

# Do Market Interventions Promote Food Price Stability? Evidence from Eastern and Southern Africa.



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Alliance for Commodity Trade in Eastern and Southern Africa conference**

**“Awakening the Sleeping Giant:  
Making Grain Markets Work for Smallholder Farmers and  
Consumers in Eastern and Southern Africa”**

Lusaka, Zambia, May 10, 2010



# What is the problem?

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- Eastern and Southern African (ESA) countries often try to control the flow of grain across borders
  - marketing boards continue to play major role in food and input markets. Share of nationally marketed maize:
    - 15-57% (Kenya), 3-32% (Malawi) and 11-80% (Zambia)
  - discretionary use of trade policy instruments
- Characterization of this situation as “liberalization” – a misnomer
- “Interventionist liberalization” more appropriate characterization of policy environment in many countries in region

# What is the problem?

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- The rationale for continued state operations in food markets and trade is
  - The perception that leaving the private sector to operate on its own may bring intolerable levels of price instability
- However, there are strategic interactions between private and public sector in markets – the behavior of one affects the other
  - If government actions in markets are discretionary and unpredictable, this may limit scope of private participation and trade
- Hence – impact of government trade and marketing policies on price instability is essentially an empirical question

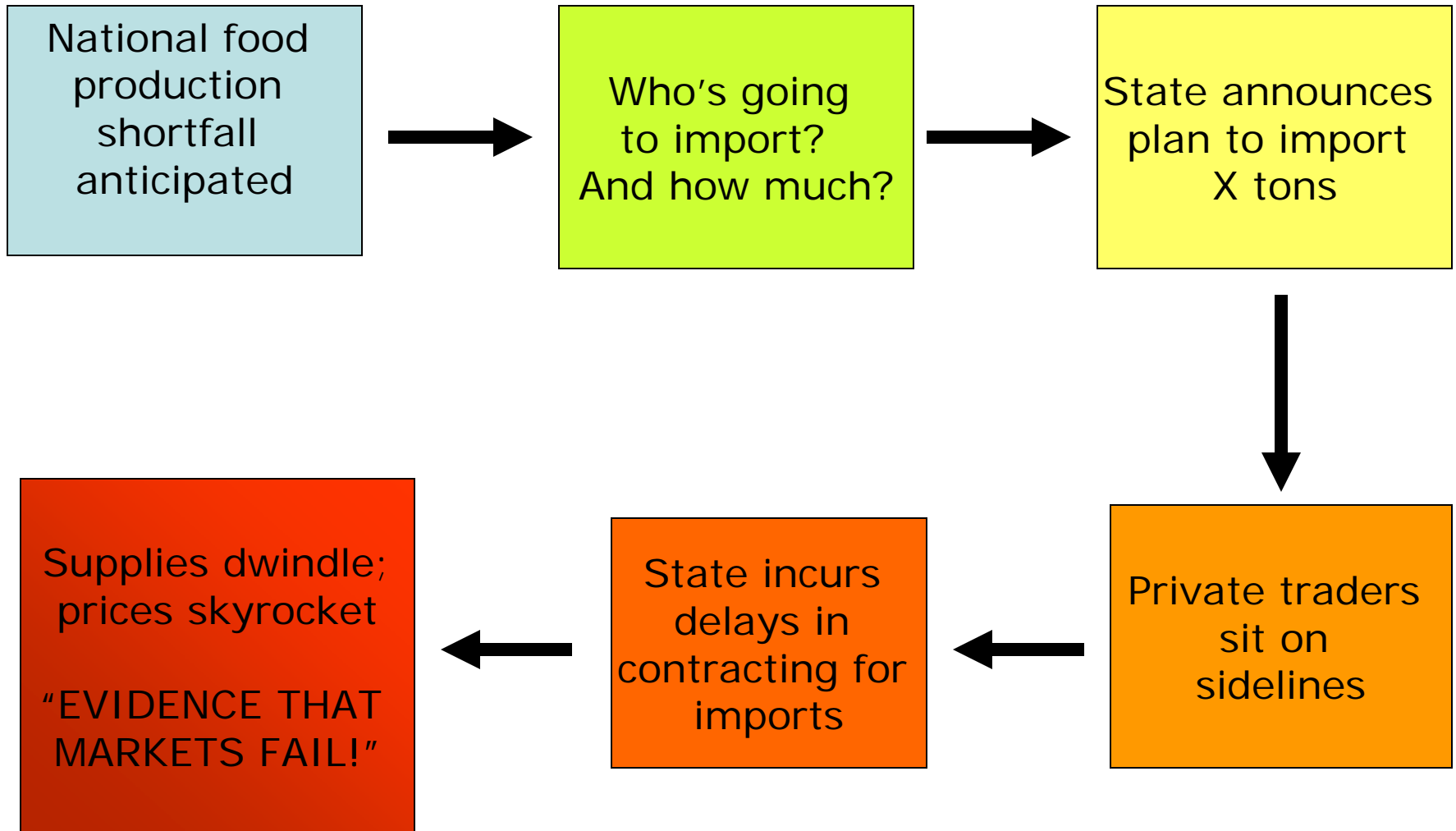
# Strategic interactions between public and private sector in food markets

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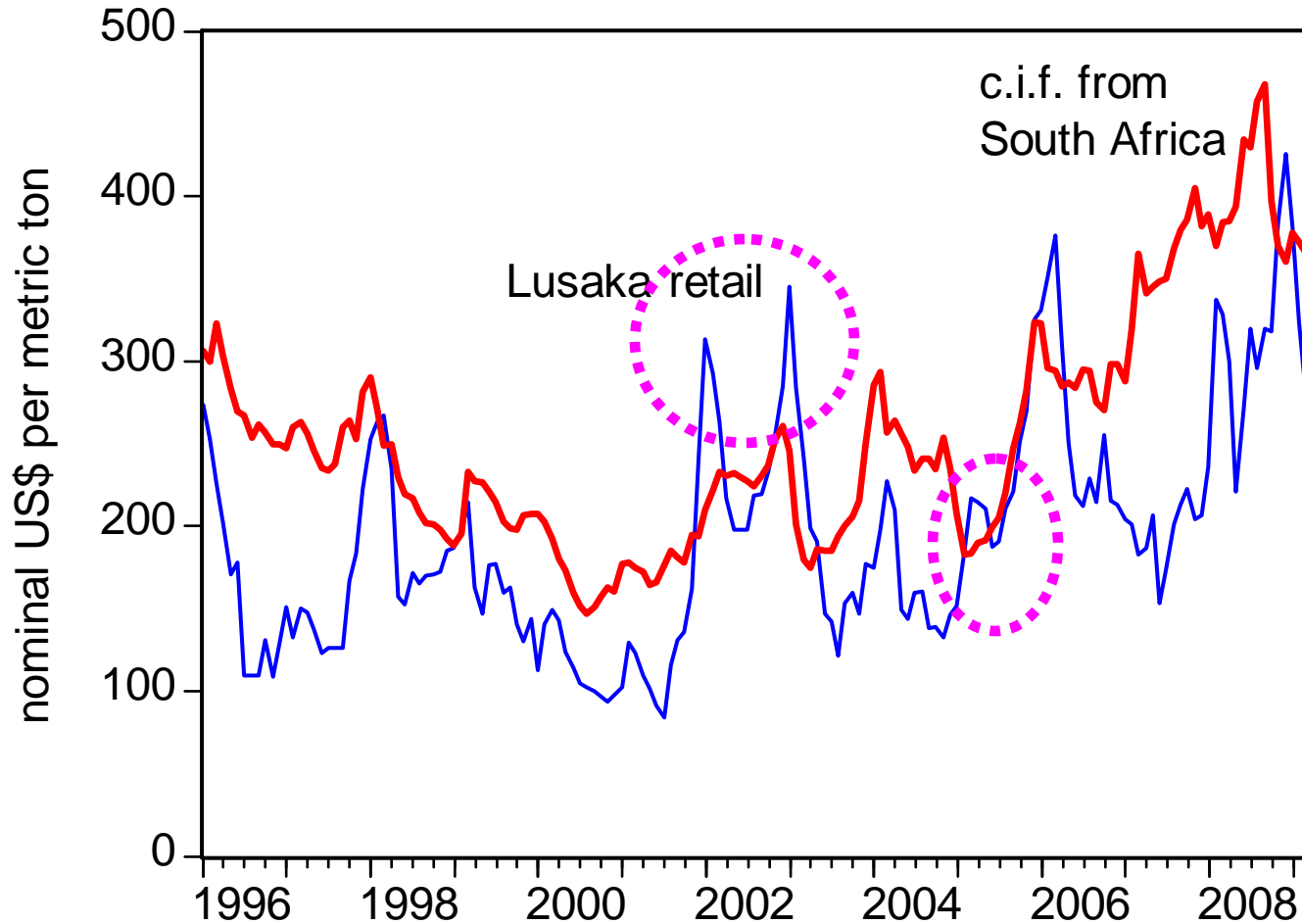
- 3 recurrent processes

