude some of the target group (Cornia and Stewart 1993).

If the objective of a project is to channel resources to the poor and it suffers from type 1 and type 2 errors, as noted above, such projects may have low social returns? However quantifying project impact has rarely been done with any rigor and there are important conceptual issues to be addressed. For example, if one wishes to estimate a social return to such a project strictly one must identify the full distribution of the benefits from the project. As the poor are the target group they are explicitly favored, with the implication that benefits they receive have a higher social value than benefits received or costs incurred by those who are above the poverty line. Hence full social appraisal requires not only that all project effects (both short term and long-term) be monetized, but that benefits be adjusted by a set of social weights that reflect an aversion to inequality or poverty (or both). These weighted benefits must then be compared with the full costs of the targeting project, both administrative and running costs of the project and costs of additional government financing (for example through taxation or bond issue) if it is a project that is incremental to the budget. Hence social efficiency  $E$  can be expressed as

$$E = \sum_i (d_i * B_i) + \sum_j (d_j * B_j) - \sum_j d_j * A(1 + t) \quad (1)$$

Where  $B_i$  and  $B_j$  are the present value of benefits to groups  $i$  (the poor) and  $j$  (the non-poor), respectively,  $d_i$  and  $d_j$  are the social weights for gains to these groups,  $A$  is the present value of the administrative and running costs of a project and  $t$  is the cost of additional financing as a proportion of the funds required. An efficient project requires  $E > 0$ .

The greater is leakage the larger will be  $B_j$  relative to  $B_i$ , and the greater is under-coverage the lower will be  $B_i$  relative to its potential. A time profile of impacts is required and this will vary greatly between targeting interventions; food subsidies or employment schemes, for example, will provide immediate consumption, whilst microfinance and health cards will longer-term impacts. Long-run impacts are not always more desirable, if a short-term transfer can forestall catastrophic consequences, like starvation, although this raises complex problem of valuation, where life saving effects are involved and an appropriate discount rate will be needed.<sup>2</sup>

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<sup>2</sup> The theory underlying this exposition is in Squire and van der Tak (1975), with a restatement in Brent (1990) and Curry and Weiss (2000). Complications related to the costs of raising public funding to cover  $A$  and who bears this cost, can be removed if one assumes that there is a fixed government budget

The groups the poor and non-poor can be treated as homogenous or broken down by living standard. In the first case there will be simply two weights  $d_i$  and  $d_j$ , but in the latter case there will be a range for all  $i$  and all  $j$ . The theoretical literature has offered as the main solution to the weighting problem, a continuous weighting function based on diminishing marginal utility of consumption at a constant elasticity. This requires a reference point (for example, the poverty line consumption level) as the numeraire and an elasticity parameter reflecting the degree of aversion to inequality.

Thus for group  $x$  the social weight  $d_x$  is

$$d_x = (c_p/c_x)^n \quad (2)$$

where  $c_p$  is the poverty line consumption,  $c_x$  is per capita consumption for group or household  $x$  and  $n$  is the elasticity parameter.

A weighting scheme such as this is implicit in the widely cited ‘squared poverty gap’ measure of poverty that utilizes a value of  $n$  equals 2.0 (Foster et al 1984). Use of a value of two for the elasticity parameter has the implication that gains to the poorest of the poor, receive a very high weight. For example whilst those on the poverty line have a weight of 1.0, those at 50 per cent of the poverty line consumption have a weight of 4.0. Conversely those above it have a very low weight. A household with an average consumption of twice the poverty line has a weight of only 0.25 for example.

In practice, however, calculations based on (1) are rarely, if ever, carried out for poverty projects, due to a combination of lack of data and lack of consensus on the precise weights to use. Less ambitious and much closer to practice is the alternative of setting out the targeting problem as one of cost-effectiveness, with the objective to provide an income transfer or its equivalent, to the poor at the lowest cost. Now using the previous terminology social efficiency requires that one minimizes the  $A/B_i$  ratio, where both sides of the ratio are present values and there is no distinction drawn between groups of the poor ( $d_i = 1.0$ ). One can of course attempt to disaggregate gains to the poor and employ a weighting function as in (2), although this is rarely if ever done.

