

# 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 positive effect on commercial purchases in low demand areas.

Would targeting reduce displacement and increase total fertilizer use?

What implications for Malawi?

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## 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

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# 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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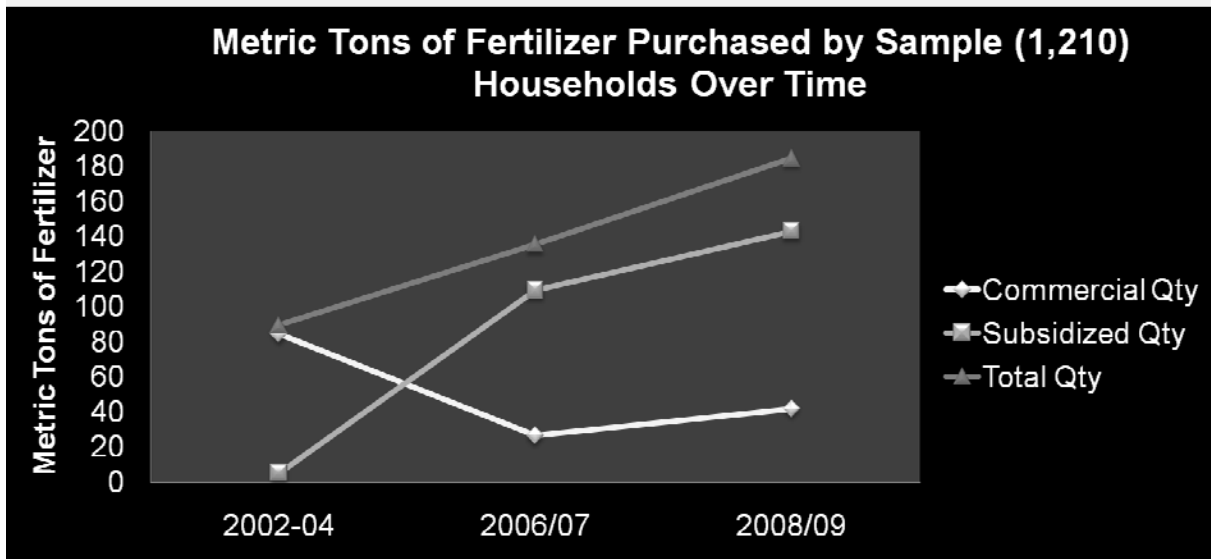
## Data for Measuring Displacement

Survey Wave Name	I IHHS2	II AISS1	III AISS2
Year	2002/3 & 2003/04	2006/07	2008/09
Number of HH interviewed	11,280	3,287	1,982

- Many households drop out
- **Analysis of AISS 2 ultimately focuses on the 1,210 HH interviewed in all three waves**

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## 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 than 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** 9

## 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?<sup>10</sup>**

## 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?

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## Conclusions

- Clear evidence of displacement initially
- Preliminary evidence shows commercial purchases rebounded in 2009 & much lower displacement in recent years.
- Targeting matters for efficiency!

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Thank you for your time!



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