# Process # 1

Examples: a) Zambia- 2001/02, 2002/03, b) Malawi: 2001/02, 2005/06

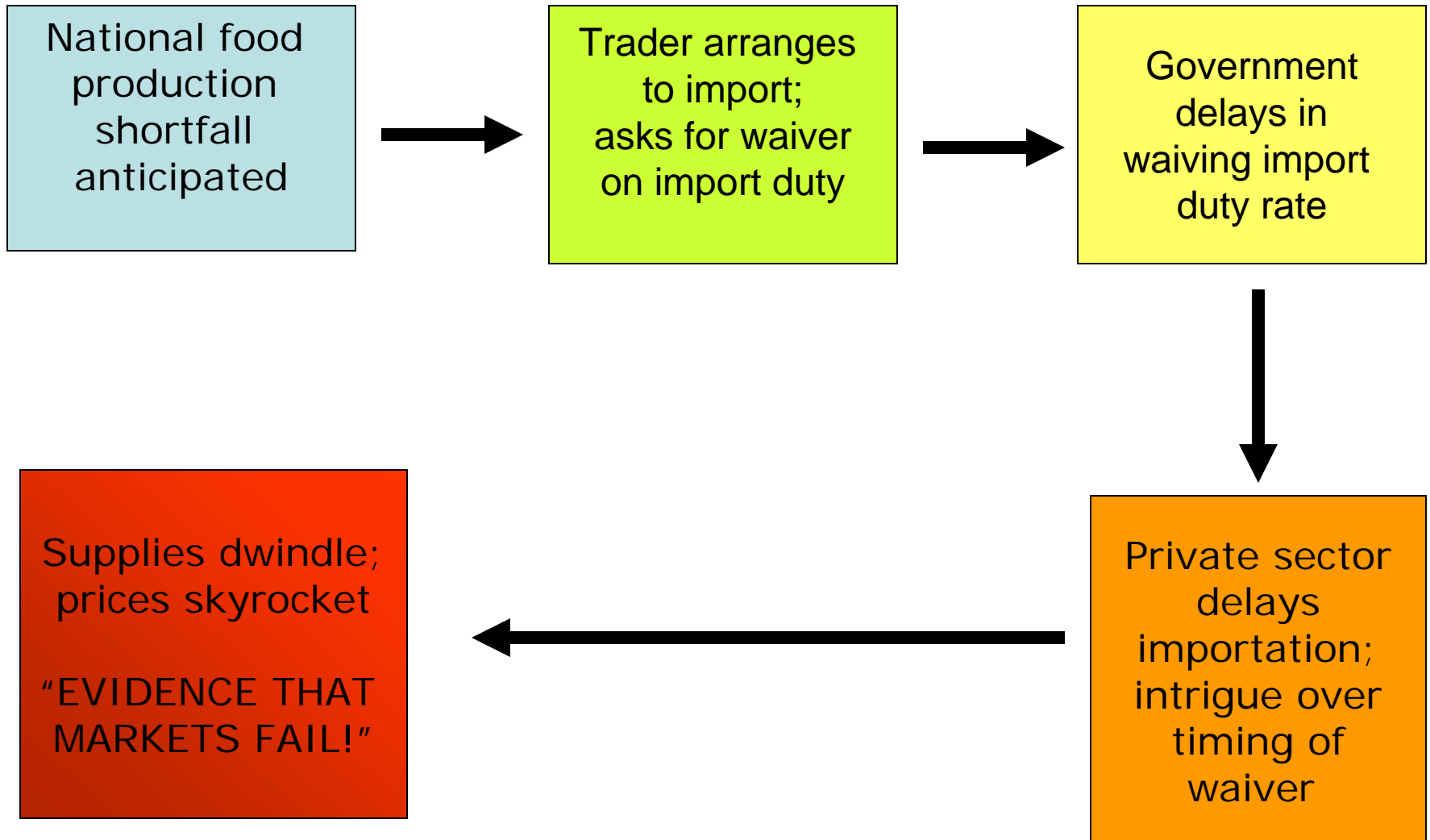


# Fig 1: Lusaka Maize Retail Prices

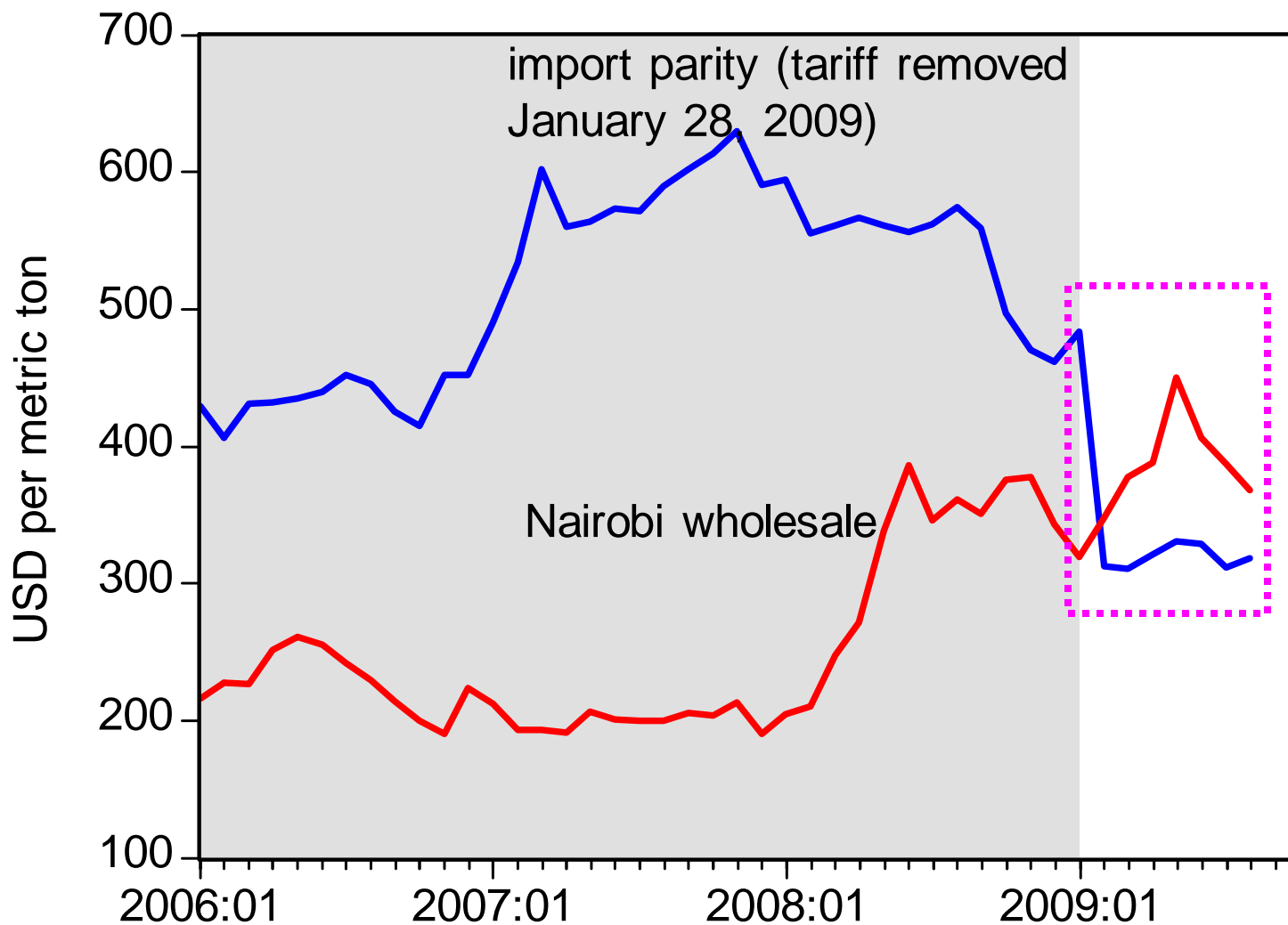


# Process # 2

Examples: a) Zambia: 2005/06 b) Kenya: 2003/04, 2008/09



# Fig 2: Maize prices vs. import parity, Nairobi, Kenya



# Process # 3

Examples: a) Malawi: 2008/09 b) Zambia: 2008/09

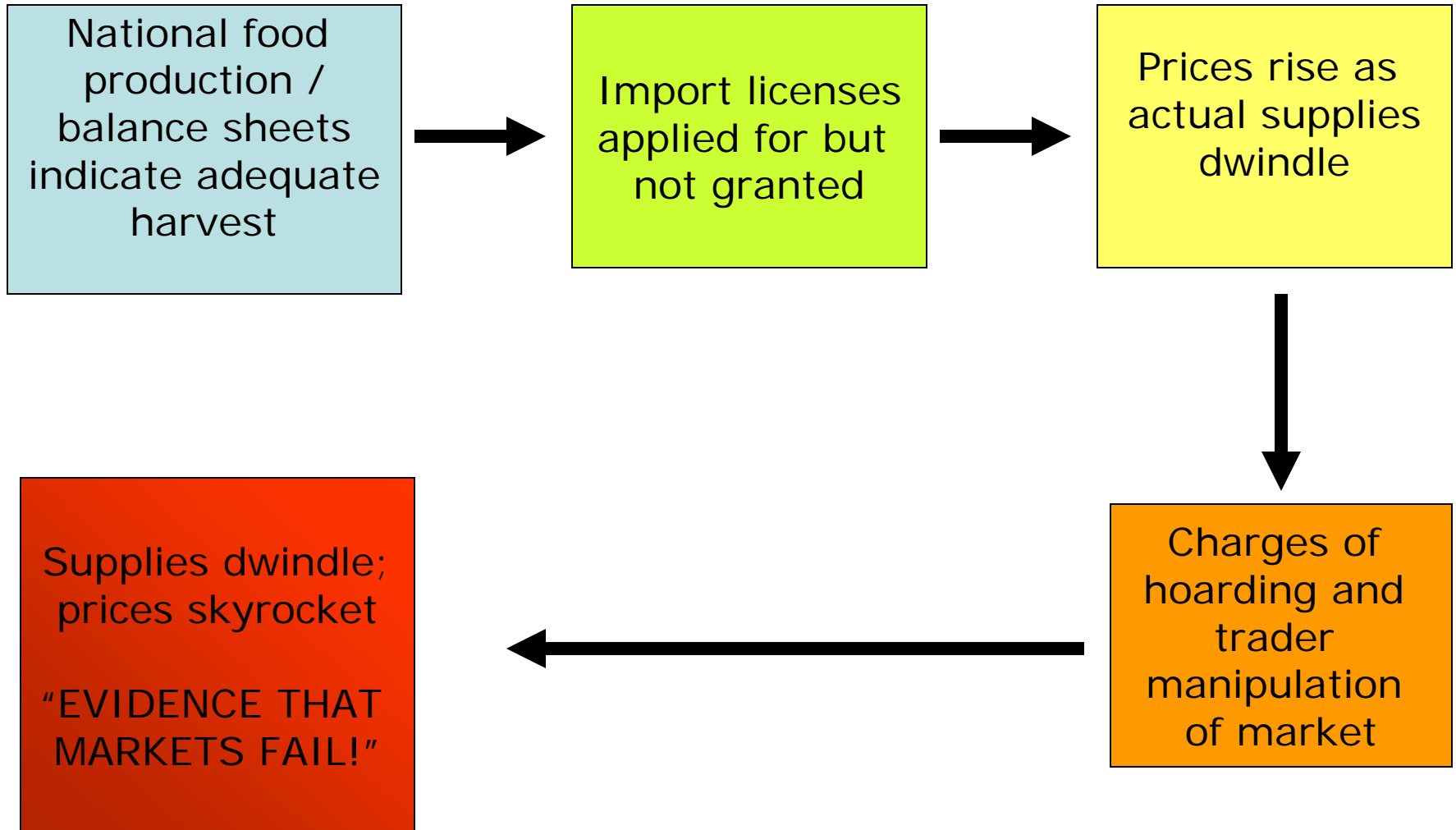
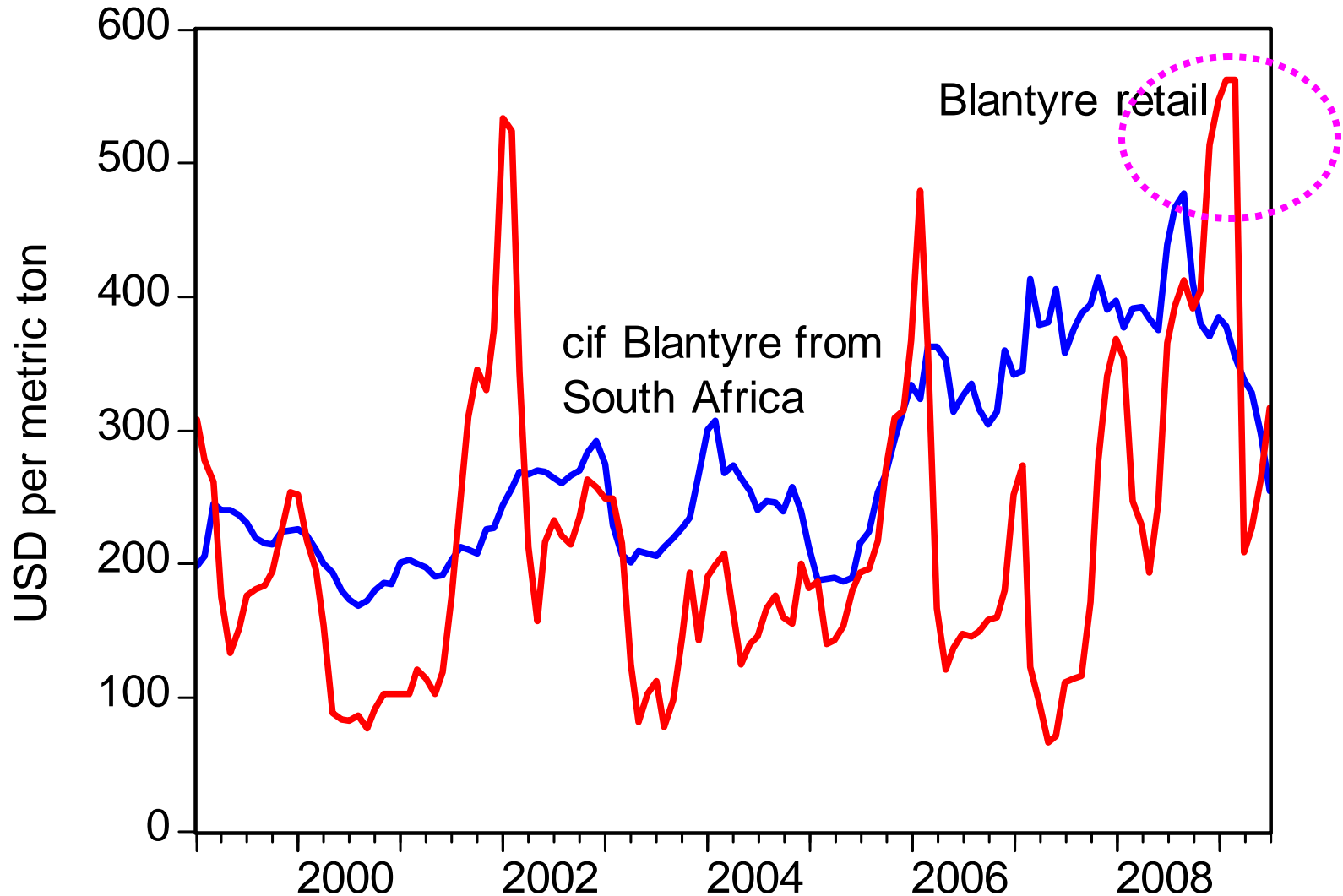


Fig 4: Maize prices vs. import parity,  
Blantyre, Malawi



## Common theme in all 3 processes:

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- Government efforts to manage upside food price risk through discretionary trade policy instruments *can/have* exacerbated food crises
- The inability of parties to make commitments that the other party regards as credible → precludes course of action that could improve outcomes for both

# Maize Price Instability in ESA

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## Empirical Question

- Are maize grain prices more stable and predictable in countries:
  - using trade barriers and marketing board and/or parastatals operations to stabilize grain prices
