The Impact of Subsidized Health Care on Food Expenditure and Food Security: Evidence from Colombia
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Research Question
- What is the effect of a subsidized health care regime on household food expenditure and food security?
- Evaluate whether this scheme generates an income effect on food expenditure.
- Analyze if helps to mitigate food insecurity on poor households.

Background
Characterization of the Colombian Health Care System
- Law 100 of 1993 → Creates a subsidized regime (SR), aiming to cover poorest population and unemployed. Formal workers and non-poor households belong to the contributive regime (CR).
- Public workers and those enrolled in the military have their own special health care regimes. Uninsured population have the right to access to public clinics and hospitals for emergency assistance.

Eligibility to the Subsidized Regime
- SISBEN score → Proxy means test.
- Categorization of households not only based on their income, but also on socio-demographic characteristics (dwelling units, possession of durable goods employment status, schooling level, etc.).
- Information source: Census of the Poor. Not available to the public.

Previous Literature
- Positive effect of the SR on health care utilization and health outcomes -substitution effect (e.g., Panopoulou and Vélez, 2001; Trujillo et al., 2005; Gaviria et al., 2006; Camacho and Conover, 2013; Miller et al., 2013).

Data and Descriptive Statistics
- Data → 2008 Living Standards Survey (LSS)
- Detailed information about household expenditure.
- Food security supplement → Incorporates the same battery of questions as the Current Population Survey (CPS).
- Sample: 50,542 individuals in 13,611 households.

Distribution of Households by Health Care Insurance Status

![Distribution Chart]

Descriptive Statistics

<table>
<thead>
<tr>
<th></th>
<th>Subsidized</th>
<th>Uninsured</th>
<th>Differences in means</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean</td>
<td>Std. Dev.</td>
<td>Mean</td>
</tr>
<tr>
<td>Log(food expenditure)</td>
<td>11.080</td>
<td>0.862</td>
<td>11.300</td>
</tr>
<tr>
<td>Share of food expenditure</td>
<td>0.662</td>
<td>0.203</td>
<td>0.607</td>
</tr>
<tr>
<td>Share of starchy staples</td>
<td>0.266</td>
<td>0.168</td>
<td>0.224</td>
</tr>
<tr>
<td>1 if HH is food insecure</td>
<td>0.533</td>
<td>0.496</td>
<td>0.496</td>
</tr>
</tbody>
</table>

Source: 2008 Colombia LSS; Author’s estimates.

Endogeneity of the treatment variable (y) → Enrollment to the SR is given by the SISBEN score:
- Score is subject to self-selection and measurement error.
- Politicians manipulate the score for electoral purposes (Camacho and Conover, 2011).
- Researcher cannot observe original score, only enrollment (treatment) status.

Instrumental variable (p) → Proportion of lifetime the household head reports having resided in the current municipality (Gaviria et al., 2006).
- The extent of political connections and social networks within the community are highly correlated with enrollment to the SR.

Econometric Framework and Identification Strategy

- First-stage equation
- Second-stage equation

| Probability of enrollment to the SR, conditional on the IV |

- Other controls: X; Household characteristics; H; Self-reported health status of household members.

Preliminary Results and Conclusions

- Frist Stage Results (\(A_{1}\))
- Control variables (X; H)
- Department Fixed Effects

<table>
<thead>
<tr>
<th></th>
<th>Model 1</th>
<th>Model 2</th>
<th>Model 3</th>
<th>Model 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumental relevance</td>
<td>YES</td>
<td>YES</td>
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<td>YES</td>
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<td>YES</td>
</tr>
</tbody>
</table>

Instrument is relevant and estimates are very close to Gaviria et al. (2006), which is 0.1169.

Second Stage Results, Model 4 (\(y_{1}\))

- Estimation for food expenditure is not statistically significant → No evidence on income effect.
- But there is a positive impact on the food share → Engel’s Law would not hold.
- Positive effect on the share of starchy staples → Bennett’s Law would not hold.
- The SR has a positive impact on mitigating food insecurity.