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Fall 2008

Handout 8
Social programs and the art of targeting

I. Targeting: How to reach the deserving population?

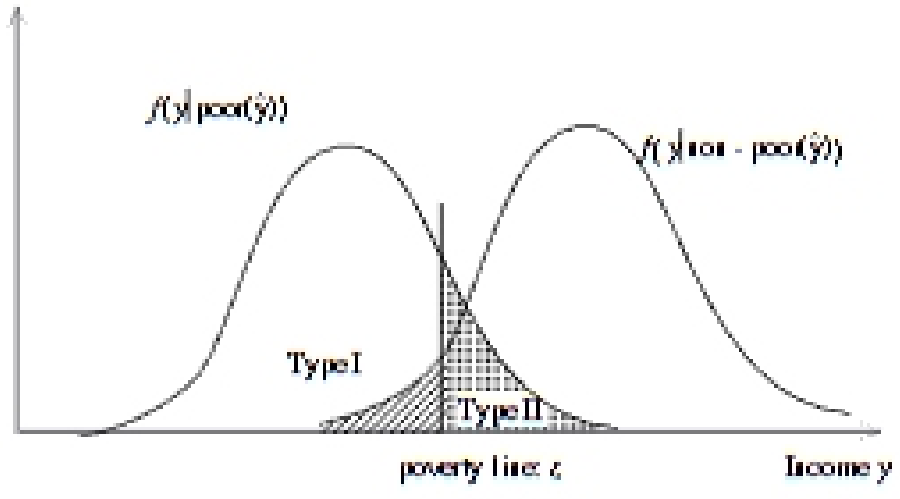
- Targeting is an instrument to make programs more effective for the chosen purpose
- Important for cash transfers programs, safety nets programs, education/health/nutrition programs
- If objective of the program is poverty reduction, targeting requires identification of the currently poor
If objective of program is other (e.g., education, health, nutrition), targeting requires identification of people at risk of not going to school, ill-health, malnutrition
- Targeting has:
  Costs: e.g., identify who is poor and who is non-poor
  Benefits: decrease errors of exclusion of poor and inclusion of non-poor
- Targeting is very difficult due to hidden/asymmetrical/strategic information (misrevealing).

II. Errors in targeting: errors of exclusion (Type I) and inclusion (Type II)

Error of exclusion (Type I): categorize a poor as non-poor = poor are excluded
Error of inclusion (Type II): categorize a non-poor as poor = non-poor are included

Interpretation: classify households into two groups poor and non-poor according to the approximate measure $\hat{y}$ of income (y measured with error or proxy of poverty), and a corresponding poverty threshold $\hat{z}$

Let $f(y|poor(\hat{y}))$ be the distribution of true income y (unknown) of the sub-population classified as poor, and $f(y|non-poor(\hat{y}))$ be the true distribution of those classified as non-poor



		Classification on the basis of approximate measure $\hat{y}$	
		"Poor"	"Non-Poor"
Classification on the basis of true measure y	Poor	OK	Type I error
	Non-Poor	Type II error	OK

Note: Can decrease Type I by increasing $\hat{z}$ (which increases the number of "poor"), but this increases Type II error. Use a loss function to choose the optimum $\hat{z}$ to minimize the aggregate cost of Type I and Type II errors. The loss function could weight Type I error more than Type II.

Note: Different criteria for measuring poverty (P_0, P_1, or P_2) lead to different targeting of welfare budget to minimize poverty.

III. Methods of targeting

Broad targeting (D. van de Walle): Target types of spending: used more by the poor (baladi bread in Egypt, primary education, health centers) and give equal access to all
Narrow targeting: Target categories of people. Alternative options to do this:

1. Means tests (compare income or expenditures to poverty line): Observing income or expenditures is expensive or imprecise