  - versus*
  - countries with open border policy and relying on trade to stabilize prices?

# Price Instability Vs. Unpredictability

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- *Price Volatility/Instability*- the unconditional variance in food prices over time, measured by the Coefficient of Variation
- *Price unpredictability*-the unanticipated component of price instability, i.e., the conditional variance from a price forecast model.
  - Eg. A measure of unpredictability for the price in month  $t+1$  could be represented by the forecast error between predicted and actual price.

$$P_{t+1} - E_t(P_{t+1}) = e_{t+1}$$

$e_{t+1}$ , the forecast error, is the measure of unpredictability

# Data

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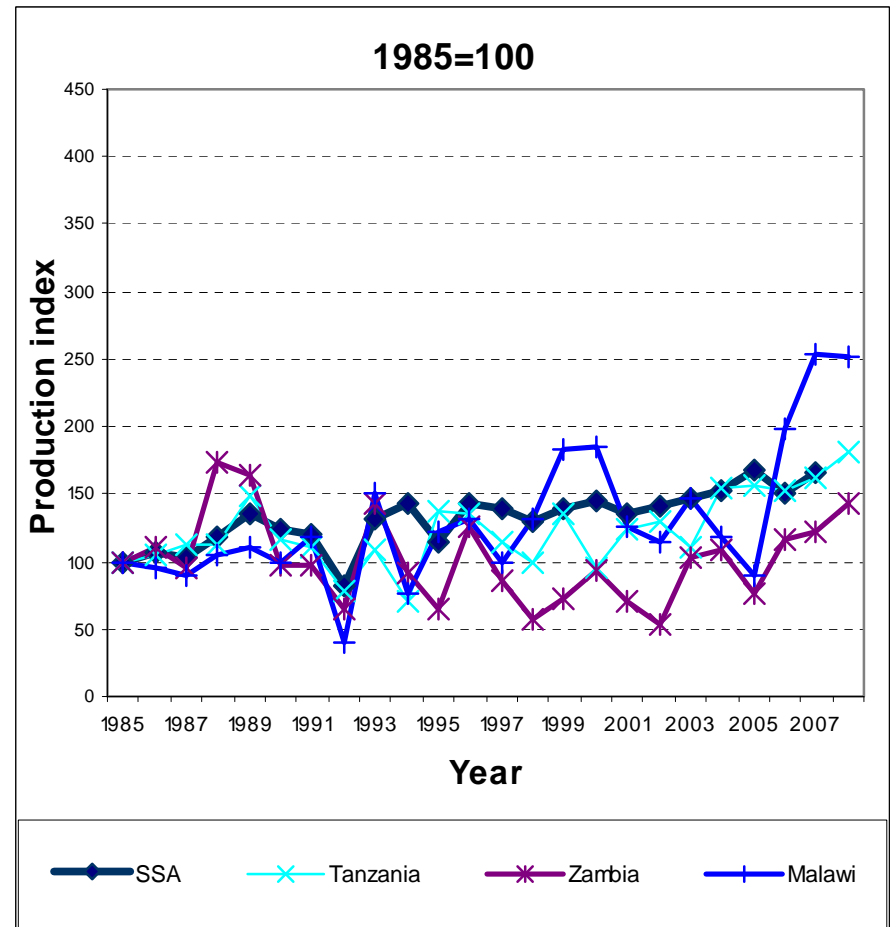
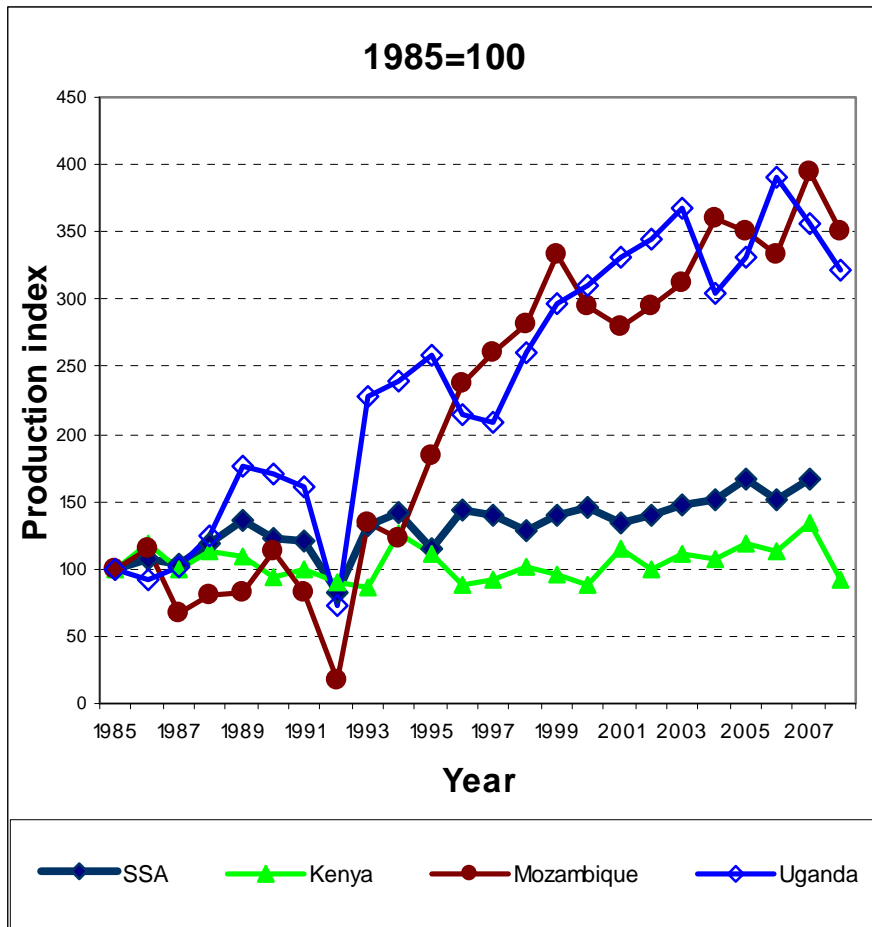
- Monthly retail/wholesale maize grain prices from 7 countries -January 1994 to December 2008
- Countries
  - Group A: Mozambique, Uganda, South Africa (open border policy)
  - Group B: Malawi, Zambia, Tanzania (heavy restriction of trade)
  - Borderline case: Kenya (initially restricting trade, progressively open border policy, especially since January 2005)