Strictly ranking poverty projects by  $A/B_i$  will be valid where there is no concern for transfers to the non-poor ( $d_j = 0$ ) and where one is comparing alternative schemes with the same scale of impact. If this latter qualification is not made one can choose low cost schemes with a small impact, over larger schemes with a higher cost, and this may imply implicit valuations of gains to the poor that if made explicit would be unacceptable. Also where one ranks projects by a cost-effectiveness indicator, one still requires some cut-off point at which a targeting project becomes too high cost as a means of reaching the poor. In principle assuming social budgets for targeting are fixed, this would be the cost-effectiveness of the marginal scheme that just exhausts the available budget. If budgets are not fixed the cut-off rate could be set as the cost of raising additional government funds (for example the deadweight and incentive losses from raising taxes) plus the administrative cost of a cash transfer to the poor, per unit of benefit received. Allowing for longer-term productive impacts, any poverty project that

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irrespective of choice project so that the costs of raising  $A$  are the same, whichever project is implemented.



could not match this cost on a long-term basis should not be implemented since cash transfers would be lower cost. In practice neither of these figures for the cut-off rate are known with any degree of precision and comparisons are likely to be based on approximate rules of thumb, for example costs on similar types of project either in the country or elsewhere.

### **3. How Important Have Poverty-Targeting Measures Been in Monetary Terms?**

This question is important not just in assessing the overall impact of such expenditures on the poor, but also in terms of the potential trade-off between poverty alleviation and economic growth. It is well known that in the longer term it is sustained growth that drives poverty reduction. There is a vast literature on the relationship between growth and poverty, which concludes there is virtually everywhere a clear negative relationship, although its strength varies between countries, with different social, economic and political structures.<sup>3</sup> In most countries, however, the scale of public poverty projects has not been large enough to raise the issue of a potential or actual trade-off. Further there is often lack of clarity as to what actually constitutes poverty targeted expenditures.

India is the country with the longest record of poverty—focused interventions and of our cases the one where such expenditures appear to have taken the highest share of the budget of central and state or local governments. Estimation of total expenditure on poverty-targeted programs in India is difficult because of the variety of schemes and the range of financing whether at the central, state or district level. Excluding fertilizer subsidies, which are not explicitly targeted at poor farmers, Srivastava (2005) estimates expenditure on the largest targeted programs to be about Rs 411 bill in 2001–02 (which is about 11 % of the central government expenditure and 2% of GDP).<sup>4</sup> If fertilizer subsidies are treated as poverty targeted interventions the proportions rise to 15% and 3%, respectively. Another estimate of the time trend of this expenditure suggests a rise of about 50% in real terms over the 1990's with the main increase between 1992–3 and 1993–4 (Shariff et al 2002).

In PRC since the mid 1980's, when the responsibility for poverty reduction initiatives was centralized in the Leading Group for Poverty Reduction of the State Council, three types of funds are categorized in official statistics as central government poverty reduction funds—subsidized loans, workfare programs and budgetary funds for

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<sup>3</sup> Warr (2000), for example, examines changes in poverty incidence (the headcount ratio based on official poverty estimates) across a set of countries including India, Indonesia and Thailand. He finds elasticities of poverty incidence (the proportionate change in the headcount ratio relative to the proportionate change in GDP per capita) of  $-0.9$  for India,  $-2.0$  for Thailand, and  $-0.7$  for the Philippines. For PRC a similar exercise finds an elasticity for poverty incidence of  $-0.8$  (World Bank 2001). Estimates are also available for the income poverty elasticity, that is the relation between growth (change in mean income) and the change in the income of the poor (normally taken as the bottom quintile). For the Philippines the income poverty elasticity (defined as the ratio of latter to the former) is found to be relatively low at 0.54, whilst for Indonesia the comparable elasticity is 0.71 (Balisacan and Pernia 2003, Balisacan, Pernia and Asra 2003). In both countries there is a clear tendency for the elasticity for different quintiles to rise as one moves up the income scale, although this is particularly marked in the Philippines. In other words, although the poor benefit from growth they do not benefit as much (both proportionately as well as absolutely) as the better-off.

<sup>4</sup> Schemes with budgets of below Rs 1 bill are excluded from this total.

poor counties. In 2002 these were RMB 29.1 billion showing a real average annual growth since 1986 of around 6%. Most of this real increase came after 1996 and the real value of these funds almost trebled between 1996 and 2002 (Wang 2005, table 4.15). There are also poverty expenditures by local governments and government departments that might be as much as 25% of the central government poverty expenditure (or around another RMB 7.5 billion). In combination this estimate of RMB 37 billion is 5% of the central government budget in 2002. Over the period 1986–2002 central government poverty expenditure has averaged 5% of the budget and no more than 0.2% of GDP (Wang 2005, table 4.15).

