The Impact of Fertilizer Subsidies on Displacement & Total Fertilizer Use.

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How does subsidized fertilizer affect commercial fertilizer purchases?

Displacement (negative effect)
People who would have bought fertilizer at commercial prices use subsidized in its place.

Why it matters
• Impact on total fertilizer use.
  – How much new fertilizer enters system and ultimately ends up on farmers’ fields
  – Matters for efficiency/cost-effectiveness
• Impact on private sector
  – Measured as purchases here
Some evidence from Zambia

(Xu, Burke, Jayne & Govereh 2009)
- Fertilizer subsidies have a negative effect on commercial purchases in high demand areas.
- Fertilizer subsidies have a positive effect on commercial purchases in low demand areas.

Would targeting reduce displacement and increase total fertilizer use?
What implications for Malawi?

What affects fertilizer demand and displacement?

1) Access factors
   - credit, distance, number of dealers, transport costs

3) Prices
   - fertilizer, maize, tobacco

4) Agronomic
   - weather, soil

5) Household characteristics
   - age, number of family members, mortality

6) Quantity of subsidized fertilizer acquired
Measuring Displacement

• Subsidy coupons not distributed randomly or in equal quantities.

• **Therefore can’t compare commercial purchases by recipients and non-recipients.**

• Need to consider how much commercial fertilizer would have been purchased if subsidy had not existed?

• Need to compare changes within HH over time.

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Data for Measuring Displacement

<table>
<thead>
<tr>
<th>Survey Wave Name</th>
<th>I IHHS2</th>
<th>II AISS1</th>
<th>III AISS2</th>
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</thead>
<tbody>
<tr>
<td>Year</td>
<td>2002/3 &amp; 2003/04</td>
<td>2006/07</td>
<td>2008/09</td>
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<tr>
<td>Number of HH interviewed</td>
<td>11,280</td>
<td>3,287</td>
<td>1,982</td>
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• Many households drop out

• **Analysis of AISS 2 ultimately focuses on the 1,210 HH interviewed in all three waves**
What happened to commercial purchases in recent years?

- Commercial purchases decreased between first two waves.
- Commercial purchases rebound between second & third waves.
- This in itself does not indicate degree of displacement.

Data indicate targeting improved in 2008/09 over 2006/07:

- In 2009 greater qty of subsidy given out to more people 78% in ‘09 vs. 57% in ‘07.
- As in ’07, in ‘09 those who got more subsidy were relatively wealthier than others in terms of assets and livestock.
  - In ‘09 not as skewed to a few households.
  - In ‘09 people who got subsidy bought a bit more commercial fertilizer.
- Smaller farmers may have received more in ‘09 then in past years.
What about resale in 2009?

- In the data, 22% of commercial purchases in 2008/09 made from neighbors or relatives
  - These prices avg. 88 kwacha/kg
  - Compare to avg. price of 205 kwacha/kg for purchases from market, traders, etc.

- In the data, about 20 mt (1/3) of commercial fert. purchased for less than 150 kwacha/kg.
  - Considered to be subsidized fert. in this analysis

Next to nobody said they sold coupon

Displacement Estimate Over Time

From 2002/03 to 2006/07: One Kg of subsidized fertilizer displaced 0.23 kg of commercial fertilizer. 23% Displacement

Preliminary results show in 2008/09: One Kg of subsidized fertilizer displaced 0.03 kg of commercial fertilizer. 3% Displacement

Recent evidence shows bounce back effect form 2006/07. Encouraging but why?
Factors causing recent commercial purchases to increase.

1) Late coupon delivery forces farmers to purchase commercial.
2) Increased tobacco prices help drive demand for fert.
3) Existing commercial buyers bought more.
4) People increasing well-being over time.
5) Seed subsidy encouraged OPV and hybrid use. Increased demand for fertilizer.
6) Private sector & farmers adjusted to presence of subsidy?

Conclusions

• Clear evidence of displacement initially

• Preliminary evidence shows commercial purchases rebounded in 2009 & much lower displacement in recent years.

• Targeting matters for efficiency!
Thank you for your time!

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