# Finding 1

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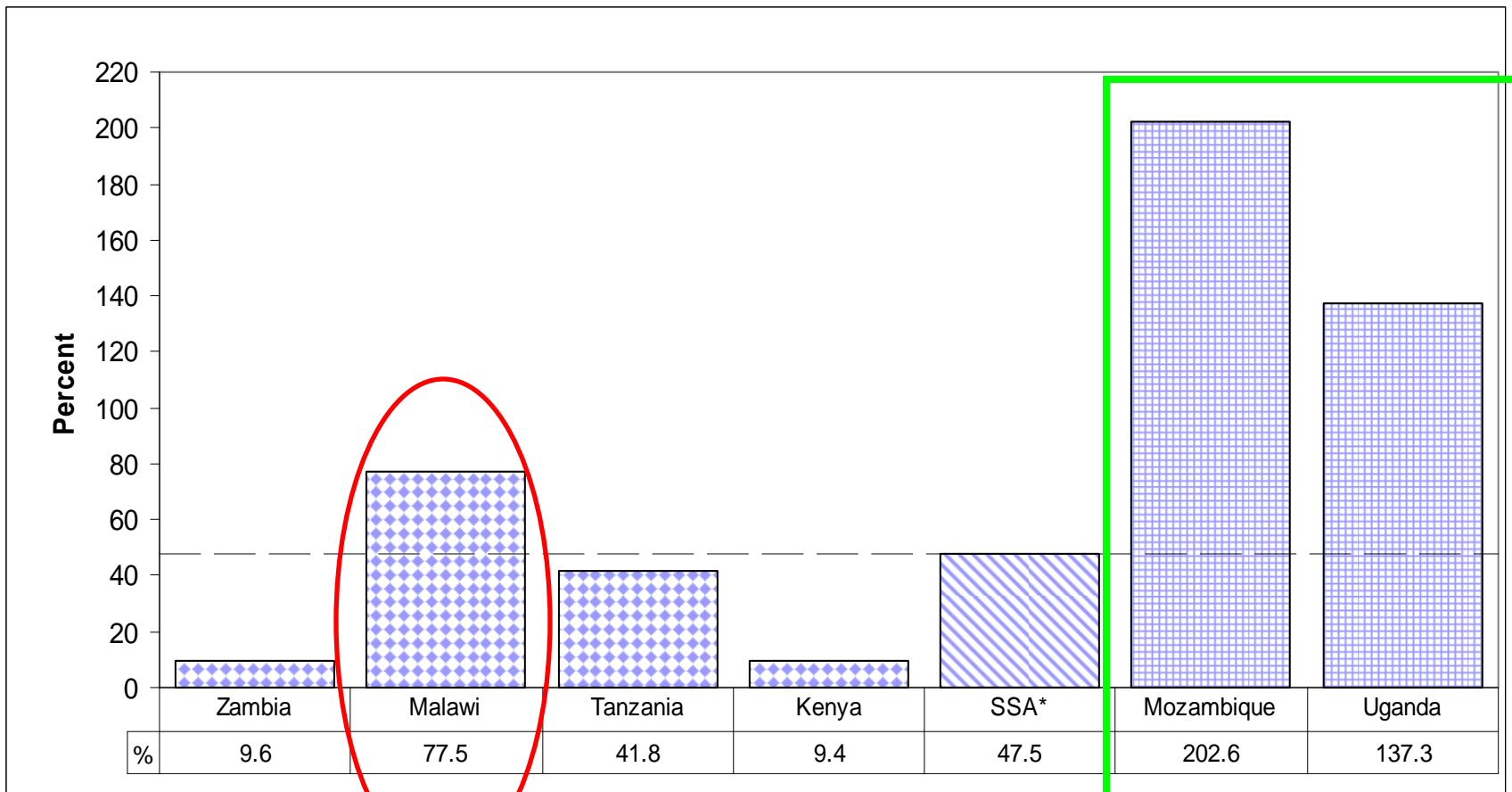
- With the exception of Malawi, countries pursuing food price stabilization policies and food security objectives through direct state operations over the past decade have failed to match production growth for SSA
- By contrast, Mozambique and Uganda, countries with relatively stable maize marketing and trade policies have experienced more than a 100% increase in maize production over the past two decades.

Figure 5. Maize Production Index for Sub-Saharan Africa, Zambia, Malawi, Tanzania, Kenya, Mozambique, and Uganda, 1985 to 2008



Source: Data from FAOStat

Figure 6. Overall Maize Production Growth, 1985 -2008



Source: Data from FAOStat

# Finding 2

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- To some extent, maize grain prices are generally more volatile and less predictable in countries that pursue food price stabilization policies through direct state operations and restrict grain trade via ad-hoc domestic and trade policies compared to those with relatively stable and open border policies
  - Malawi and Zambia have the highest degree of price volatility and uncertainty

Figure 7. Comparison of Unconditional Coefficient of Variation for Capital City Markets/major Consumption Centers