In Indonesia although it is difficult to obtain data on the costs of all schemes, in 1998–9 at their peak, approximate estimates suggest that they might have taken around 9% of the central government budget (Perdana and Maxwell 2005, table 3.6). In Thailand government poverty reduction programs have focused on cash and in-kind (principally health facility) transfers to poor families, and interest free loans for either productive activities or education. Over the 1990's these programs in total rose from 1.1% (in 1993) to 4.6% (in 2000) of central government expenditure (Warr and Sarntisart 2005, table 5.13). However the education loans program is controversial and there is some dispute as to whether it is poverty-focused. If it is excluded the increase in poverty-related expenditure is from 1.1% to 3.3% of total central government expenditure. Since 2000 the government definition of poverty-focused expenditure has been widened considerably with the result that now officially a significantly higher proportion of expenditures are seen as poverty programs. Under this wider definition these activities took 10% of central government expenditure in 2000 rising to around 13% in 2003 (Warr and Sarntisart 2005, table 5.16).

In the Philippines even including the food subsidy activities of the National Food Authority (NFA), which were often general rather than targeted, total direct poverty focused expenditure was not more than 1.5% of total central government expenditure in the immediate pre-Crisis period in 1997–8 and no more than 0.3% of GDP (Balisacan and Edillon, 2005).

These poverty projects have encountered a range of problems and we highlight these below prior to a discussion of their overall effectiveness.

#### **4. Identification of the Poor**

Apart from self-targeting and the use of broad targeting, that focuses on particular categories of activities rather than their users, other forms of targeting, by definition, require inclusion and exclusion criteria, so that the poor can be separated from the non-poor. However collecting accurate data on income or consumption is difficult. The use of modern 'poverty mapping' techniques, which combine data from household surveys (that allow a link between consumption levels and various household characteristics) with data from population censuses that collect detailed location-based data on households, is very recent for our country cases.<sup>5</sup> Hence in practice up to very recently

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<sup>5</sup> For example, a poverty map has just been completed on a trial basis for three provinces in Indonesia (Suryahadi et al 2003). There are doubts however as to whether this approach can apply at the village level. Hentschel et al (2000) explain the poverty mapping approach and illustrate how it can improve on the use of simple basic indicators to identify the poor.

all of the countries used approximate indicators for identifying the poor; for example various basic need measures or rough estimates of average income in a particular village or larger unit.

In India there was a serious effort in the 1990's at administrative identification of the poor as a means of targeting principally the food and other subsidies from the public distribution system. As income estimates were uncertain, other additional criteria included housing conditions, number of family earners, land access and ownership of livestock and consumer durables. State governments had the responsibility for identifying the poor, although the process was slow and incomplete and even where surveys were undertaken identification cards were not provided to a significant number of poor families.<sup>6</sup>

In Indonesia receipt of food subsidies was determined by the classification scheme of the National Family Planning Coordinating Board (BKKBN), which covers households nationally. This classified households into a number of categories on the basis of criteria including food consumption patterns, access to health care and possession of alternative sets of clothing. In response to the impact of the Crisis of 1998–99 additional economic criteria were added; the poorest category covered households that failed any one of the following;

- all family members normally able to eat at least twice a day;
- all family members have different types of clothing for home, work, school and so forth;
- the largest section of the floor of the family home is not made of earth;
- sick children are able to receive modern medical attention and women have access to family planning services.

However administration of the food subsidy program showed both a disappointingly high leakage rate to the non-poor and high undercoverage.<sup>7</sup>

Village-based programs were also an important part of targeted poverty measures in Indonesia. Here poor villages were designated using a scoring system covering social and economic characteristics, including infrastructure, housing and population. Classification of a village as poor ('neglected') was based on a combination of its position relative to the provincial average and a subjective assessment from a field inspection by local officials. By this twin approach, 31% of villages in the country were classed as neglected in 1993. Within these villages village leaders appear to have had a major influence on how program funds were allocated (Perdana and Maxwell 2005).

In PRC, the Philippines and Thailand geographic targeting was the key approach, with as we shall see problems in ensuring that this was implemented accurately.

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<sup>6</sup> For evidence of undercoverage a World Bank survey in Uttar Pradesh, one of the poorest states, found that 56% of the lowest income quintile did not get identification cards to enable them to access the public distribution system (Srivastava 2005).

<sup>7</sup> Perdana and Maxwell (2005) report that in the late 1990's those in the top four quintiles of household expenditure were three quarters of the recipients of subsidized rice and that only roughly half poor families under the official criteria were recipients.

## 5. Errors of Targeting—Misappropriation

Apart from technical difficulties in identifying, who the poor actually are, in all the country cases weak governance helps explain relatively high levels of leakage, as funds intended for the poor are diverted to others. This is brought out in a number of evaluation reports on the various targeting schemes. Food and credit subsidy programs and employment creation schemes, in particular, offer considerable scope for malpractice. India may not be the worst of the country cases studied here, but various evaluation reports both official and unofficial ensure that error there are the best documented.

