

Food price transmission

Evidence from Africa in 2008

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**Food and Agriculture
Organization of the
United Nations**

for a world without hunger

FAO Food Price Index

FAO Food Price Index

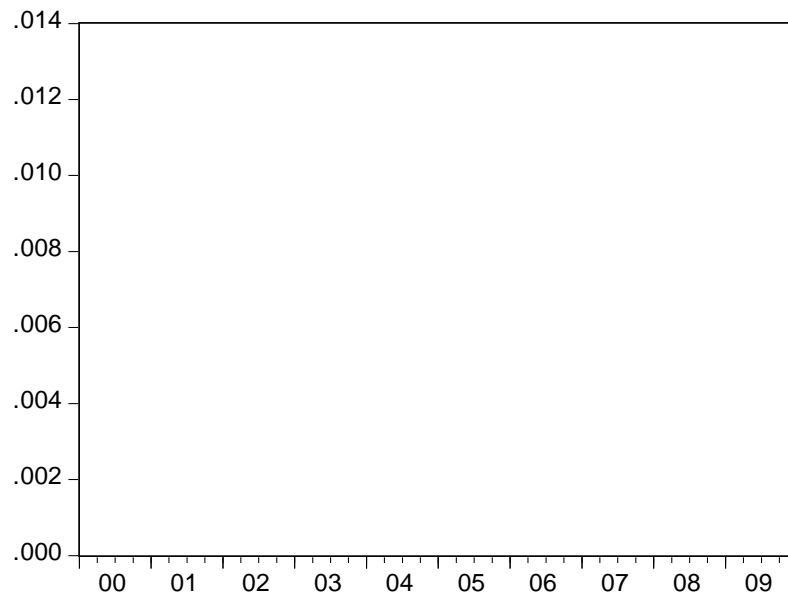
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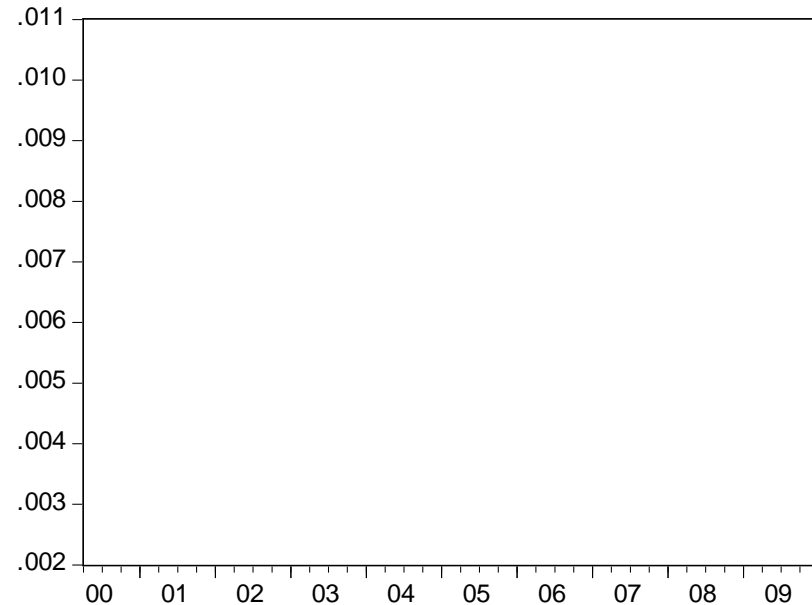
* The real price index is the nominal price index deflated by the World Bank Manufactures Unit Value Index (MUV)

Volatility – Conditional variance

Wheat price



Maize price



Transmission: Definitions

- Complete: prices in two markets differ only by the cost of transport and marketing
 - domestic price = world price + marketing margin


- Extreme cases:
 - complete price transmission holds – Law of one Price
 - prices are completely independent

- Between these cases:
 - slow, incomplete or asymmetric



Transmission: Why incomplete?

- ❑ Policies – trade and direct intervention in the market
- ❑ Transaction (mainly transport) costs isolate markets
- ❑ Market structure – oligopsonistic/oligopolistic behaviour
- ❑ Consumer preferences




Transmission: Measurement

- Econometric models used do not provide an unambiguous measure of price transmission

- Important to distinguish between long and short run
 - prices do not react to shocks instantaneously – in short run effects may drift apart

- Adjustment takes time - Ethiopian coffee market takes 3.7 months to fully adjust



