Managing Food Price Volatility: A Review of Experience in Sub-Saharan Africa

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Organization

1. A few conceptual issues
2. Review of main findings
3. Implications for policy
Conceptual Issues
Competing models of the role of state and private sector in food markets:

Model 1: Rely on markets; state role limited to:
- Public goods investment
- Regulatory framework
- Strengthening of institutions / property rights

Model 2: Primary reliance on markets - but role for *rules-based state operations*
- e.g., buffer stock release to defend stated ceiling price
- Marketing board purchases at stated price announced in advance
- Transparent rules for initiating state imports

Model 3: Role for markets and *discretionary state intervention*
- Trade policies and marketing board activities change unpredictably
- Justification for unconstrained role for state interventions to correct for market failures
Model #1

• Few countries adhere to this (at least when they can afford not to)
  • But quite a few African countries have either no or very limited buffer stocks: e.g., Uganda, Mozambique, Tanzania, central African countries, and small west African countries
  • May not be considered credible in a region where historically citizens expect governments to intervene when food prices veer substantially from “normal”
Model #2

• If prices are non-stationary, the equilibrium price and price band to be maintained after a transitory shock is not clear
• Requires fairly sophisticated technical skill to implement
• Requires restraint by policy makers to defer to established rules
• Requires deep financial pockets
• Requires fast-response bureaucratic procedures to enable the rules to be maintained (e.g., quickly importing or buying sufficient stocks)
Model #3

- *Ad hoc* nature of policy gives rise to strategic interactions between public and private sector actors ➔ can create many unintended consequences
- Rules vs. discretion (Taylor, 1993)
- Shown to be associated with more volatile food prices
Review of findings
Review of findings

1. Price volatility is a major \textit{economic} problem – price stability contributes to economic growth

2. Food price volatility is a major \textit{political} problem. Policy analysts need to address these real problems to be taken seriously by policy makers

3. Strong evidence that price volatility adversely affects surplus-producing farmers and consumers

4. Little evidence that price stabilization policies (in African experience) contribute to price stability (Chapoto and Jayne, 2009; Minot, 2014; Mwanaumo et al., 2005)
5. Limited evidence of desired farmer/trader behavioral responses to price stabilization measures

6. Strong evidence of unintended adverse trader responses to price stabilization measures
   - Adversely affects market access conditions for smallholder farmers (Sitko and Jayne, 2013)
   - Countries most actively trying to stabilize prices tend to have the most volatile prices (Chapoto and Jayne, 2009; Minot, 2014)
Unconditional coefficient of variation in maize prices, 2000-2009

Source: Chapoto and Jayne (2009)
Review of findings (iii)


8. While international grain prices became more volatile (2000-2005 vs. 2007–2010), food price volatility in Africa did not increase. This contrasts with the widespread view that food prices have become more volatile in the region since the global food crisis of 2007–2008 (Minot, 2014)

9. Farmers’ view of the importance and magnitude of price risk is highly subjective
   • Perceptions of price risk vary greatly across farmers in same area
   • Found to be related to the price received in past seasons (Vargas-Hill, 2010)
Farm-gate maize prices compared to retail prices, Mulanje District, Malawi, 2009

[Graph showing farm-gate and retail maize prices for Mulanje District, Malawi, from March to September 2009.]
Review of findings (iv)

9. Surveys of African’s perception of changes in their food security after the 2007-2010 “food crisis” period highly variable, in general little change (Headey, 2009; Verpoorten et al, 2013)

10. Galtier’s conclusion: Market-oriented mechanisms for addressing price volatility (CE’s, forward contracting) have not been effective. Why? Some category B mechanisms are undermined by govt. operations in market to stabilize prices

11. Beneficiaries of price stabilization

   • Most of the benefits accrue to larger surplus farmers (Jayne et al, 2008 in Kenya; Bellemare et al, 2010 in Ethiopia)

   • Some attempts to subsidize consumers end up benefitting millers (Zambia)

   • Many small-scale farmers partially insulated from price volatility by their subsistence/artarkic orientation
Do African countries import instability from world markets?