Apart from the early days of the Maharashtra Employment Guarantee Scheme, employment creation and food for work programs are judged to have fared poorly.<sup>8</sup> An assessment of the Employment Assurance Scheme (EAS) found that the rules were being broken (for example self-selection was undermined by the use of contractors who hired local labor and the norm that 60% of costs should be on labor was often ignored). Nationally it was estimated that only 15% of expenditure on the scheme was going as benefits to workers, against a target of 60%. Another well-studied scheme has been the Comprehensive Rural Employment Scheme formed by a merger of the EAS with another scheme. Here poor workers are to receive foodgrains as payment in kind for wages, as well as some money income. There is an estimate that due to malpractice amongst local government administrators and contractors no more than 25% of the wage fund that the poor are entitled to actually reaches them (Nayak et al 2002). Another study drawing on a village level survey in Andhra Pradesh finds local elites controlling the implementation of the scheme at the village level, with beneficiaries (that is those who would obtain work and food) selected at local meetings. Contrary to the guidelines of the scheme the use of contractors was widespread. The contractors were often found to obtain profits illegally through a number of means including claiming the full rice quota for incomplete work, double-claiming to different government departments, submitting inflated costs and paying workers wholly in cash and reselling the rice on the open market (Deshingkar and Johnson 2003).

Apart from motives of corruption, the institutional objectives of public officials can also create targeting errors. This appears to have been particularly important in the poor county employment creation and subsidized loan programs in PRC, where because of the financial constraints they faced, local officials had incentives to divert funds to projects capable of generating revenue rather than funding projects with the greatest direct poverty impact (Wang 2005). Similarly with micro credit schemes, the officials of the implementing banks were under pressure to lend to the more credit-worthy customers who would not be the poorest households (Park and Ren 2001).

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<sup>8</sup> This scheme received a great of attention internationally and was commented on very favorably in World Bank (1990). Its performance declined substantially after 1979 following a large increase in the wage offered, thus weakening the self-selection by the poor (Gaiha 1996).

## 6. Errors of Undercoverage and Leakage

Aside from malpractice, which has been relatively common, if not always well documented, there are many instances of technical errors of targeting. This can be demonstrated most readily for location targeting measures, since average income and consumption estimates are normally available at the level of provincial or local government units and these can be compared with national or provincial poverty lines and with the allocation of public expenditure. Most studies indicate that regional targeting has in practice been a relatively ‘blunt instrument’ for reaching the poor.

For Thailand, we have detailed evidence from Warr and Sarntisart (2005), who examine the distribution of government expenditure between rich and poor provinces, although they have no information to allow an assessment of intra-province distribution. They correlate provincial public expenditure per capita under different broad categories with provincial per capita incomes and find positive elasticities, so that in general expenditure per person and by implication benefit rises with income. Hence there is no evidence of progressive targeting across provinces by broad expenditure category. When the same exercise is repeated for the specifically poverty-focused expenditure no significant relationship with provincial income per capita is found for most categories. However provincial size does appear to matter so that, in general on a per capita basis, smaller provinces are favored in poverty-targeted expenditure. Only in the case of one minor category (the ‘Poor and Low Income People’ expenditure) is there a significant negative relationship between allocations per capita and provincial income. This category was only 6% of total poverty expenditures over 2000–002, and within it the clearest evidence of a progressive allocation was for grants for health care. Hence on a regional basis within Thailand, there is no evidence of a successful targeting at poorer provinces.

For PRC, Park et al (2002) and Wang (2005) assess what they term targeting gap errors by examining the classification of counties as ‘poor’ in the light of their estimated income per capita relative to the poverty line.<sup>9</sup> What they term the targeting count gap (TCG) can be interpreted as the percentage of counties that are mistargeted and this can be disaggregated into the two types of error. Table 1 below shows the situation taking the official poverty line to estimate mistargeting.

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<sup>9</sup> The targeting count gap (TCG) is defined as

$$TCG_t = 1/N \sum \{I_{it1}(P_{it}=0, Y_{it}<Z_t) + I_{it2}(P_{it}=1, Y_{it}>Z_t)\}$$

Where N is the total number of counties, indexed by i and t is a time period.  $I_{it1}$  is an indicator of undercoverage (type 1 error) and equals 1.0 if a county is not designated as poor ( $P_{it} = 0$ ), but its income per capita ( $Y_{it}$ ) is below the poverty line ( $Z_t$ ).  $I_{it2}$  is an indicator of leakage (type 2 error) that equals 1.0 if a county is designated as poor ( $P_{it} = 1$ ), but its income per capita is above the poverty line.

