Paperless Food Assistance: The Impact of Electronic Benefits on Program Participation

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Paperless Food Assistance: The Impact of Electronic Benefits on Program Participation

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Introduction

- The USDA’s Food Stamp Program (FSP) (now known as the Supplemental Nutrition Assistance Program (SNAP)) was launched in 1965 to provide food benefits to low-income households.
- In June 2004, the USDA announced that all states successfully converted from paper coupons to plastic Electronic Benefits Transfer (EBT) cards for delivering food stamp benefits.
- A primary reason for this transition was to improve access to the FSP, which has suffered from low rates of participation among families eligible for benefits.
- EBT cards are arguably more convenient for recipients and they reduce the social stigma felt by recipients when using paper coupons and are expected to encourage participation in the FSP.

Data Sources

- We use a panel data binary choice model with individual-specific effects to specify the household FSP participation decision:
  \[ S = ZF + F + \epsilon \]
  where \( S \) is the FSP participation status (0 or 1) at state, \( Z \) is a vector of household characteristics, \( F \) is a vector of state policy characteristics, and \( \epsilon \) is the error term.

- The econometric difficulties with estimating this model include:
  - We only observe whether a household participated in the FSP and FSP benefits for participants
  - We do not observe the minimum amount of FSP benefits required for the household to participate

Objectives

- Examine the impact of the EBT system on household FSP participation behavior across the entire period of nationwide adoption (Figure 1 shows EBT adoption over time).
- Model FSP participation decisions at the household level using a structural model to disentangle household, FSP program policy and local economic factors on FSP participation.
- Develop and use a measure of state-level EBT penetration as the percentage of food stamps issued via EBT cards in a given year.

Methods

- We use a panel data binary choice model with individual-specific effects to specify the household FSP participation decision:
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  where \( S \) is the FSP participation status (0 or 1) at state, \( Z \) is a vector of household characteristics, \( F \) is a vector of state policy characteristics, and \( \epsilon \) is the error term.

- The econometric difficulties with estimating this model include:
  - We only observe whether a household participated in the FSP and FSP benefits for participants
  - We do not observe the minimum amount of FSP benefits required for the household to participate

- We address these issues by:
  - Estimating T cross-sectional probits and obtain inverse Mills ratios for each period
  - Using a pooled linear regression and generating predicted FSP benefits for households who receive and do not receive food stamps to obtain consistent estimates of the FSP benefits equation including the inverse Mills ratios

- Estimating the structural participation equation with a correlated random effects specification that includes predicted FSP benefits as an explanatory variable

Results

- State-level EBT penetration rates have a positive impact on the probability of food stamp receipt among low-income households.
- The average low-income household propensity to participate in the FSP increases by 4 percent with the complete switch from paper coupons to EBT cards (e.g., when state EBT penetration rates go up from 0 to 100 percent).
- After controlling for predicted FSP benefits, participation is also a function of number of children, age of head, racial status, educational attainment, single motherhood, distance to the FSP office, county unemployment and county-wide FSP participation rates.

- Table 1: Structural FSP Participation Equation Parameter Estimates

<table>
<thead>
<tr>
<th>Variable</th>
<th>Parameter</th>
<th>Average Partial Effect (APE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State EBT Penetration Rate (%)</td>
<td>0.002 ***</td>
<td>0.004</td>
</tr>
<tr>
<td>Rural South</td>
<td>-0.198 **</td>
<td>-0.03</td>
</tr>
<tr>
<td>Head is High School Graduate</td>
<td>-0.661 ***</td>
<td>-0.1</td>
</tr>
<tr>
<td>Head has College Degree</td>
<td>-1.111 ***</td>
<td>-0.164</td>
</tr>
<tr>
<td>County Unemployment Rate (%)</td>
<td>0.751 ***</td>
<td>0.144</td>
</tr>
<tr>
<td>Distance to Closest FSP Office (miles)</td>
<td>0.021 **</td>
<td>0.003</td>
</tr>
</tbody>
</table>

- The effect of EBT on participation probabilities is largest among households residing in the rural South, those not headed by a single mother, and those with a White household head.
- These differences may be attributed to larger reductions in stigma levels attached to program participation with the switch to electronic cards.

- Table 2: The Differential Impact of EBT Across Household Groups

<table>
<thead>
<tr>
<th>Subgroups</th>
<th>Differential Impact of EBT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single Mother - (Not Single Mother)</td>
<td>-0.0007</td>
</tr>
<tr>
<td>(Non-White) - (White)</td>
<td>0.0005</td>
</tr>
<tr>
<td>(Rural South) - (Not Rural South)</td>
<td>0.0004</td>
</tr>
</tbody>
</table>

Conclusions

- In this study, we explore the impact of the EBT systems on household FSP participation behavior.
- Contrary to previous studies mainly using state caseload data and discrete indicators for EBT presence in a given year, we find that state-level EBT penetration rates have a positive impact on FSP participation among low-income households.
- This finding implies that the switch from paper coupons to EBT cards was successful in reducing stigma and inducing participation in the program.
- We also find that EBT penetration rates have an uneven impact on subpopulations, possibly due to differences in the stigma levels attached to program participation across different household groups.
- The effect of the other covariates on FSP participation reflects both real costs of participation and stigma. Further research is needed to disentangle these effects.
- Efforts to increase FSP participation rates will need to focus on reducing both access costs and stigma. The EBT system has been a positive step in that direction.