Take-Up in Social Assistance Programs: Theory and Evidence

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Motivation

- The ”One Yuan on the Sidewalk” Question
- A person is walking down the sidewalk in Beijing and sees 1 Yuan on the sidewalk: they don’t pick it up. Why not?
- This person does pick it up! So: some pick it up, and some do not.
- Figure 1
This occurs in many subfields of transfer programs:

[1] People do not take advantage of tax provisions that would reduce their taxes

[2] Some people do not apply for Unemployment Benefits even though they could

[3] Takeup of retirement benefits

And, in many, many other applications, individuals do not seem to take advantage of opportunities they are offered

In economics, we assume there must be a reason: people are rational; there must be some barrier, cost, or something related
Some U.S. transfer program takeup rates

1. Food Stamps (food for the poor): 83%
2. AFDC/TANF (cash program for the poor): 29%
3. Medicaid (medical program for the poor): 67%
4. Government subsidized housing: 24%
5. EITC (tax credit for low-wage workers): 80%

Note: These are rates of takeups of money eligibles
- Dibao: China
- Other countries: Mexico, other South American countries
Outline

1. Theories
2. U.S. Evidence
3. DiBao
Theories

1. Mismeasurement
2. Costs
3. Stigma
4. Information
5. Program constraints
Mismeasurement

- In most cases, have to use different data set to measure eligibility and participation
- If eligibility rules are complex, could make a mistake
- But no need to spend any time on this one: errors are likely small relative to how far below 100% takeup rates are
One measurement problem: if labor supply is endogenous, then it is not clear how to measure who is eligible.

Could compute a slightly larger "eligible" population.

Table 2.
Person III is initially ineligible but reduces income to become eligible.
Costs

- Effort ("hassle") costs; Money costs; Time costs
  - Effort: filling out forms, understanding the rules, dealing with the government; these costs can be greater or smaller, even holding fixed time and money costs
  - Money costs: transportation costs, costs of obtaining documents
  - Time costs: time spent visiting the government office, time traveling, etc.
  - Note: no distinction made between costs of applying and (on-going) costs of participation; need a dynamic model for that
Model:

\[ U(Y_{net}) - \psi P \]  \hspace{1cm} (1)

\[ Y_{net} = B + W(H - c_t P) - c_m P \]  \hspace{1cm} (2)

where \( Y_{net} \) is net income, \( P \) is a participation indicator \((0,1)\), \( B \) is the program benefit, \( W \) is the hourly wage rate, \( H \) is (fixed) hours of work.

Effort costs = \( \psi \)

Money costs = \( c_m \)

Time costs = \( c_t \)
So

\[ P^* = U[B + W(H - c_t) - c_m] - U[WH] - \psi \quad (3) \]

\[ P = 1(P^* \geq 0) \quad (4) \]

where \( 1() \) is the indicator function.

The issue is whether the potential \( B \) is high enough to outweigh the 3 costs.

Those with higher \( W \) lose more income and hence (c.p.) are less likely to participate unless \( H = 0 \) (even if eligible).

(And if \( U \) is concave, lower \( W \) individuals will have a higher utility gain from participating, c.p.)
There are two types: "internal" stigma and "external" stigma.

- **Internal stigma:** feelings of negative self-worth, loss of self-esteem.
- **External stigma:** disapproval by others who observe you to receive benefits.

Besley-Coate (1992) has a good discussion, cites sociological literature.
\[ U(Y_{net}) - \psi P \]  
\[ Y_{net} = B + WH \]  
so it is equivalent to effort costs; disutility of participating

\[ P^* = U[B + WH] - U[WH] - \psi \]  
\[ P = 1(P^* \geq 0) \]
External

\[ U(Y_{net}) - \psi P(1 - \overline{P}) \]  \hspace{1cm} (9)

where \( \overline{P} \) is mean participation in your peer group, geographic area, etc.

\[ P^* = U[B + WH] - U[WH] - \psi(1 - \overline{P}) \]  \hspace{1cm} (10)

\[ P = 1(P^* \geq 0) \]  \hspace{1cm} (11)

But this sets up a social interactions model where an equilibrium $\bar{P}$ is one where the fraction of individuals choosing $P = 1$ by maximizing $U$ equals the $\bar{P}$ that is affecting their decisions.

Manski (1993), Moffitt (2001), Brock-Durlauf (2001)

Can get multiple equilibria, some stable and some unstable.