**Table 1. PRC Provinces: Targeting Count Gap 1986 to 1995**

Year	Type 1 error (undercoverage)	Type 2 error (leakage)	Total
1986	0.094	0.050	0.144
1987	0.082	0.065	0.146
1988	0.044	0.101	0.144
1989	0.056	0.096	0.152
1990	0.078	0.093	0.171
1991	0.058	0.101	0.158
1992	0.038	0.107	0.145
1993	0.002	0.225	0.227
1994	0.005	0.232	0.237
1995	0.004	0.218	0.222

Source: Park et al (2002) table 4.

The data have an intuitively clear interpretation showing that the effectiveness of targeting has decreased over time. Initially under-coverage was the major problem, but over time leakage became considerably more important, particularly after the re-designation of poor county status in 1993, when about 20% of counties with incomes above the poverty line are miss-targeted. However even with perfect designation at the county level there would still be targeting errors due to the presence of the non-poor in poor counties and of the poor in non-poor counties. Estimates suggest that the share of the poor (at the official poverty line) living in non-poor counties rose from 29% in 1992 to 38% in 2001 (Wang 2005).<sup>10</sup>

Further evidence of errors in regional targeting comes from the Philippines. Balisacan et al (2000) identify the 25 most depressed provinces in the late 1990's ranked alternatively by the incidence of poverty or by the poverty gap measure (the rankings are not identical). These are then compared with the priority provinces under the Social Reform Agenda of the Ramos administration. Out of the 26 priority provinces only 11 are in the ranking of most depressed by the poverty indicators. It is clear that formal poverty data were only one of a number of factors used by the government to determine priority status.

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<sup>10</sup> Weiss (2003) finds that the key factor influencing rural poverty reduction in PRC across provinces has been the growth of agricultural production and to a lesser extent the trend in farm-gate prices.

For Indonesia, the National Economic Survey (SUSENAS) provides detailed information, which has been used to assess who has benefited from the set of poverty targeting measures introduced in the wake of the Financial Crisis (Perdana and Maxwell in this volume). Table 2 summarizes the results of the most detailed study based on this data.

**Table 2. Indonesia: Impact of Anti-Poverty Programs Aug. 1998–Feb. 1999**

Program	Potential recipients (mill)	Coverage Poorest 20% (%)	Coverage Richest 20% (%)	Coverage all potential recipients (%)	Proportion of beneficiaries from non-poor	Targeting ratio <sup>a</sup> (%)
Subsidized rice <sup>b</sup>	50.4	52.6	24.3	40.1	0.74	0.92
Employment creation <sup>b</sup>	50.4	8.3	2.5	5.6	0.70	0.88
Primary scholarships <sup>c</sup>	29.7	5.8	2.0	4.0	0.71	0.89
Lower secondary scholarships <sup>c</sup>	10.4	12.2	4.9	8.4	0.71	0.89
Upper secondary scholarships <sup>c</sup>	6.4	5.4	2.0	3.7	0.71	0.90
Health cards <sup>d</sup>	27.6	10.6	3.1	6.3	0.67	0.83
Nutrition <sup>e</sup>	20.0	16.5	14.2	15.9	0.79	0.99

Source: Sumarto et al (2001)

Notes:

- a) Targeting Ratio is share of non-poor (defined as those above bottom quintile) in total beneficiaries to their share in total population, which is 0.80 by definition.
- b) Subsidized rice and employment creation programs potentially available to all households.
- c) Scholarships are potentially available to all individual pupils enrolled at the relevant levels.
- d) Health cards potentially available to all those individuals who were estimated to have visited a healthcare provider in the three months prior to the survey.
- e) Nutrition support potentially available to all individuals in the 'pregnant women and children under three years' category.

The data are extremely detailed and reveal clearly that of the anti-poverty programs over the period only the subsidized ration scheme reached a significant proportion of those eligible (40%). Subsidized rice reached over 50% of households in the bottom quintile, but for all other schemes the proportion of the target group reached

was below 20% and often well below it. Hence under-coverage was clearly a problem. In terms of leakage this was most serious for the rice and nutrition programs, where gains to the richest 20% were high and the ratio of non-poor beneficiaries to their share in total population was highest (nearly 1.0 for the nutrition program implying nearly zero targeting effectiveness), although these figures do not reveal the magnitude of gains per family, only whether they were in receipt of some benefits.