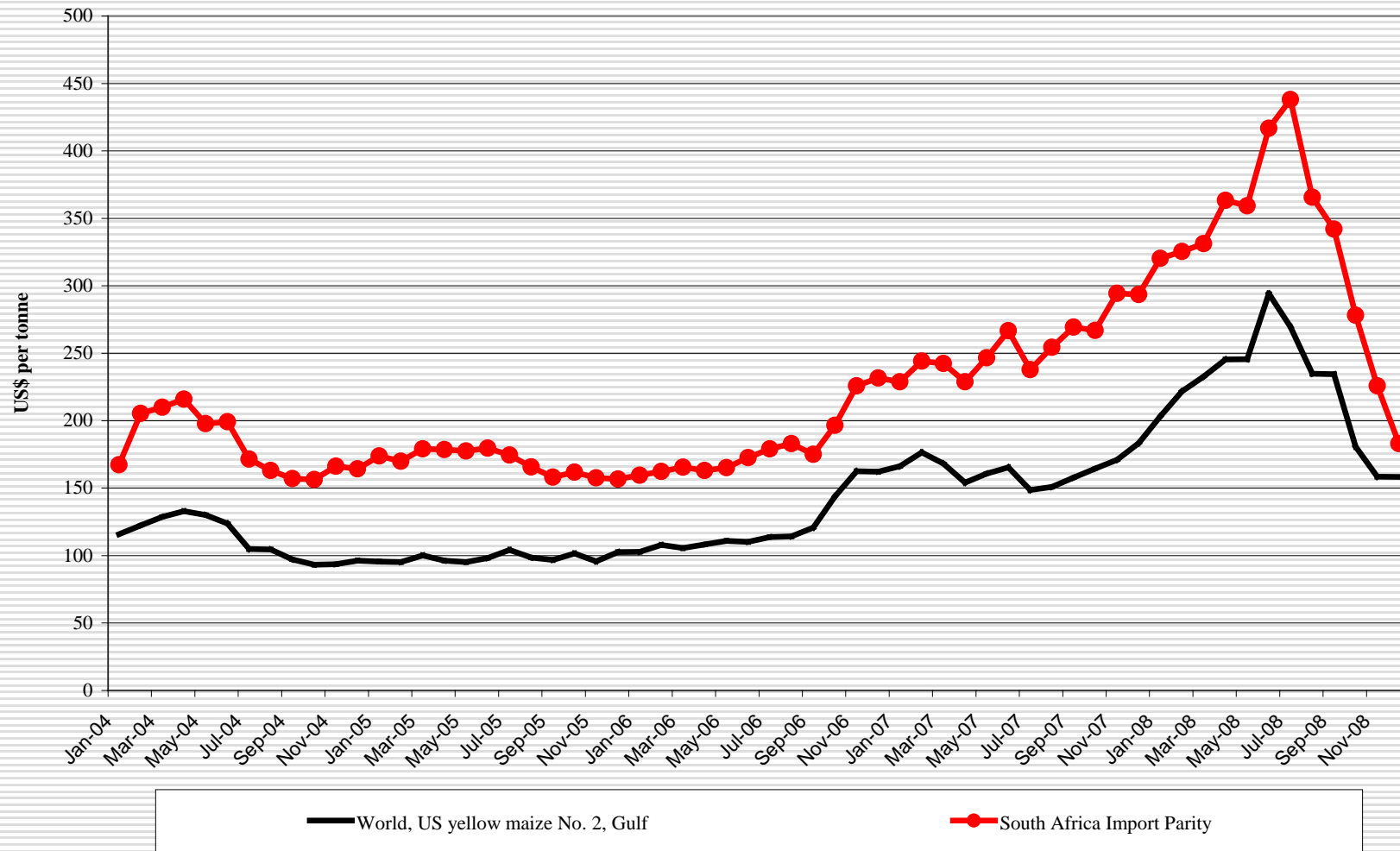
Transmission: Measurement

- Price level: Comovement on average - long run equilibrium
 - speed & time to full adjustment

- Volatility spillover
 - world price volatility is transmitted to country level

- Causality

Yellow and white maize



South Africa (level): Yellow and white maize

| | SAFEX yellow maize price P^{SA}_Y | SAFEX white maize price P^{SA}_W |
|--|---|--|
| Evidence for co-movement with: | | |
| P^W , world price | strong | strong |
| P^{SA}_Y , SAFEX yellow maize | - | strong |
| Causality | $P^W \rightarrow P^{SA}_Y$ | $P^W \rightarrow P^{SA}_W$ |
| Months to full adjustment to P^W | 7.8 | 7.2 |

