Market Reform, Marketing Margins and Food Prices in Eastern and Southern Africa: Emerging Issues and Challenges

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What is the problem?

- Stagnant agricultural productivity growth
- More frequent food crises – and soaring world food prices
- Realization that these problems are partially due to poorly functioning markets

What can African policy makers do to develop food markets to encourage uptake of GR inputs, catalyze farm productivity growth, and protect poor consumers?
Current thinking on “strategy”

- Growing advocacy for a “big push” strategy
  - e.g., Sachs, AGRA
  - World Bank “liberalization” policies on trial
- Major debate about the right “enabling environment”
  - Search for new market institutions
  - What is the role for marketing boards, price controls, trade controls?

Current thinking on “strategy”

- …can be guided by evidence on impacts of food market liberalization
Objectives

1. To determine the effects of food market reform on food price levels and marketing margins
2. To consider:
   - how higher world food prices will affect food prices under liberalized food markets
   - supply response: who will be able to respond?
   - why only a small % of farmers will benefit, at least in short run

I. Gradual transition to structural grain deficit
I. Gradual transition to structural grain deficit

**Eastern Africa: Net Exports**

Linear trend: -9.80

Source: FAOSTAT 2006

**Southern Africa: Net Exports**

Trend: 1960-1981 = -85.5

Trend: 1982-2005 = 94.6

Source: FAOSTAT 2006
Why is maize production stagnating in the region?

1. Withdrawal of marketing board maize support prices and fertilizer subsidies
2. Cultivated area shifted from maize to other crops: cassava, cotton, groundnut, horticulture

Zambia annual growth rates, 1992/3-2003/04

![Graph showing annual growth rates for various crops in Zambia](image)
Role of maize in small farm incomes is declining (share of gross sales revenue)

<table>
<thead>
<tr>
<th>Country</th>
<th>Maize</th>
<th>Other grains/beans/oilseeds</th>
<th>Non-food cash crops</th>
<th>Fruits - veges</th>
<th>Animal products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>13.3</td>
<td>7.9</td>
<td>34.0</td>
<td>17.7</td>
<td>26.7</td>
</tr>
<tr>
<td>Malawi</td>
<td>21.0</td>
<td>9.8</td>
<td>36.9</td>
<td>26.3</td>
<td>na</td>
</tr>
<tr>
<td>Mozam</td>
<td>13.8</td>
<td>9.3</td>
<td>16.9</td>
<td>30.4</td>
<td>23.4</td>
</tr>
<tr>
<td>Zambia</td>
<td>28.2</td>
<td>7.7</td>
<td>16.7</td>
<td>27.5</td>
<td>14.7</td>
</tr>
</tbody>
</table>

Source: Jayne, Mather, Mghenyi, 2006

Why is maize production in the region stagnating?

1. Withdrawal of marketing board maize support prices and fertilizer subsidies
2. Shifted area from maize to cassava, cotton, groundnut, horticulture
3. Declining farm size
   - A strategy of growing maize commercially is generally not viable for farms < 2 hectares
Farm size distribution: Small farm sector

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3. Declining farm size
   - A strategy of growing maize commercially is generally not viable for farms < 2 hectares
4. Urbanization → preferences shifting to convenience foods (bread, rice)

Source: Jayne, Mather, Mghenyi, 2006
Nairobi Staple Food Expenditure Patterns

Figure 7: Expenditure on Primary Staples (KSh per a.e/month)

Source: Muyanga et al., 2005

- More than 50% of Africa’s population will be urban by 2015.
  - 2000: 10 farm households feed 7 non-farm households
  - 2020: 10 farm households feed 16 non-farm households
Declining per capita maize production ≠ region is losing its ability to feed itself

• May be moving toward comparative advantage
  – Grain self-sufficiency → grain self-reliance
• Shifts to other domestic food crops that provide much greater calories/unit of land
• What really matters are trends in farm income growth → market performance plays a crucial role