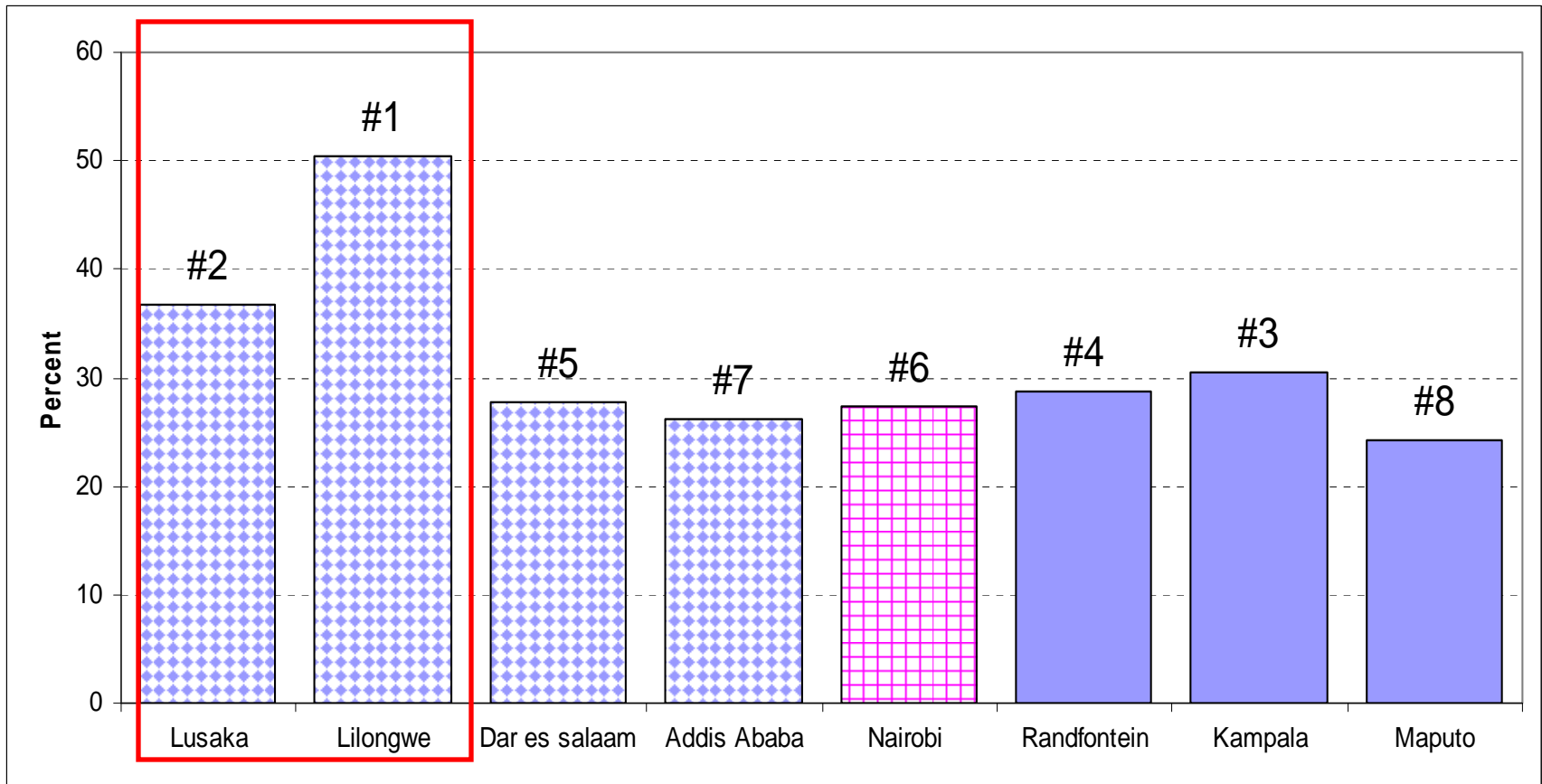
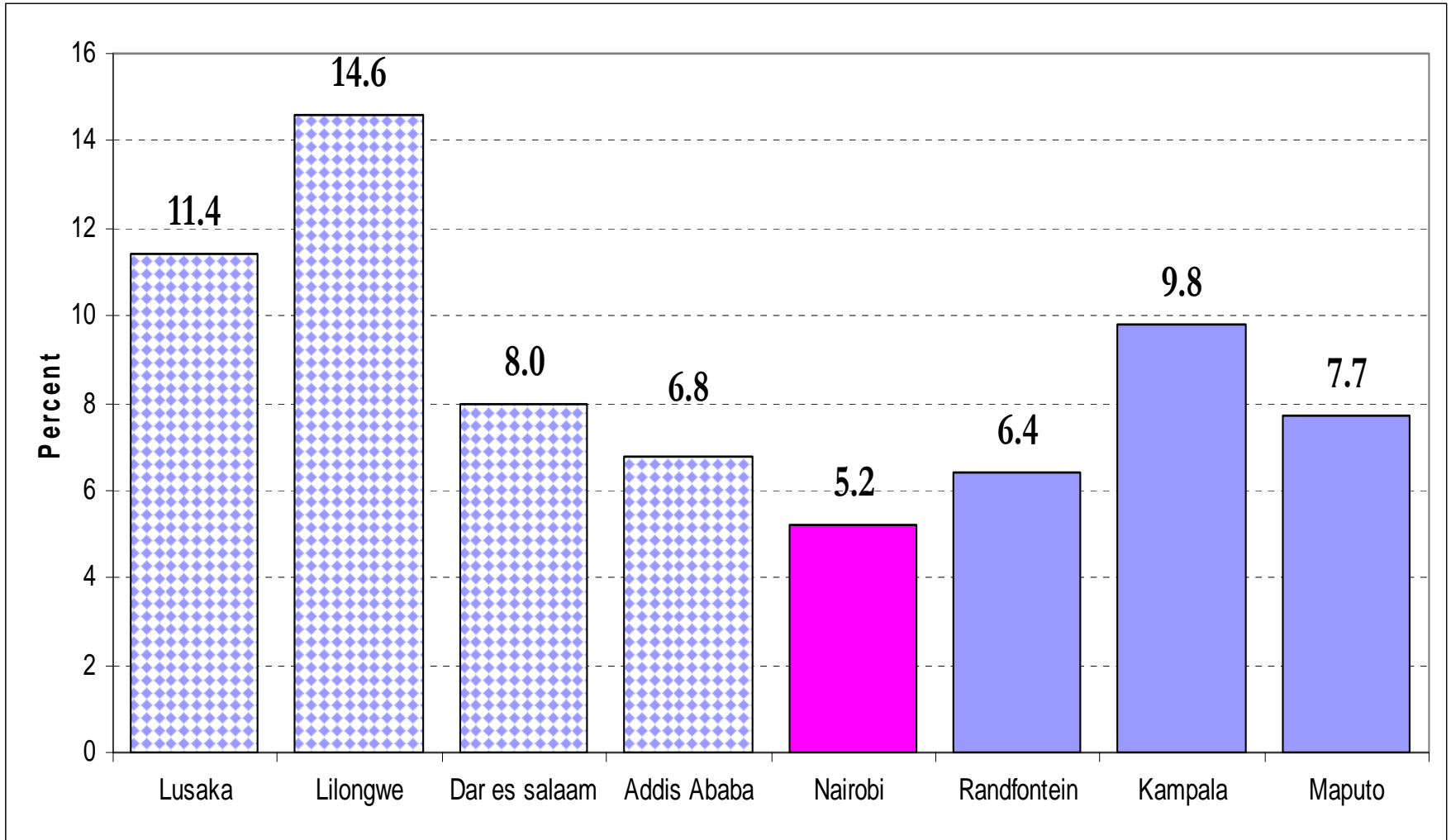
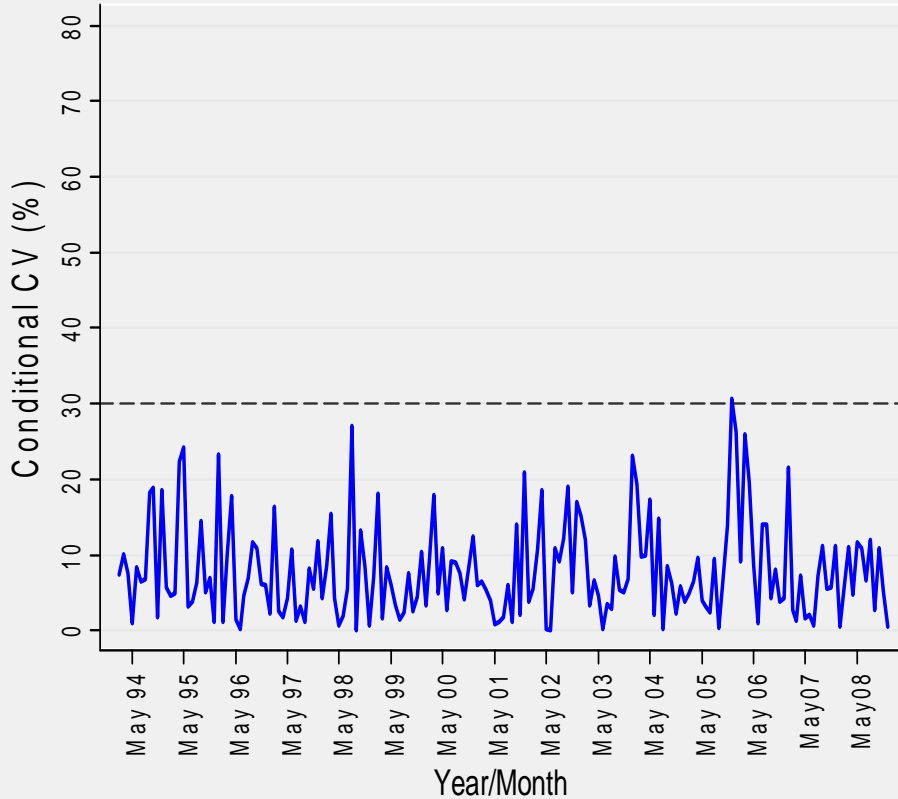