Self-targeting schemes were intended to overcome many of the problems faced by directed or narrowly targeting. Nonetheless they have also proved disappointing in many cases. In India there has been considerable experience with food for work and employment creation programs designed to attract the poor by offering below market-clearing wage rates. Evaluations have revealed serious under-coverage. In the 1990s the Employment Assurance Scheme offered on average only 17 days of employment per person per year against a target of 100 days. Further its village coverage was low with another evaluation finding no more than one third of eligible villages actually covered. This meant that in some states less than 10% of the target group was reached. This, combined with the low number of days work on offer under the scheme, rendered its overall impact on the welfare of the poor largely minimal. In this case part of the problem had to do with the slow release of central government funds to the states and part to lack of matching funding by the states themselves (Srivastava, 2005). In other schemes, however, the level of wages set for employment has been identified as a critical factor with relatively high and therefore attractive wages leading to a 'crowding out' of the poor. In India under the food for work scheme in a survey in Andhra Pradesh, Deshingkar and Johnson (2003) conclude that wages either in cash or in kind were set too low in prosperous villages thus attracting non-poor migrants, but too high in poorer villages leading to crowding out of the poor. A similar conclusion is reached for an Indonesian employment creation scheme (the *Padat Karya*). An evaluation of this, drawing again on the (SUSENAS) data, found that for the 1998–99 period, as many as 70% of beneficiaries were from non-poor households (Perdana and Maxwell, 2005).

Micro credit programs aimed at the poor have a substantial element of self-targeting insofar as they involve the potential embarrassment of clients being associated with poverty programs and the inconvenience of frequent group meetings. Micro-credit, is seen by many in the development community, as an important innovation in the fight against poverty (Morduch, 2000). There is now considerable evidence that micro credit has had a positive impact on poverty reduction in a number of countries, although often it is not the 'core poor' who are the main recipients, but rather those close to or just above the poverty line (Weiss et al 2004). However this leakage appears to be much less than from conventional subsidized credit programs. For example, for PRC the subsidized loan program available for poor counties went principally to economic entities rather than poor households (although formally it was an obligation that recipient enterprises should have at least 50% of their employees who were below the poverty line). Many of these loans went to Township and Village Enterprises in poor counties and the direct link with poverty reduction came to be questioned. The introduction of micro credit schemes in PRC in 1997 was a direct response to this concern (Wang 2005). In the Philippines an assessment of the main low interest credit program for the poor (the *Tulong sa Tao* program) of the Aquino administration concluded that targeting was vague and that only around one-third of beneficiaries were



from low income groups (let alone being amongst the core poor) (Balisacan et al 2000). Similar assessments are given for such schemes in India. For example, an assessment of the Integrated Rural Development program, which was designed to provide subsidized credit to the poor for income generating activities, found that in the states of Bihar and Jharkand, 24% of beneficiaries were above the poverty line and a high proportion had incomes just below it (MAKER 2002).

Finally, broad targeting based on types of expenditure, which the poor will use disproportionately, offers an alternative to the type of narrow targeted schemes discussed above. Assessing the impact of measures like health and education expenditure is normally done by 'benefit incidence analysis' (van de Walle 1998a). A typical conclusion being that primary health care and primary education expenditure have a disproportionate positive effect on the poor, whilst expenditure on hospitals and higher education have a disproportionate positive effect on the better-off.<sup>11</sup> The net effect of aggregate health and education spending will vary therefore depending on how expenditure is allocated within the sector, but in general there is evidence that broad targeting within these sectors can reach poor.

## **7. Evidence on Targeting Projects**

The limited evidence we have tends to be on cost effectiveness, that is costs per unit of benefit received by the poor (A/Bi). Even with this simpler approach few rigorous cost effectiveness studies of alternative targeting projects are available. In some instances benefits are not fully specified (for example future gains from investment financed by microcredit or the long-run productive impact of improved health) and discounting may not always be applied to take account of the time profile of impacts. Further a rigorous comparator, in terms of a cut-off rate for costs per unit of benefit is normally unavailable.

For India a comparison of employment guarantee schemes and food subsidies suggest that at best the cost of transfer is nearly double the benefits received by the poor. Approximate estimates suggest that the cost of transferring a rupee to the poor through the Maharashtra Employment Guarantee Scheme in its early years (Rs 1.85 per rupee transferred) compared very favorably with both the later national employment scheme, the Jawahar Rogzar Yojona, (Rs 2.28 per Rupee transferred) and the food subsidy program under the Public Distribution System (Rs 6.68 per Rupee transferred) (Dev and Evenson, 2003). Separate estimates for impact of the Employment Assurance scheme in three states (West Bengal, Gujarat and Haryana) found the cost per job per day to be Rs 200-Rs 300, which is well in excess of wage rates as rough estimate of benefit to the poor (assuming a zero opportunity cost of time and no costs for additional effort), which were roughly in the range of Rs 35-50 (Srivastava 2005).