Evidence on effects of reform on marketing margins and food prices:
Linear trend (meal): -0.655***
Linear trend (grain): 0.235**

Wholesale maize grain
Retail maize meal
Linear-trend-grain
Linear-trend-meal

*** 1% ** 5% level of significance

Source: Agricultural Marketing Information Centre-Zambia-various years
Summary of impacts of food market reform:

1. Retail food prices have fallen
2. Wholesale food prices have risen or stayed constant
3. Food marketing costs have declined

Reasons:
- Reform broke up oligopolistic grain milling and retailing sector
- Massive investment in small-scale milling
Summary of impacts of food market reform (cont.)

4. Reduced incentives to produce grain for sale in remote areas as marketing board price supports were scaled back
5. Shifted cultivated area from grain to other crops
6. Grain production growth trends stagnant, but overall agricultural growth generally rising

<table>
<thead>
<tr>
<th></th>
<th>period</th>
<th>Ag. Growth rate (FAO)</th>
<th>AgGDP (WB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malawi</td>
<td>1990-2006</td>
<td>+3.26</td>
<td>+5.70</td>
</tr>
<tr>
<td>Mozambique</td>
<td>1990-2006</td>
<td>+4.76</td>
<td>+5.21</td>
</tr>
<tr>
<td>Kenya</td>
<td>1990-2006</td>
<td>+2.15</td>
<td>+2.69</td>
</tr>
<tr>
<td>Zambia</td>
<td>1990-2006</td>
<td>+1.41</td>
<td>+2.82</td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>1990-2006</td>
<td>+2.98</td>
<td>+3.43</td>
</tr>
</tbody>
</table>
Figure 1. Inflation-adjusted maize and maize meal prices, South Africa, May 1975 to December 2004

Maize Meal Retail Prices: Actual vs. No Reform Simulation
Result Summary: Welfare Effects

1. Rising Milling/Retailing Margins
   - Conditional mean increased by between 16% - 40% depending on model specification

2. Transfer of Consumer Surplus
   - Market reform has raised maize meal prices at least 13% higher than under simulated control price regime → $179 million/year from consumers to marketing agents

Findings are robust to alternative model specification and estimation method

Conclusion

• Need to address the “why”?
  – In other countries in the region, liberalization removed the barriers to investment in alternative milling channels, but not in South Africa – why?

• Ndibongo Traub brown bag - Thursday
II. Current World Food Price Dilemma

- Structural food deficits in Africa → raising price surface toward import parity
- Higher world food prices appear likely
- Major concerns over impact on consumers
- Will small farmers be able to respond to these price incentives?

World food and fertilizer price trends

- DAP fertilizer, fob US gulf
- Maize, fob US gulf
- Urea, fob Eastern Europe
- Wheat, fob US gulf
Emerging land pressures are generating fundamental challenges for broad-based income growth from staple grain sales.

Farm size distribution:
Small farm sector

Source: Jayne, Mather, Mghenyi, 2006
Predictions (hypotheses):

- Large farm sector is likely to respond by raising grain area and input use on maize
- Limited production response by small-scale farms (most of whom < 2 hectares)
- Cassava production will grow rapidly:
  - high calorie/hectare ratio
  - drought tolerance
- Up till recently, policy in US, India and other countries has sought to limit grain output → great potential for ramped up world production in 2-3 years

Under-investment in public goods

1. Stock of physical infrastructure progressively being run-down
2. Market development requires adequate public goods investments:
   - Road, rail, port infrastructure
   - R&D, extension
   - Market institutions, grades & standards, etc.
3. ….Tired old messages – but critically important
Budget allocation to Agricultural Sector in Zambia: ZMK465 million in 2005

- Personnel Emoluments: 20%
- Operational funds: 11%
- Irrigation Development: 3%
- Infrastructure: 2%
- Food Security Pack & EDRP: 12%
- Food Reserve Agency: 15%
- Maize Marketing: 15%
- Fertilizer Support Program: 37%