2. Indicator targeting (tagging, categorical targeting, statistical profiling): Use correlates of poverty

   i) Use individual assessment by well-informed actor: subjective assessment, poverty ranking

   ii) Use correlates of poverty
   Poor area, ownership of durables, quality of housing, type of employment, gender, age

   iii) Use two-step procedure to predict income
   Step 1: Use income and expenditure survey to estimate income equation: $y = F(X)$,
   where X are easily measurable variables such as durables owned, quality indicators of housing, occupation in farm work
   Step 2: Run census of population to observe X for all households (Progresa census)
   Use $\hat{f}(X)$ to predict household incomes
   Progresa in Mexico (7 determinants): secret formula to avoid misreporting
   If predicted income is below poverty line, declare as poor. But imprecise at the individual level (same problem as in poverty maps) due to large confidence interval over predicted income
   Useful for small area targeting (say groups of > 3000 people) like localities or municipalities (like in the construction of poverty maps): average income prediction has a variance that falls with the square of the number of people in the group

   iv) Use asset position: Land ownership. Grameen Bank (land holdings ≤ 0.5ha)
   But large heterogeneity among small holders due to off-farm activities and transfers (pluriactivity)

   v) Use place of residence: Geographical targeting. Easy, but large leakages (Type II errors) if intra-regional heterogeneity is high. Precision declines with size of area.
   Location of fair price shops in poor neighborhoods (Egypt, India).
   Welfare programs targeted at marginal localities:
   - CONAPO marginality index in Mexico used by Progresa to target communities (followed by placing a poverty line in the community to separate poor from non-poor).
   - PRAF in Honduras (with universal targeting in poor communities).
   India: Geographical targeting by states ineffective due to high income inequality within states
   China: Geographical targeting by communes effective as low intra-community disparities, but large inter-community disparities
   Latin America: Targeting by municipality not effective as intra-municipal Gini is about as high as the national Gini

3. Self-targeting: Queuing, location of services (transactions cost), poor people's food, relief work programs use mechanism design principle to achieve self-selection.
Note: Self-targeting is achieved by imposing a cost on participation that is higher for the non-poor than for the poor.
   Effective cost: location of stores
   Opportunity cost of time: workfare, queuing
   Utility gain: inferior foods
However, the cost on poor reduces the net gains to participants

3.1. Queing: Imposes cost of time for access. Assumes that opportunity cost of time is less for the poor. But cost of time may be irrelevant for non-poor household members (use maids, non-working wives)

3.2. Inferior goods: Yellow corn in Mozambique (David Sahn). Consumption declines as income rises ($MU_{poor} > 0$, $MU_{non\text{-}poor} < 0$). This, however, restricts food subsidies to inferior foods which has a cost on the poor (they would prefer non-inferior foods)

3.3. Guaranteed employment schemes: workfare versus welfare. (Besley and Coate, AER 1992)

Conditional targeting: benefit from program if agree to work
Self-targeting: poor choose to participate; non-poor self-exclude
Example: India's Maharastra Employment Guarantee Scheme, food-for-work programs (World Food Program)
Assumptions:

Two types of workers:

Low ability (L) (also called poor) with frequency γ and wage w_L

High ability (H) (also called non-poor) with frequency $(1-\gamma)$ and wage w_H.

Poverty line: z
Income: y_i with $y_L < z < y_H$
Time worked in the private sector: l
Mechanism design: Workfare contract = (b, c):

Cash transfer: b
Required time worked in the public sector (non-productive labor): c

i) Targeted welfare program (full information)

The policy maker can identify types exactly
Transfer to H: $b_H = 0$
Transfer to L: $b_L = z - y(w_L) = z - w_L l'_L$

This is the cheapest option, but it cannot be implemented in developing countries where information on abilities (potential wage earnings) does not exist

ii) Untargeted welfare program (full ignorance)

The policy maker cannot identify types, and hence need make a flat transfer to all, equal to what the L-types need to get out of poverty:
Transfer to H and L: $b_{H,L} = z - y(w_L)$

This is quite expensive, especially if many non-poor, low wages

iii) Workfare program

Use a work requirement to achieve a separating equilibrium (adverse selection problem): the offer (b, c) must be such that

- Nobody has the incentive to masquerade into being of the other type (incentive compatibility constraints): the return to labor in workfare is below the opportunity cost for the non-poor
- The poor are willing to participate (participation constraint)
- Participation brings the poor to poverty line (poverty alleviation constraint)

H-types: (b, c) offer induces them to self-screen out as private work is more profitable to them (separating work requirement)
L-types:

Require from them a fixed public sector work contribution c_L (hence, $l'_L = 8 - c_L$)
Offer a flat transfer: $z - y(c_L, w_L)$

Workfare has a cost trade-off between two effects:

A lower cost than untargeted welfare since it requires no transfer to the non-poor
A higher cost than targeted due to less private sector work by the poor, and hence lower private sector earnings that need to be compensated by higher welfare transfers. Hence, the welfare transfer to the poor is higher than under targeting.

iv) When is workfare better than untargeted welfare?

