Selling low and buying high? Understanding farm profitability

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Food prices matter for the poor

• Poor households spend a lot of money on food
• Many poor households earn most of their income from selling food

Typical assumption: farmers have little control over the prices they face
At our rural study site: Typical seasonal increase is 100%!
So: buy low, sell high?
Sell low, buy high!

Inventories

Quantity sold minus purchased
What’s going on?

Farmer reported price change
What’s going on?

Q: Why do you sell at harvest instead of later, when prices are higher?

A: I need the cash.
With OAF, we offered a storage loan

• Offer cash (~$100) at harvest (T1) or three months after harvest (T2) to randomly selected OAF farmers
• Stored maize as collateral
• 10% interest, repay flexibly
• Re-visited treated and control farmers many times throughout the year to track inventories, sales, purchases, etc.

Take-up was very high: >70%
But what if the loan “works”? 

• Farmers might sell less at harvest, sell more later on: 
  ➢ This could reduce the price dispersion! 
  ➢ This could reduce the profitability of the loan!

To understand these price effects, we also randomized the number of loan offers across markets.
Sadly, overall price rise was small 2012-13
Results at the farmer level

Inventories

Net revenues

Per cap consumption (log Ksh)

Per cap consumption
Results at the farmer level

Inventories

Net revenues

Per cap consumption (log Ksh)
Results at the farmer level

Even with low price rise: 20% ROI after repayment for farmers who got the loan at harvest
What happened to prices?

Difference in prices, high versus low treatment density

Post-harvest prices ~5% higher in areas with lots of loans
What did these price effects mean for farmers?

• It reduced the effectiveness of the loan in “high density” areas
  – Arbitrage opportunity was smaller

• It helped revenues of control farmers!
  – (although not quite significantly so)
  – But probably also had positive spillovers outside our experiment
Conclusions

1. Access to well-timed credit can help improve the profitability of small farms.

2. Absence of credit markets spills over into other markets that matter for the poor.
   - Missing credit market exacerbates seasonal price swings.