Kenya (level): Maize

| | Nairobi | Mombasa | Eldoret | Kisumu |
|---|---------------------|---------------------|-------------------------------|-------------------------------|
| Evidence for co-movement with: | | | | |
| P^w , world price | strong | strong | strong | strong |
| P^w_{SA} , South African price | moderate | moderate | strong | strong |
| Causality | $P^w \rightarrow P$ | $P^w \rightarrow P$ | $P^w, P^w_{SA} \rightarrow P$ | $P^w, P^w_{SA} \rightarrow P$ |
| Months to full adjustment to P^w | 6.2 | 9.1 | 9.1 | 6.2 |
| Months to full adjustment to P^w_{SA} | - | - | 11.1 | 7.7 |

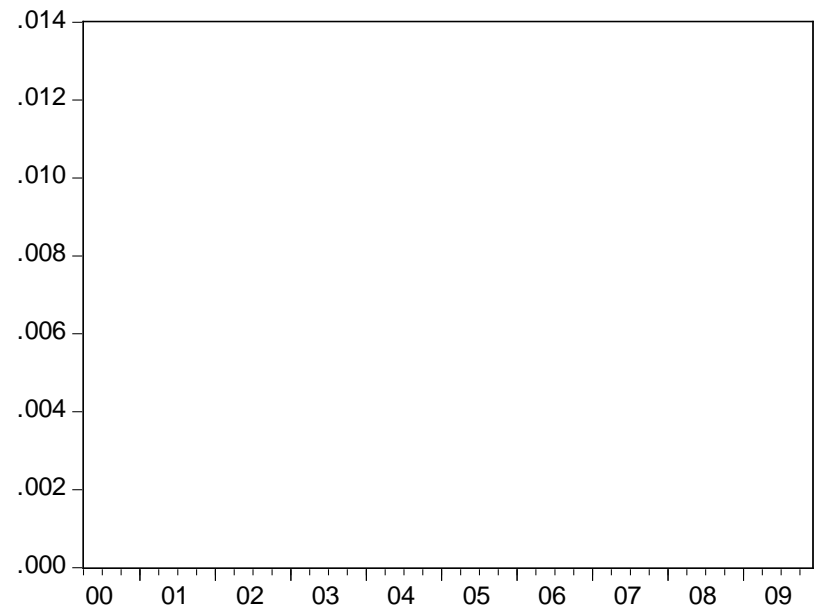
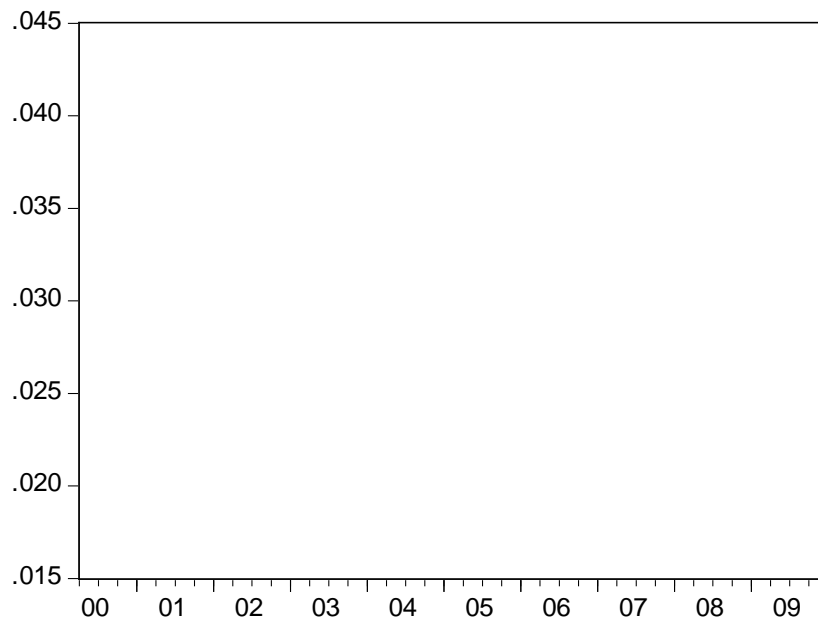
Zambia (level): Maize

| | Lusaka | Chipata | Kabwe | Kasama | Ndola |
|---|--------------------------|---------|--------------------------|-------------------------------|-------------------------------|
| Evidence for co-movement with: | | | | | |
| P^w , world price | moderate | weak | strong | strong | strong |
| P_w^{SA} , South African price (white maize) | strong | strong | strong | strong | strong |
| Causality | $P_w^{SA} \rightarrow P$ | - | $P_w^{SA} \rightarrow P$ | $P^w, P_w^{SA} \rightarrow P$ | $P^w, P_w^{SA} \rightarrow P$ |
| Months to full adjustment to P^w | - | - | 4.8 | 5.5 | 3.2 |
| Months to full adjustment to P_w^{SA} | 7.6 | 8.3 | 5.3 | 7.7 | 3.1 |