Fig 8: Maize Grain Prices Unpredictability

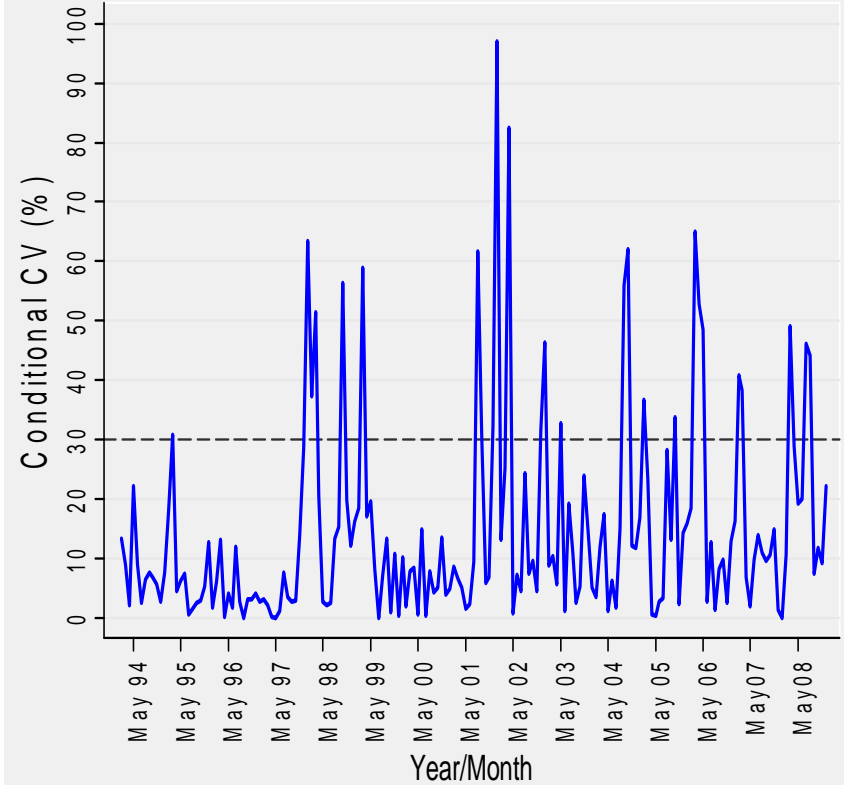


# Fig 9a. Maize Grain Prices Unpredictability

## Mozambique-Maputo

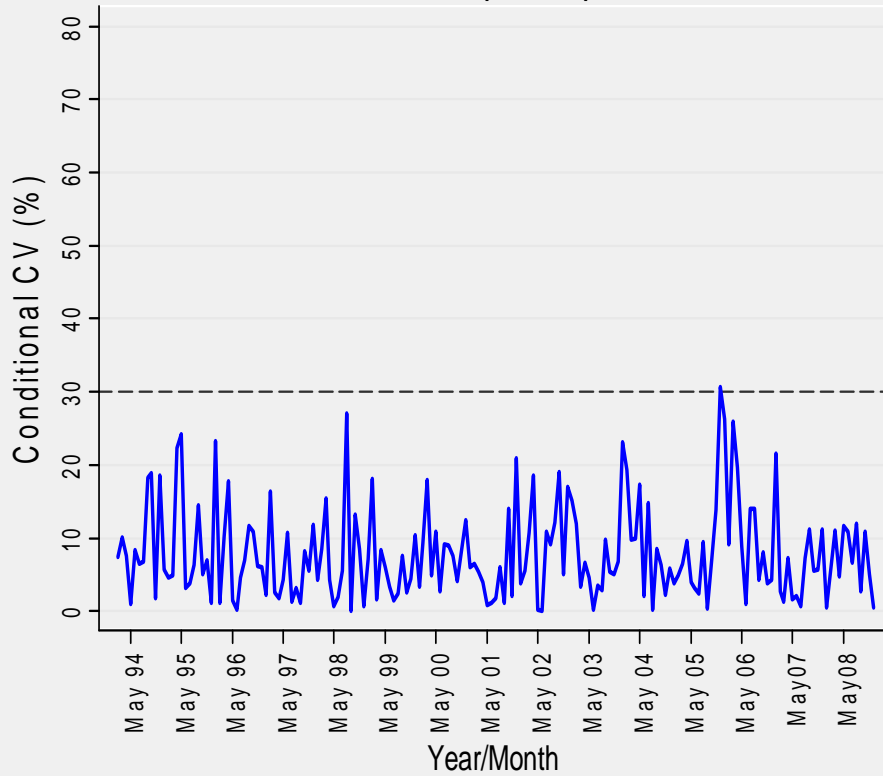


## Malawi-Lilongwe

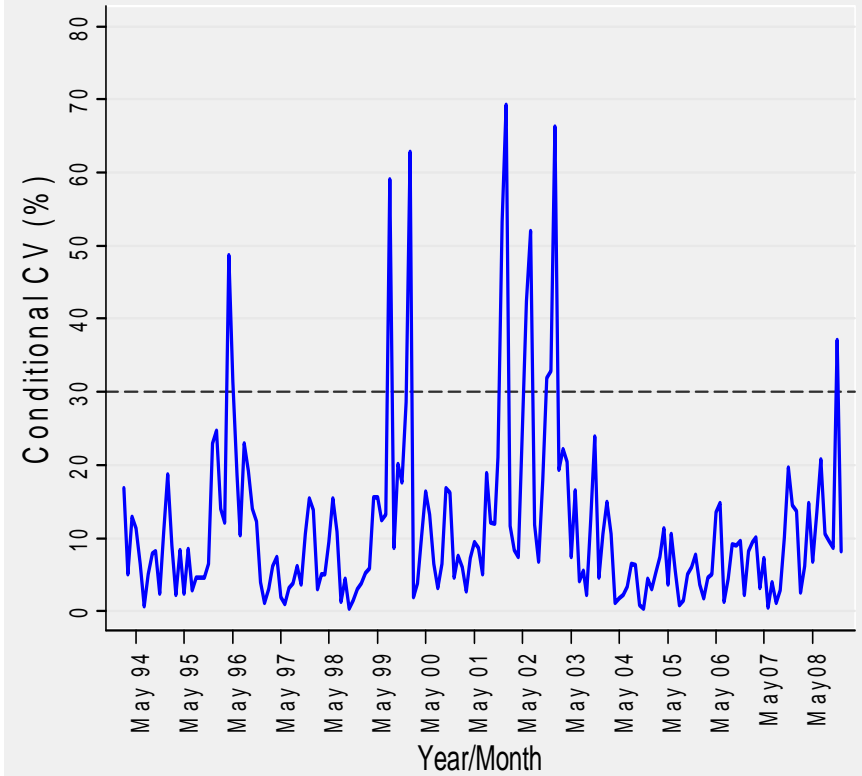


# Fig 9b. Maize Grain Prices Unpredictability

## Mozambique-Maputo

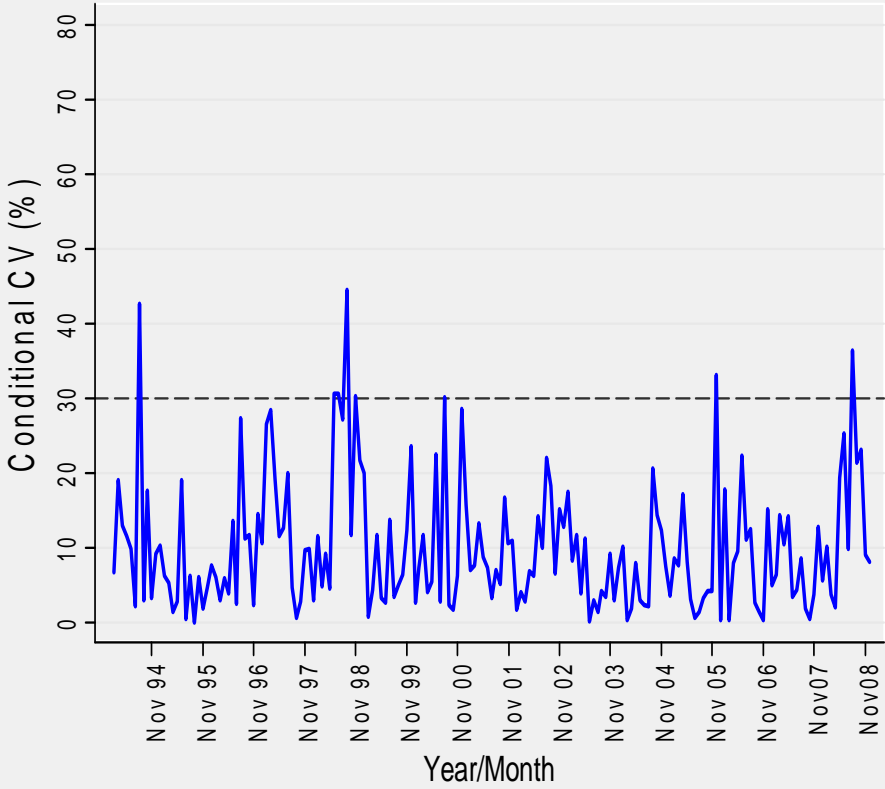


## Zambia-Lusaka

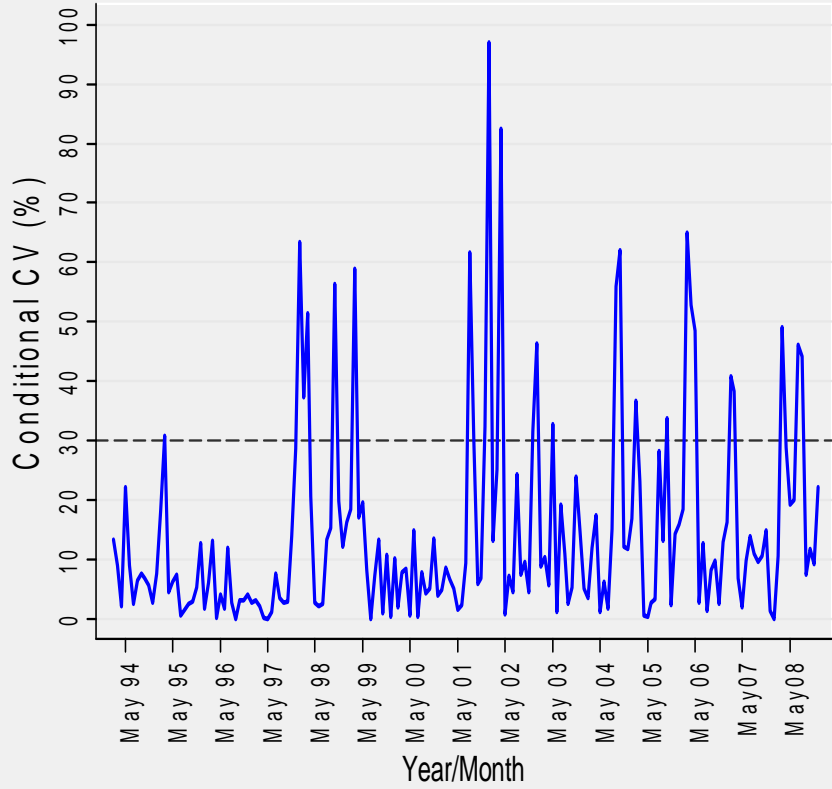


# Fig 9c. Maize Grain Prices Unpredictability

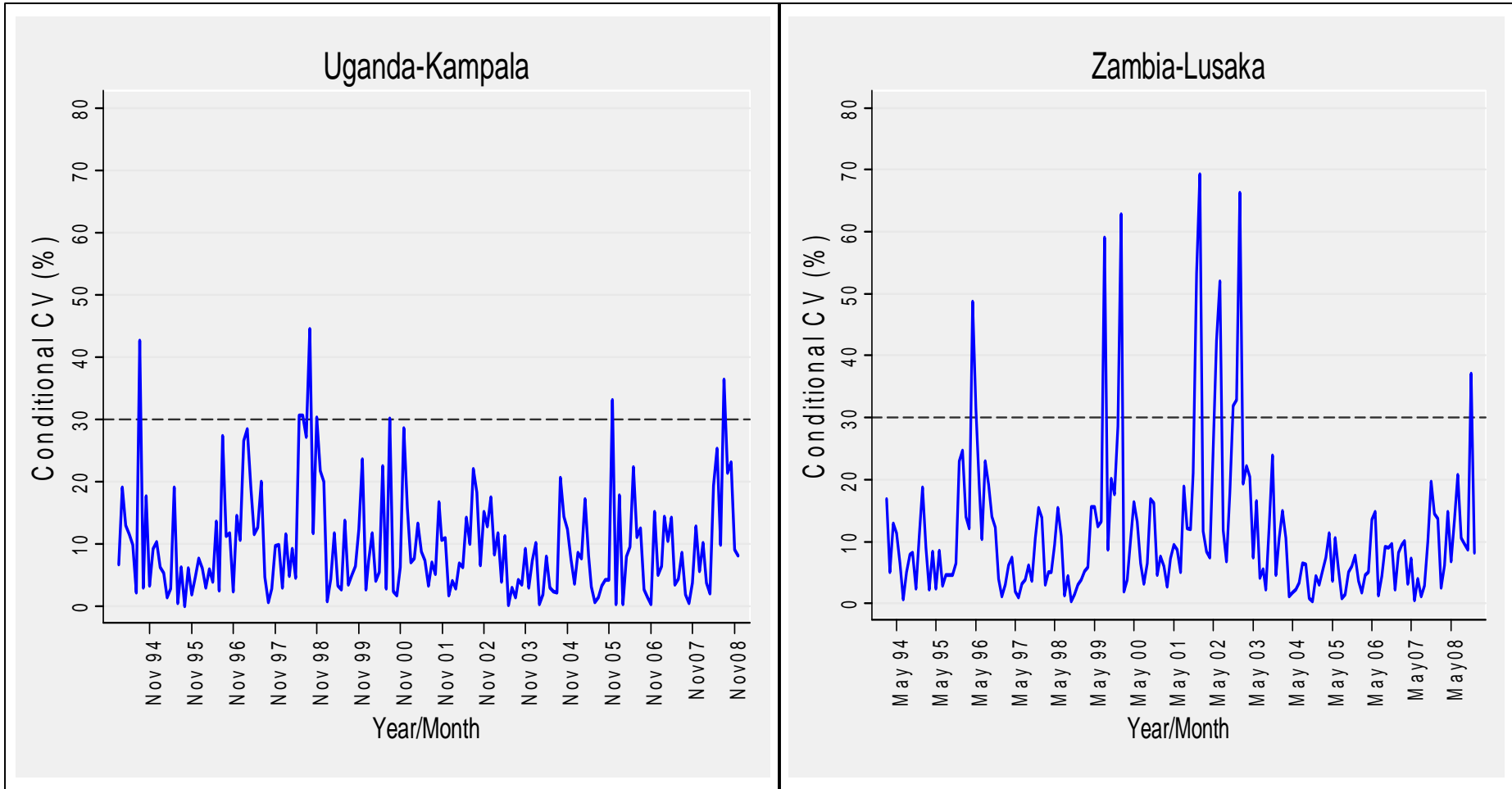
Uganda-Kampala



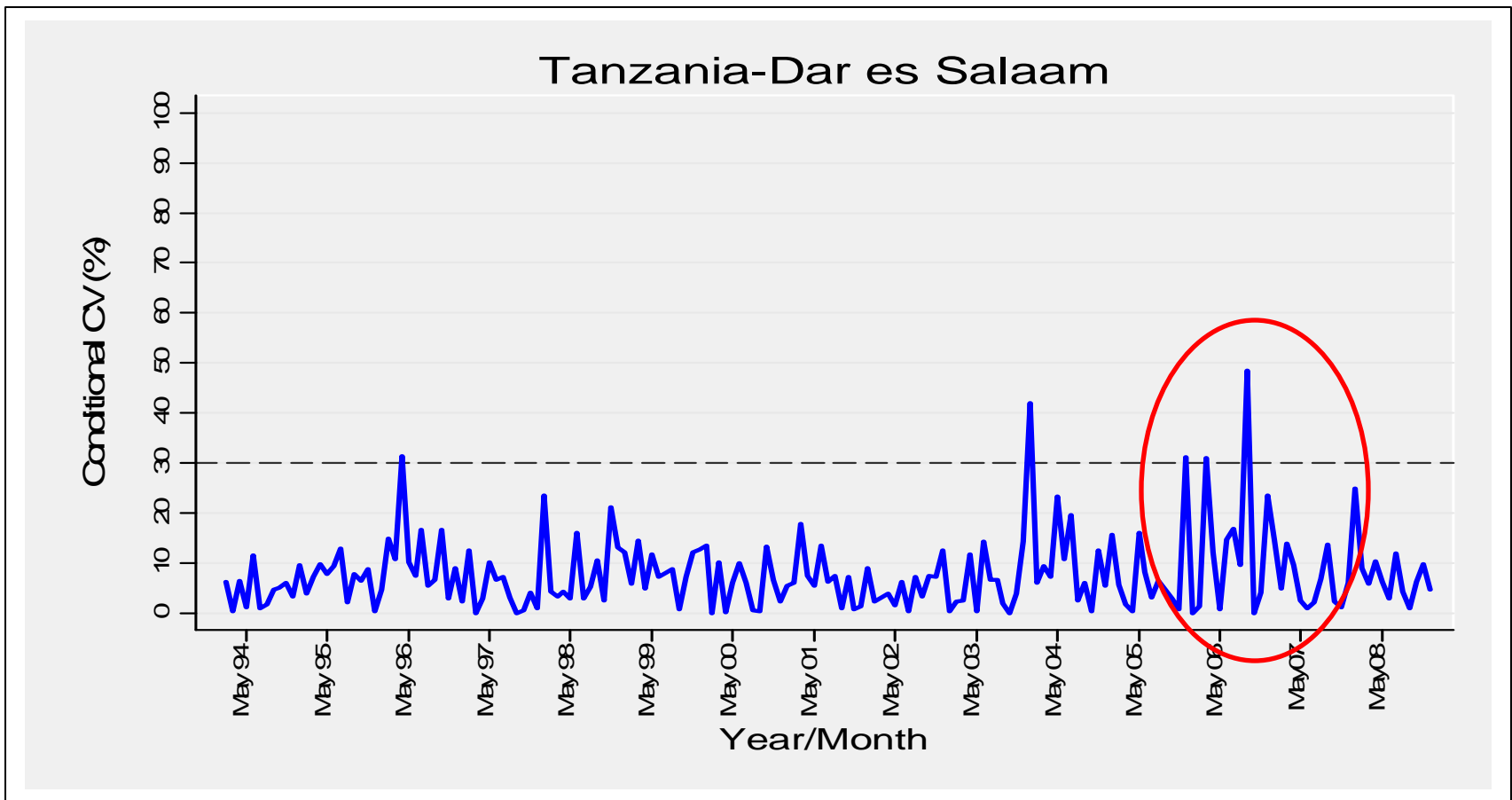
Malawi-Lilongwe



# Fig 9d. Maize Grain Prices Unpredictability



# Fig 9e. Maize Grain Prices Unpredictability



# Finding 3

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- Mozambique, has the lowest price variability in the capital city of Maputo, but the other markets Nampula and Beira, have price volatility and market uncertainty closer to that of Malawi.
  - Markets in the northern part of Mozambique are somewhat integrated with markets in Malawi so policy instability in Malawi is likely to be transmitted into these markets.