Policy $(B)$ can move you from one equilibrium to another.

Note: level of group participation could also affect level of information (see next model).
Can be set up different ways

Here, assume an eligible has a subjective probability \( p^s \) that they are eligible

Decide whether to apply, and assume there is an application cost \( \phi \)

If apply, utility is \( p^s U(B + WH) - \phi \)

If do not apply, utility is \( U(WH) \)

Since they are eligible, if they apply, they will be accepted, so

\[
P^* = p^s U[B + WH] - U[WH] - \phi \quad (12)
\]

\[
P = 1(P^* \geq 0) \quad (13)
\]
Two additions: (i) government provision of information and (ii) private information acquisition

In both cases, assume the individual is uncertain and 
\[ p^s = p + \epsilon \]

At this general a level, no need to assume that \( \epsilon \) is mean zero

Government can provide information, \( I_g \), so \( p(I_g) \)

Individual can acquire information at some cost, \( c \), which lowers the variance of \( \epsilon \) (or moves \( p \))
Program Constraints

- Extreme case: quota
- To the individual, there is a probability of being accepted; same model as information
- Unclear what the government objective function is
- For a given budget expenditure, could offer a lower $B$ to more people
- Is a distributional issue: if there is a quota, are priorities assessed?
Government has an objective function: $V(\text{Expenditure, Assistance to the Poor})$

Instead of a quota, government chooses a probability of acceptance to an applicant

$$Q^*(X) = f(X) + \nu$$  \hspace{1cm} (14)

$$Q = 1[f(X) + \nu \geq Q_{\text{min}}]$$  \hspace{1cm} (15)

where

$Q^* = \text{value of providing assistance to a person with observed characteristics } X \text{ and unobserved (to the econometrician) characteristics } \nu$

$Q_{\text{min}} = \text{cutoff value for providing assistance}$

$Q = 1 \text{ if the applicant is accepted}$
- Individuals choose to apply or not, under uncertainty about $\nu$ but with knowledge of $Q_{min}$.
- Government knows the application supply function $P[Q_{min}]$.
- Government maximizes $V$ by choosing $Q_{min}$ subject to the application supply function, knowing that choosing $Q_{min}$ will determine both expenditures and who receives assistance.
- TakeUp fraction is the fraction of the eligible population for whom $\{P = 1, Q = 1\}$
- Government has other tools: $\phi$, for example (can increase application cost)
Who Receives Assistance?

- In the Program Constraints model, the government decides who receives assistance.
- In the other models, those with the highest utility of participating receive assistance, conditional on costs, stigma, and uncertainty.
- In most models, those with the highest MU of participating are those with the greatest "need" (=low $W$; could add other variables).
But if costs, stigma, or uncertainty are correlated with \( W \),
could get different results.

For example, if those with the lowest levels of education have
the most difficulty applying and/or complying during
participation, they may be less likely to participate.

Or those with low levels of education may be the least
knowledgeable and face the greatest subjective uncertainty.
Nichols-Zeckhauser

- Noted that imposing lump-sum costs on participation can be welfare-improving if those with low MU of participating are discouraged from participating more than high-MU individuals.
- Money-savings from discouraging low-MU individuals from participating can be reallocated to the program, benefitting high-MU individuals.
- There is therefore a social planner rationale for imposing costs on application and participating.
- But have to be sure that those do not participate are not those who have the lowest $W$ and the most difficult time complying.
Dynamic Models

- Can separate application cost from compliance cost
- Learning: about true probability of eligibility
- Learning about $\nu$
- Most of these imply that the probability of takeup is higher than in the static model, because there is a future payoff from applying today
• Assuming internal stigma
• Cited literature from sociology
• Participation rates in the AFDC program about 1/3
• Participation negatively related to $W$, positively affected by the potential benefit
• Static selection bias model of labor supply
Fraker-Moffitt 1988

- Same as Moffitt (1983) but 2 programs: AFDC and Food Stamps
- Participation rates of .41 and .44, .37 in both
- Positive effects of benefits, negative effects of W
- Large positive correlation in stigma in the two programs
Hoynes 1996

- An old two-parent cash program, models joint family labor supply
- Participation rate .08
Keane-Moffitt 1998

- Extended to 3 programs: AFDC, Food Stamps, and government housing
- .08 participate in all 3
- Used administrative expenditures in local areas as instrument for participation
- Model for housing did not fit well: program has quotas and no apparent priorities
Food Stamps