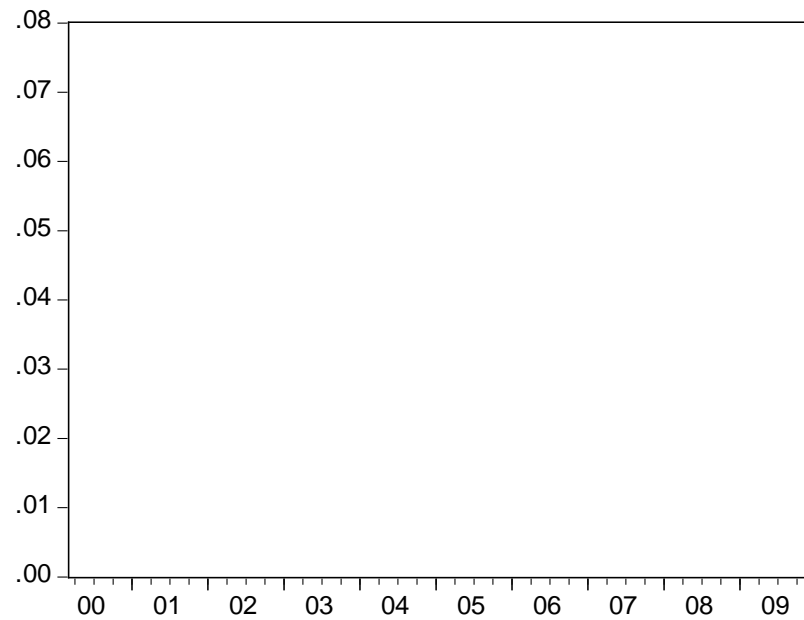
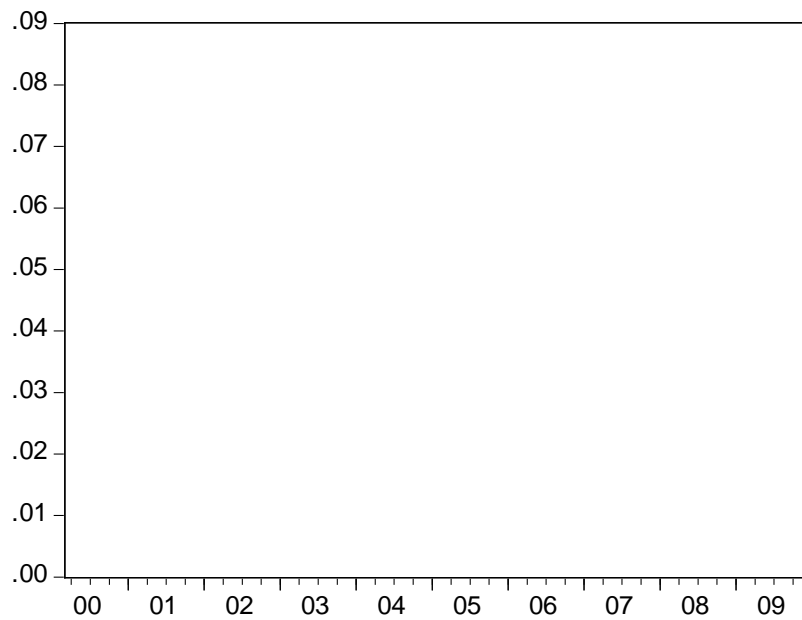
Malawi (level): Maize

| | Chipita | Karonga | Liwonde | Bangula |
|--|-------------------------------|-------------------------------|-------------------------------|-------------------------------|
| Co-movement with | | | | |
| P^w , world price | strong | strong | strong | strong |
| P_w^{SA} , South African price | strong | strong | strong | strong |
| Causality | $P^w, P_w^{SA} \rightarrow P$ | $P^w, P_w^{SA} \rightarrow P$ | $P^w, P_w^{SA} \rightarrow P$ | $P^w, P_w^{SA} \rightarrow P$ |
| Months to full adjustment to P^w (P_w^{SA}) | 6.6 (5.0) | 4.7 (4.8) | 7.7 (6.4) | 3.8 (4.7) |

Malawi (variance): Maize



Niger (variance): Sorghum



Conclusions

- On average world price changes pass through into African markets – slow but yes
 - 2010 is different – good crops

- Prices surges and volatility is permanent feature of African food markets

- African regions become net food importers
 - structural adjustment (Zimbabwe – animal feed)
 - domestic shocks
 - world shocks

East & Southern Africa: Net trade