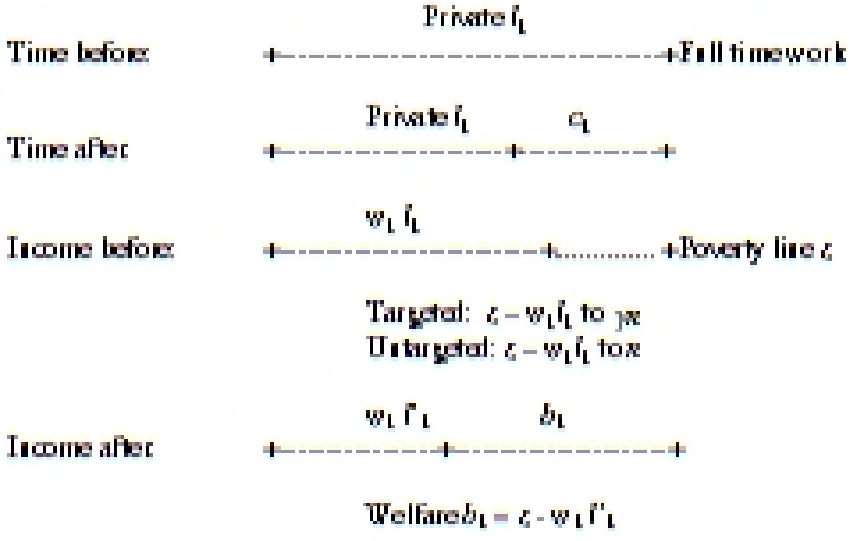
Workfare is better than untargeted welfare when $w_L < (1-\gamma)w_H$

Hence, it works best when:

The share of poor γ is a small fraction of the population
The wage of the poor w_L is low (low private earnings potential).

Note: Can make public work productive, for example WFP-Plan Sierra (soil erosion practices), U.S. parks (clear paths).

v) Summary



4. Group targeting: community-based targeting

4.1. Participatory mechanisms

Community selection of beneficiaries and delivery of benefits for social programs (Decentralization. Block grants to community like in Bolsa Escola, Brazil)

Advantages:	Use local information
	Use local notions of deprivation (community ranking: using piles of cards)
	Use local social capital (local organizations) for enforcement (control corruption)
	Lower cost (lower administrative salaries)
Disadvantages:	Local rent seeking: creates local conflicts (divisive of community)
	Local capture (appropriation by elites, corruption, use for clientelism)
	Local preferences may not be pro-poor (Differ from central agency preferences: Used differential matching formulas as community incentives).
	Lack of local administrative capacity
	Induce population movements (migration of poor seeking better welfare in response to community heterogeneity in quality of welfare)
	Loss of national political support

Note: can use hybrid center-community mechanisms (e.g., matching formulas but local choices)

Examples: Colombia's DRI, program priorities implemented through co-financing rules, Community-Driven Development (CDD)

I-C Fagnet's results for Bolivia: "needs" better met in poorer, smaller municipalities

4.2. Cross-reporting

If qualifying households have full information about the endowments of everyone in the village, and can thus identify the non-qualifying households, a scheme of cross-reporting can be put into place. The qualifying households are asked to identify the illegitimate participants, and in so doing gain a higher share of the program benefits as a consequence of weeding out the non-qualifying households. This contract is incentive compatible if the qualifying participants keep the allocation to non-qualifying participants (reward to whistle blowers)

4.3. Group targeting and random audits

Self-targeting can be achieved when agents are informed, not necessarily about everyone in the community, but at least about a subset of others in their own surroundings. In this case, potential beneficiaries are induced to self-select into sub-coalitions. Screening is thus delegated to the group members who guarantee that the coalition does not include any non-qualifying members. Compliance is achieved by threatening the group of complete loss of benefits if any cheater is found by random audits (Rai)