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<sup>11</sup> van de Walle (1998b) reports this result for Indonesian data from the late 1980's, although the bias is much greater for hospitals where gains to the top decile of the income strata in monetary terms are roughly seven times those to the bottom decile. World Bank (2004) figure 2.5 reports estimates for Indonesia in 1989 and 1990 showing the gains to the poor (the bottom 20%) from public spending to exceed the gains to the rich (the top 20%) for primary health care and primary education expenditure, whilst the reverse holds for aggregate expenditure under both headings.

The operations of the National Food Authority in the Philippines, particularly through its rice subsidy, have been the subject of several cost effectiveness assessments. For the early 1990's cost are again roughly twice the sum transferred to consumers (Subbarao et al 1996). However NFA rice is sold in special retail outlets in a form of self-targeting and much will leak to the non-poor. Assuming a 50% leakage rate more recent cost effectiveness estimates for the NFA rice subsidy suggest that in 1997 it costs Pesos 4.2 per peso of benefit received by poor consumers and Pesos 2.5 per peso of benefit in 1998. Much of this mistargeting will have been due to a regional misallocation with some of the poorer provinces being under-represented, relative to their share in poverty, in the receipt of NFA rice (Manasan, 2001).

There is often a general expectation that microfinance institutions are an effective means of reaching the poor, although for the countries surveyed here there are few full cost effectiveness studies. For India, Burgess and Pande (2003) examine whether the pattern of commercial bank expansion in India into rural areas, previously not served by banks, has impacted on rural poverty and their work allows a simple comparison with microfinance. Their estimates suggest that it costs 2.72 rupees to generate an additional rupee of income for the poor via the 'social banking initiative' of the commercial banks. More detailed work on microfinance institutions is available for Bangladesh, one of the key centers for microfinance in Asia, and several studies allow a comparison both between different micro finance institutions and between microfinance and other projects to reach the poor (see table 3). Khandker (1998) compares the cost-effectiveness of micro credit in Bangladesh (that is costs per taka of consumption for the poor) as compared with more formal financial institutions and other poverty-targeted interventions. They appear to be based on the assumption of a zero leakage rate to the non-poor. The interesting result that emerges is that the Grameen Bank is considerably more effective than the other main institution the Bangladesh Rural Advancement Committee (BRAC) and that as expected loans to female borrowers are considerably more cost-effective than loans to males. Further, subsidies to Grameen (but not to BRAC) appear to be a more cost effective means of reaching the poor than various food for work programs. However a food for education scheme appeared very cost-effective relative to the food for work programs and to BRAC. Formal financial institutions that offer small loans to the poor are less cost-effective than Grameen for both female and male borrowers and less cost effective than BRAC in some, both not all, cases examined (Khandker 1998:134-139). The high figure for BRAC is in part due to the range of services, such as training, offered in addition to micro credit, but nonetheless if such services are essential to the success of micro credit, including their cost in a cost-benefit assessment of micro-credit is legitimate.<sup>12</sup>

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<sup>12</sup> Khandker does not conclude from this that all subsidies to other poverty interventions should be withdrawn and reallocated to micro-finance. Rather he points out that as participants to micro credit borrowing self-select (that is they judge that micro credit suits their particular needs, often for self employed work) others amongst the poor may not be able to benefit. For this latter group other forms of targeting will still be required.

**Table 3. Cost Effectiveness Ratios<sup>a</sup>: Bangladesh Early 1990's**

Intervention	Female	Male	All borrowers
Grameen Bank	0.91	1.48	
BRAC	3.53	2.59	
Agricultural Development bank (BKB) <sup>b</sup>			4.88
Agricultural Development bank (RAKUB) <sup>c</sup>			3.26
Vulnerable Group Development			1.54
Food for Work <sup>d</sup>			2.62
Food for Work (World Food Program)			1.71
Food for Education <sup>e</sup>			0.94 (1.79)

Source: Khandker (1998) tables 7.2 and 7.3 and Wodon (1998)

Notes:

- a) Ratio of costs to income gains to the poor.
- b) Bangladesh Krishi bank
- c) Rajshahi Krishi Unnayan bank
- d) Run on behalf of USAID
- e) Source for this data is Wodon (1998); figure in brackets is the cost effectiveness ratio for the very poor.

A further look at the effectiveness of Grameen is provided by Schreiner (2003), who calculates the subsidy-lending ratio at 0.22 over the period 1983–97. This is not directly equivalent to the ratios in table 3, but assuming the same return to borrowing as in Khandker (1998) these figures can be converted into a broadly equivalent ratio of cost to gains to the poor of 1.15. This is consistent with the figures in table 3 which would need to be averaged to give an overall return to male and female borrowing combined. The result confirms Grameen as a relatively cost-effective form of poverty intervention.