RCT in Pittsburgh: randomly gave treatment group information about their likely eligibility

Large increase in takeup

Implies importance of information

But information acquisition is endogenous: those with lower incomes and higher potential benefits are more likely to have acquired information
Currie-Grogger 2002

- Food Stamp program; "recertification intervals": the number of months in between the times when the family has to travel to the government office to "recertify" eligibility
- Found that the shorter the interval, the lower the participation rate
- Implies the importance of costs
Review of reasons for non-takeup up to that time
Lists stigma, costs, and information
There is more evidence for the importance of costs and information than stigma, but stigma is hard to measure
Reviews current evidence on whether the worse-off families or the better-off families are not taking up the program; evidence too scanty to reach conclusions
Ham-Shore-Sheppard 2014

- Medicaid program, takeup rate is .51
- But emphasize is on heterogeneity
- For different groups, ranges from .12 to .79
- A function of demographic characteristics (children, etc.)
- But also need: the neediest/lowest income families have higher takeup rates
EITC (tax credit) has takeup .75

RCT with mailings to taxpayers known to be eligible but did not receive

Eliminates cost as a consideration (easy to return an application) and assumes stigma is low

Large positive response to providing information

Information therefore important
Food Stamps recertification again
One half of those who do not show up to recertify were, in fact, eligible
Tested provided more information in a simplified way: increased takeup
Deshpande-Li 2019

- Disability program: many offices were closed, requiring individuals to travel further to an office
- Led to 16% decline in takeup
- Points to costs
Finkelstein-Notowidigdo 2019

- Had admin data on elderly in the so-called Medicare program
- Calculated Food Stamp eligibility; only .42 eligibles taking up Food stamps
- RCT, treatment group 1 got information on eligibility
- Treatment group 2 got information + assistance with applying
- Both increased takeup, group 2 more than group 1
- So both information and costs are important
- Also found that new participants were less needy than those initially on Food Stamps (but there was still a needy non-takeup group)
Moffitt 2019

- Studied AFDC program in 1980s, when states imposed administrative barriers
- Using cross-state variation in barriers and denial of eligibility
- Had large effects on participation
- Implies importance of political constraints
- Consistent with Herd-Moynihan (2018) on "Administrative Burdens": they are an intentional policy lever
Similar to Currie-Grogger (2002) and Grey (2019) but has arguably more random variation in recertification intervals

Same finding: more frequent recertification lowers takeup
DiBao

- Rural minimum living standard program, one of the largest in the world
- Began in the 1990s, went national in 2007
- Provides unconditional cash assistance to those with incomes below a locally-set minimum
- ”Fill the gap” between threshold and family income (so: 100% marginal tax rate)
- Beneficiary selection and benefit amounts also determined locally
- Is an urban dibao program but it is separate
A concern about targeting

A large fraction of recipients may not meet the eligibility conditions and a large fraction of those who do not take up are eligible (only 20% takeup of eligibles?)

Variation in application: in some areas, it is open, but in others ”by invitation”

Village committees target beneficiaries and screen applicants

U.S. history: too much local control leads to ”administrative discretion” (including deciding who is ”deserving”)

• But determining rural income is difficult because so much income is agricultural and/or in-kind
• Ways of calculating income vary across areas
• Often use physical assets, housing, etc. (similar to Progresa in Mexico)
• Makes it difficult to estimate takeup, since measurement error is large: calculating eligibles on the basis of survey incomes may not correctly measure eligibility
• Given the very local nature of the rural Dibao program, non-takeup is less likely to be a result of stigma, lack of information, or costs

• Although the personalized nature of local villages is hypothesized to contribute to stigma

• More likely to be the result of program constraints (meaning government strategies on who is allowed onto the program)
There is a large literature on the benefits and costs of local control, and it is a hotly debated issue in the U.S., politically speaking.

Many in the U.S. prefer a mixed system: the central government imposes some restrictions on the localities (general sets of eligibility rules, minimum benefits possibly adjusted for cost-of-living, etc.) but also leaves some discretion to the localities.

Finding the right balance is difficult: restricting localities too much will prevent programs from adapting to local circumstances, but too few restrictions allows localities to follow policies inconsistent with national/central preferences.

Also need a central government monitoring function to visit and inspect local operations.
Thank you for listening to my thoughts
Feel free to email me at moffitt@jhu.edu with comments.
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