Source: Govereh et al, 2006

Political economy of public resource allocation

Donor budget support

Government budget

- Long-term productive investments: R&D, infrastructure, education, etc.
- High social payoffs
  - But payoffs come 5-20 later
  - Critical for sustained poverty reduction

- Fertilizer subsidies,
- Marketing board price supports,
- Land bills, food aid

- Immediate political payoffs;
- Visible support to constituencies
- Contribution to sustained growth / poverty reduction is unclear
Well-functioning markets can encourage smallholder agricultural growth and food security

Evidence that market reform has brought tangible benefits for welfare of both producers and – primarily – consumers

Still much more can be done (public goods investments, market institutions) that can support further market development

Implications for Food Marketing Policy:

- But should we be expect that there is some staple food marketing/trade strategy that can catalyze agricultural growth.....without also making progress on:
  - Public investment in physical infrastructure?
  - Technology – crop science?
  - Governance?
  - Basic education
  - Addressing acute land constraints?
  - Improved farmer management practices?
  - HIV/AIDS?
Implications for Food Marketing Policy:

- Food market development is critical, but alone it can never be a silver bullet.
- It would be a grave mistake to dismiss the benefits that food market reform have brought over the past 15 years, even though reform alone has not been able to appreciably raise farm productivity or living standards.

thank you
### Zambia

<table>
<thead>
<tr>
<th>Fertilizer source:</th>
<th>Total Income</th>
<th>Assets</th>
<th>Landholding size</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>‘000 kwacha per capita</td>
<td>ha per capita</td>
<td></td>
</tr>
<tr>
<td>Households not acquiring fertilizer:</td>
<td>266</td>
<td>173</td>
<td>.15</td>
</tr>
<tr>
<td>Cash purchases from private retailers:</td>
<td>774</td>
<td>342</td>
<td>.20</td>
</tr>
<tr>
<td>Government Fertilizer Support Program (50% subsidy)</td>
<td>804</td>
<td>425</td>
<td>.23</td>
</tr>
</tbody>
</table>

Source: Govereh et al, 2006

### Characteristics of smallholder farmers, Zambia 2002/03

<table>
<thead>
<tr>
<th>N=</th>
<th>Farm size (ha)</th>
<th>Asset values (US$)</th>
<th>Gr. Rev., maize sales (US$)</th>
<th>Gr. Rev., crop sales (US$)</th>
<th>Total hh income (US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Top 50% of maize sales</td>
<td>23,680</td>
<td>6.0</td>
<td>1,558</td>
<td>690</td>
<td>823</td>
</tr>
<tr>
<td>Rest of maize sellers</td>
<td>234,988</td>
<td>3.9</td>
<td>541</td>
<td>74</td>
<td>135</td>
</tr>
<tr>
<td>Households not selling maize</td>
<td>762,566</td>
<td>2.8</td>
<td>373</td>
<td>0</td>
<td>36</td>
</tr>
</tbody>
</table>

Source: Jayne, Mather, Mghenyi, 2006
1. In much of E/S Africa, “market liberalization” is an inaccurate characterization of the environment
   - marketing boards continue to pay major role in food and input markets
   - 25-70% of marketed maize in Zambia, Kenya, Malawi, Zimbabwe
IV. Tendencies for Overgeneralization about Policy Impacts

1. An important role of research is to identify what works, what doesn’t, and why
2. This requires distinguishing between policy pronouncements and implementation
   - Market reform not “monolithic” in either design or implementation (e.g., Moz, South Africa, Kenya)
3. Implementation of reforms – highly heterogeneous
4. Need to resist overgeneralizations
5. Failure to adequate account for differences in implementation results in mis-identification of policy impacts

Sources of Policy Unpredictability

• Export bans, import quotas (year to year & within year)
• Uncertainty over changes in import tariff rates
• When and where will marketing boards enter the market
  – current example: Zambia 2006
• Prices at which the MBs buy and sell unpredictable
• All of these sources of unpredictability impede private traders’ servicing small farmers’ needs