None of these studies provide a reference or cut-off point so that one cannot judge whether a more cost-effective alternative for providing resources to the poor was available. Neither do they throw any light on the distribution of gains within the group the poor. Few attempts have been made to assess the social returns to poverty projects in these economies, in part because they have often been assumed to be distribution rather than growth-focused. However some estimates are available from the PRC, largely because the poverty program there was largely designed around poverty loans for productive activities located in areas where poverty was judged to be prevalent (the

‘poor counties’). In all cases these studies use regression models to explain income change and relate this change to project costs to derive a social return, in terms of changes in incomes within the poor counties (although there is no evidence on who within these areas receives benefits and no social weights are applied). From a regression model Rozelle et al (1998) find some positive income effects from direct lending to households in poor counties in Shaanxi 1986–91, however funds allocated directly to enterprises in these counties do not appear to have any positive effect on growth. Zhang et al (2002) look at Sichuan province and compare growth across program poor, non-program poor and non-poor counties. Allowing for a range of other factors they find that program status does appear to have a positive effect on growth. Hence, whilst non-poor counties grew more rapidly, the gap between poor and non-poor counties is lower when counties have a designated poor status and receive poverty funding commensurate with this designation. An even stronger result is provided by Park et al (2002) using a regression model, which makes growth across counties a function of initial income, other initial characteristics (principally grain production), time invariant characteristics, including poor county status, and a number time-varying factors. They find that designation as a poor county increases household per capita income, over that otherwise expected, by 2.2 % annually 1986–92 and 0.9% annually 1992–95. When this rate of increase is compared with the amount of funding to poor counties this gives a rate of return of between 12% and 16% depending on the time period.

## **8. Conclusions**

What can one conclude from all of this for targeting policy? The need to reach the poor directly and to minimize leakage from and under-coverage of poverty programs remains critical. Self-targeting initiatives have proved only a modest improvement in leakage terms and raise issues of under-coverage. Technical improvements, principally new poverty mapping techniques, offer a means of more sharply identifying who the poor are, but in the absence of strong governance over poverty schemes the risk of misuse of funds remains. Whilst the case for special promotion and protection policies for the poor remains strong, past errors associated with their implementation and design must not be forgotten. In the debates of the 1980’s more universal schemes were strongly criticized for their high leakage and their budgetary implications. The more targeted measures of the 1990’s as we have seen, have cost more modest amounts relative to the size of government budgets, but their leakage rates have also been disappointingly high, as have been their costs per unit of benefit to the poor, where these can be estimated.

Nonetheless some of these schemes may nonetheless have been influential in protecting the poor at times of adverse shocks. This is the judgement, for example, on some of the many schemes introduced in Indonesia at the time of the Crisis of the late 1990’s, particularly in relation to health and education initiatives. There is some evidence that the education scholarship program helped in keeping up school enrolment rates and reducing drop-out rates from poor families. Similarly the health card scheme to allow free access to public health facilities is credited with stabilizing the utilization rate of such facilities by the poor. Cost and leakage may have been high, but some real benefits appear to have been created.

It is perhaps not widely appreciated that under many widely cited weighting schemes even the relatively high cost interventions examined here, may still be justifiable in welfare terms, since if one introduces a form of social weighting (as in equation (1) above) it is not difficult to rationalize even apparently high cost schemes. For example, where the average income per capita is twice the poverty line, using the weighting scheme with  $n = 2$  in equation (2) those on the poverty line will have a weight four times the average. Hence if one accepts this set of weights a project funded by taxing average consumers and transferring resources to the poor, could have a cost effectiveness ratio of somewhere between 3 and 4 to one unit of benefit to the poor and still be socially acceptable. This is not an argument for ignoring the cost-effectiveness of poverty projects, but the strong implication is that poverty targeting projects should remain an important component of poverty reduction strategies, although improvements in both governance and the technical design of schemes are needed. This is likely to require a combination of greater focus on broad targeting (primary education and health care, for example) and selective narrowly focused support for the very poor. Broad targeting measures, such as expenditure on primary health care, have been shown to reach the poor disproportionately, in a number of countries and clearly have an important role. Such measures are not solutions to the short-term problem of providing protection to the poor, which is why measures like employment creation schemes and food subsidies have been employed, with the disappointing results that we have observed. However what works and what does not, is likely to vary substantially between countries. The case for their abandonment has not been demonstrated, although that for their improvement is very strong.

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