5. Conditional targeting for education and health

- Why target the currently poor? (Progresa, Prof. Bolsa Educacao)
- Target instead those at risk of not going to school, at risk of ill-health. Observe that many children of poor go to school (educated parents, close to a school) while many children of non-poor do not go to school (uneducated parents, far away from school)
- Make transfer conditional on school attendance, visits to health center. Is a contract with beneficiaries
- Focus on symptoms (cash incentives to send children to school) or on determinants of not sending children to school? Build more schools (reduced distance), improve quality, inform uneducated parents about benefits of education, give access to credit, etc

IV. Trade-offs in targeting

i) Effective program budget (budget that reaches the poor) vs. administrative costs (cost of reducing targeting errors): optimum trade-off

ii) Political economy: Precise targeting may erode political support for the program (e.g., Sri Lanka's targeted food subsidies in 1977). Political function of leakages: optimum targeting for project viability that balances political support (increase Type II errors) and benefits to the poor (size of the program). With better targeting, poor may get a larger share of a smaller budget and be absolutely worse-off

iii) Targeting the poor is good for welfare programs but not for development projects: Do ghettoize the poor by linking them to the rich! (O. Damiani's results for Petrolina in Brazil where poor farmers benefit from development initiatives taken by non-poor farmers)

V. Food transfers and secondary markets

i) Food subsidies programs

In-marginal transfers: food transfer < food expenditure after income effect
Substitute food received for food that would have been bought after income effect
Effect on food consumption is a pure income effect

Extra-marginal transfers: food transfer > food expenditure after income effect
If secondary market same as before
If no secondary market: consume more food that would have wanted of pure income effect
If market with transactions costs: in-between the above two

ii) Price subsidies programs

If the national supply of food is inelastic: Fair price shops with subsidized foods impose a backlash effect on excluded poor through rising prices (unless food distributed in fair price shops is imported food with no real exchange rate effect). Example: India where food subsidies are costly, urban and implemented with domestic supply.

Welfare effects of food subsidies (Binswanger and Quizon for India) using a multimarket for India:
- Targeting and exclusion: who among the poor benefits?
- Source of food: domestic (price will rise) vs. imported (real exchange rate rises)
- Who pays the fiscal cost: domestic tax on farmers (forced procurement on large farmers), or tax on urban rich, or foreign aid

VI. Other issues

1. Cash transfers vs. in kind transfers (food, energy, housing, etc): cash always better, but political economy of cash transfers more difficult

Difficult to obtain political support for cash transfers
Difficult to target (leakages, mimicking corruption)

2. Behavioral response of program participants: the net impact on welfare?

- "Negative" incentives effects: the labor-leisure choice. Transfers increase leisure, decrease work and decrease private-to-private transfers, reduce savings
- "Positive" incentives: Procampo in Mexico (income multiplier), higher school enrollment reduces child labor (Progresa)

3. Social funds: organized as temporary safety nets for shocks, transitions

Programs: public employment, basic needs, microcredit
Decentralized and demand-led by communities
Administered by semi-autonomous service agency
Popular with donors as administratively expedient: funded beyond emergencies
Bypass traditional public sector services: OK in the short run. Effective in the long run? Need be complemented by decentralized governance (Tendler).

4. Focus on the determinants of poverty or on the symptoms of poverty?

- Determinants: Idiosyncratic market failures for credit and insurance

Programs to change unfavorable household characteristics, control over assets, context (lack of public goods, lack of institutions for credit and insurance)

- Symptoms of poverty: Lack of education, health, food, insurance

Conditional transfers to increase demand for education and health. Food subsidies. Safety nets.

VII. Programs for transitory versus chronic poverty

1. Transitory poverty: problem of income fluctuations (vulnerability)

- Provide access to risk-coping instruments: credit, insurance
- Social funds, social safety nets programs
- Guaranteed employment programs as safety net (Maharastra): need set up program ex ante relative to income shocks): Immediately effective as safety net when shock occurs
  Provides risk-coping instrument

2. Chronic poverty: problem of income level

- Provide access to productive assets (land, education, social capital)