- Price transmission within African countries surprisingly high (14 published studies reviewed)
- Price transmission from world to domestic markets is low
  - Higher for rice and wheat than maize and other staples
  - Hard to interpret (e.g., weakly functioning markets vs. deliberate government efforts to insulate)
- The greatest portion of African food price volatility is due to domestic factors:
  - Seasonal and annual fluctuation of supply
  - Limited transportation infrastructure
  - Restrictions on cross-border trade
Do African countries export instability onto world markets?

- Maize – Sub-Saharan African imports too small to affect world markets, even in aggregate. South Africa 1-2% of world exports.

- Wheat – African imports are 10% of total, but each country <3%.

- Rice – Greatest chance of contributing to world price instability. In 2011, Nigeria was #2 importer in world.

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<th>Share of world imports (Avg 2008-11)</th>
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<tr>
<td><strong>Maize</strong></td>
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<td>Sub-Saharan Africa</td>
<td>2.3%</td>
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<td>Kenya</td>
<td>0.5%</td>
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<td><strong>Wheat</strong></td>
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<td>Sub-Saharan Africa</td>
<td>10.4%</td>
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<td>2.6%</td>
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<td><strong>Rice</strong></td>
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<td>Sub-Saharan Africa</td>
<td>29.1%</td>
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<td>Nigeria</td>
<td>5.0%</td>
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<td>Cote d’Ivoire</td>
<td>3.0%</td>
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<tr>
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Conclusions
Conclusion #1:

• Yes, price stability contributes to economic growth

• But price stabilization efforts don’t necessarily contribute to price stability
  • African government’s track record with stabilizing prices has been mixed at best
  • Massive costs – and foregone investment in productivity-enhancing public goods
Conclusion #2

- **Current policies generally not exporting instability to world markets**
  - Orientation of most African governments is food self-sufficiency
  - Strategy of limiting dependence on imports in a period of high world food prices not likely to transmit instability to world market
  - Most African government (~58% of total SSA population) not engaged in cereal price stabilization
  - This conclusion could change if return to low world prices
Conclusion #3:

• Lack of academic consensus about who benefits from high food prices

  • Some argue that high food prices benefit mainly larger/commercialized farms (Jayne and Myers, 2008; Bellmare and Barrett, 2011)

  • Other studies correlate high food prices with poverty reduction, especially in LR (Headey, 2014; self-reported changes, e.g., Verpoorten et al, 2013)
Implications for Policy
What to do?

1. **Strengthen annual crop forecasts**
   - Over-estimated E(Q) → failure to import until the estimate is found to be wrong → food crisis
   - Jerven critique

2. **Monitor cross-border trade more rigorously**
   - Monitoring trade flows are important complement to prices

3. **Farmer marketing extension training + better market information**
What to do? (ii)

4. Support “nuts and bolts” strengthening of grain markets that will allow CEs to be successfully introduced
   • collateral management services
   • warehouse certification services
   • settlement services
   • contract dispute resolution processes
   • provide the enabling environment to encourage new private investments in storage and transportation
   • CE’s can function in Regimes 1 or 2, but not 3

5. Move toward more rules-based forms of market intervention

6. Support economic development (best LR solution)
### Competing models of the role of state and private sector in food markets:

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*Note: The diagram illustrates the spectrum of models ranging from a primary reliance on markets (Model 1) to a role for markets and discretionary state intervention (Model 3).*
What to do? (iii)

5. Eliminate restrictions on cross-border trade
What to do? (iv)

5. What about “international virtual reserves” proposals?

- Requires much information that may not be available in real time
- Prone to default in extreme years,
- Requires major subsidy to get buy in.
Major challenge in engaging with policy makers:

• How to obtain long-term commitment to under-provisioned public goods that will reduce price volatility but are not considered “demonstrative” enough
• Not sexy ≠ not effective
Important entry points

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<td>• Accurate and timely crop forecasts,</td>
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<td>• marketing training for farmers</td>
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<td></td>
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<td>• Invest in infrastructure</td>
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<td>• Crop science, R&amp;D</td>
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What not to do

• **Ad hoc discretionary policies** (Model 3)
  • Large-scale government procurement and buffer stock policies continue to cause more food crises than they avert
  • Zambia lost nearly 2% of its GDP in 2010, 2011, and 2012 on its maize operations

• **Stabilizing well could be good economics**

• **But stabilizing badly is neither good economics nor good politics**
A stylized fact is often a broad generalization that summarizes some complicated statistical relationship, which although essentially true, may have inaccuracies in the detail.