# Fig 10. Coefficient of Variation: Maize Grain Prices Instability

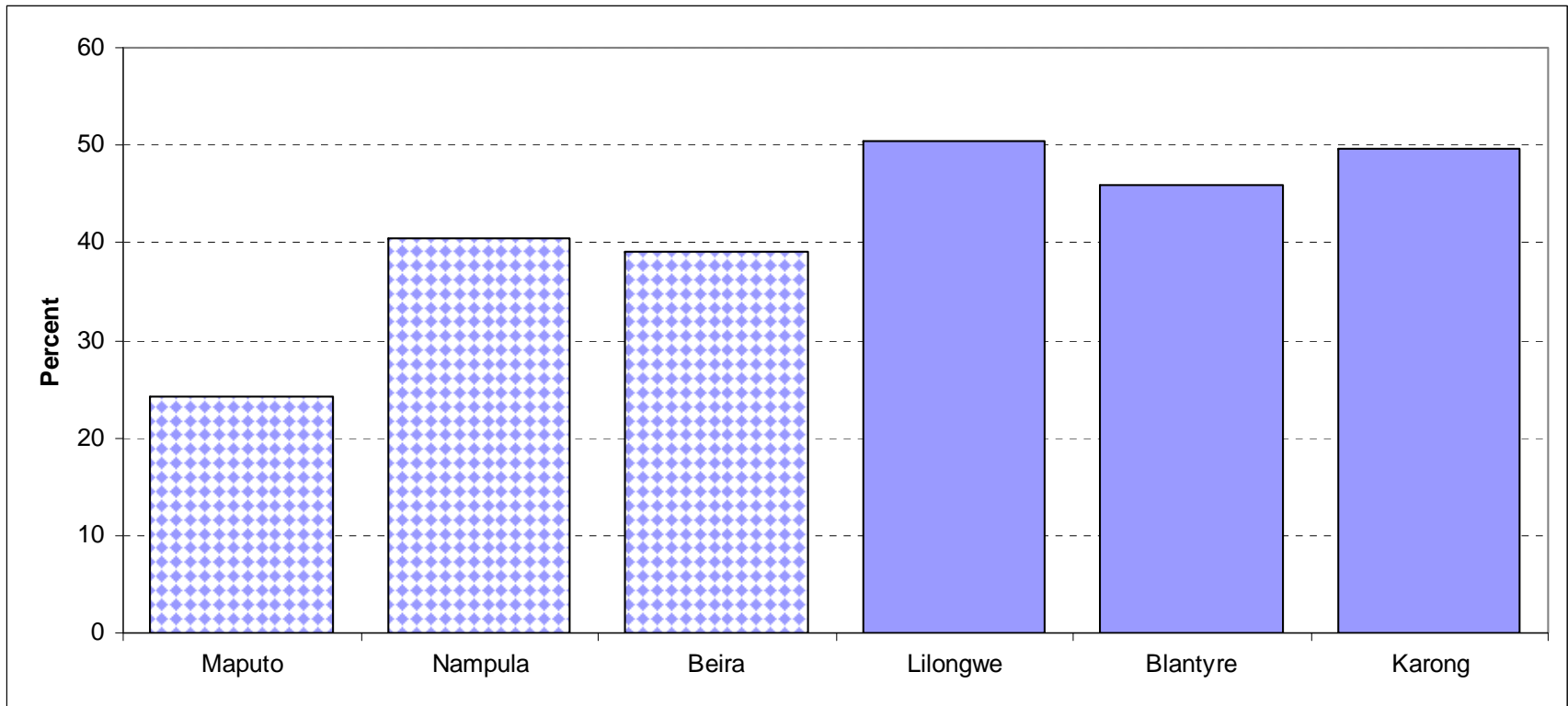
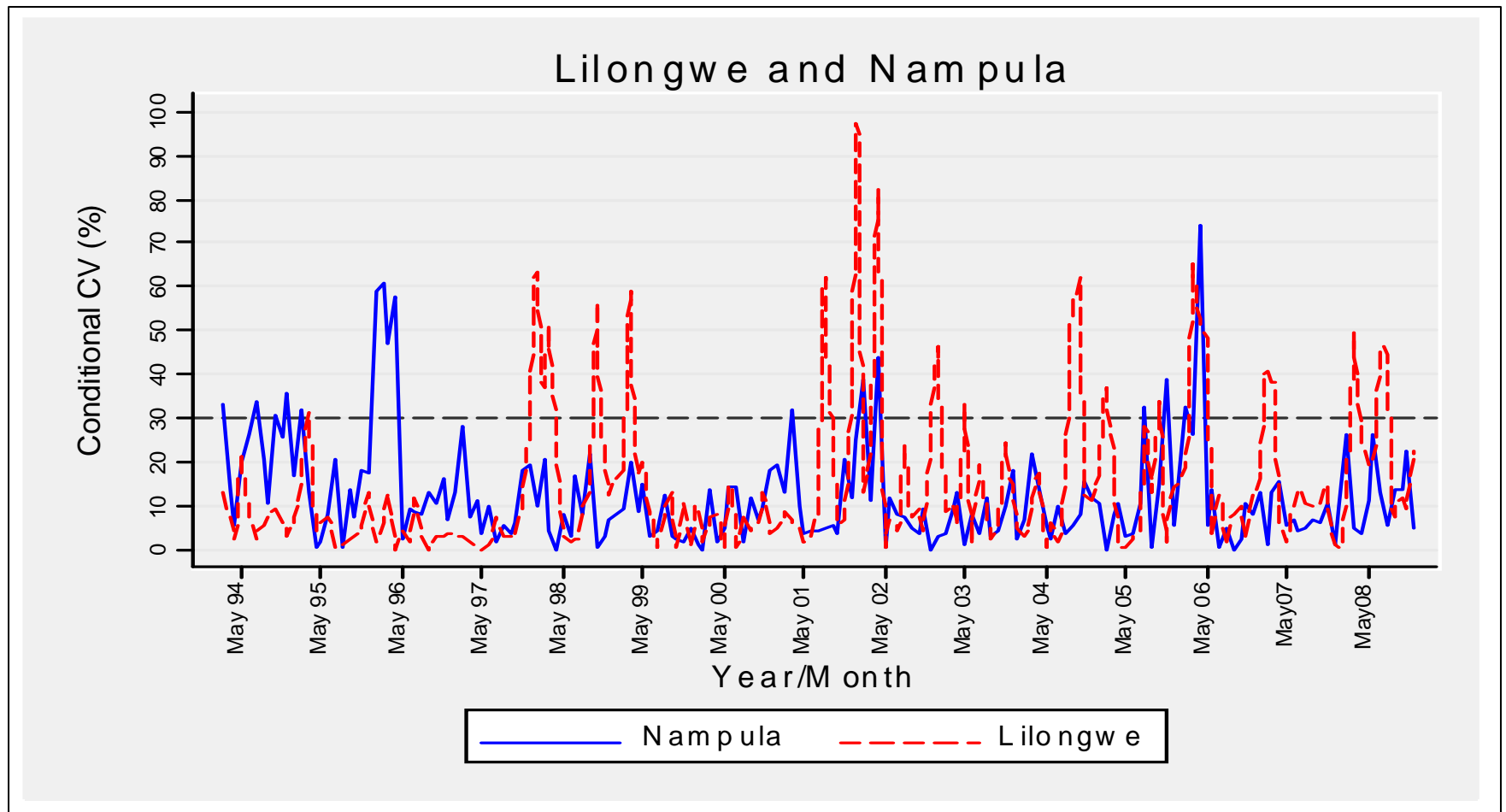


Figure 11. Comparison of Conditional Coefficient of Variation for Lilongwe, Malawi and Nampula, Mozambique

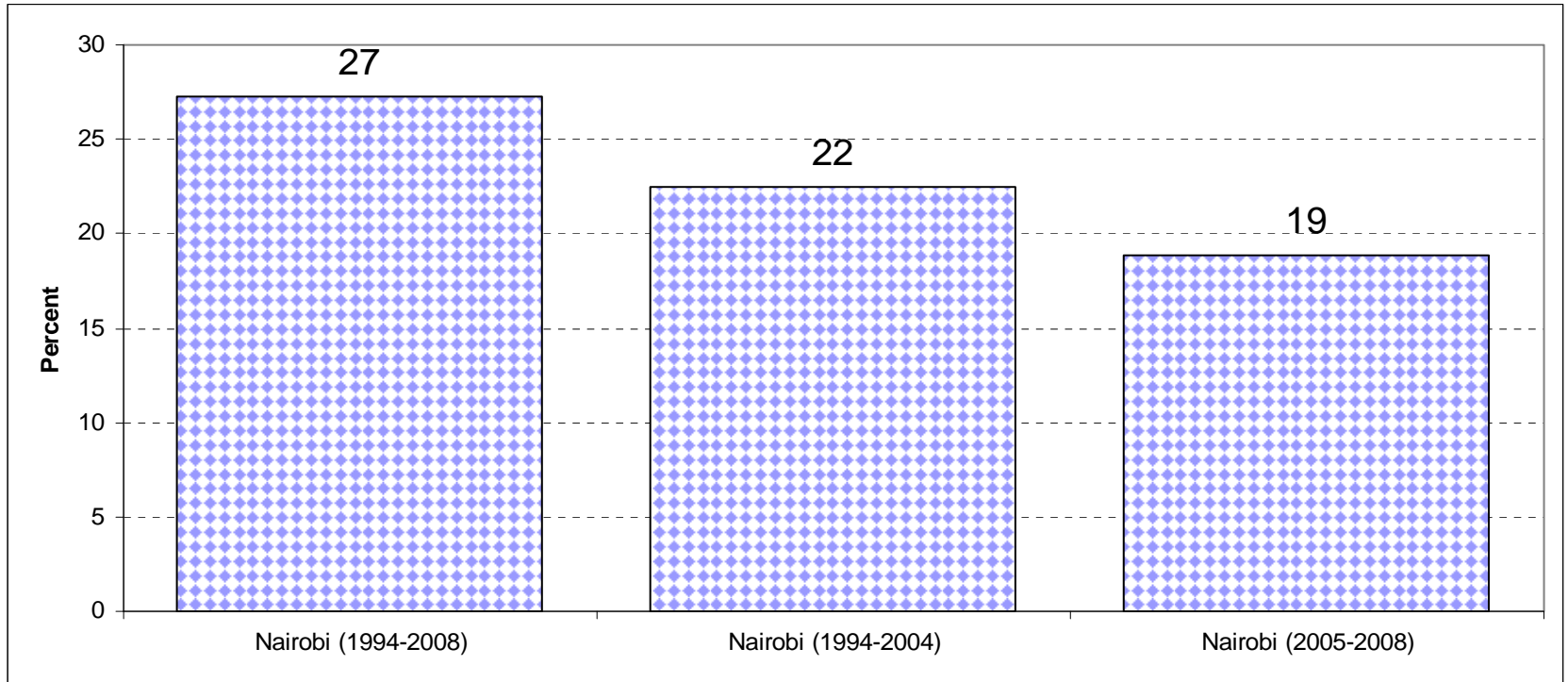


# Finding 4

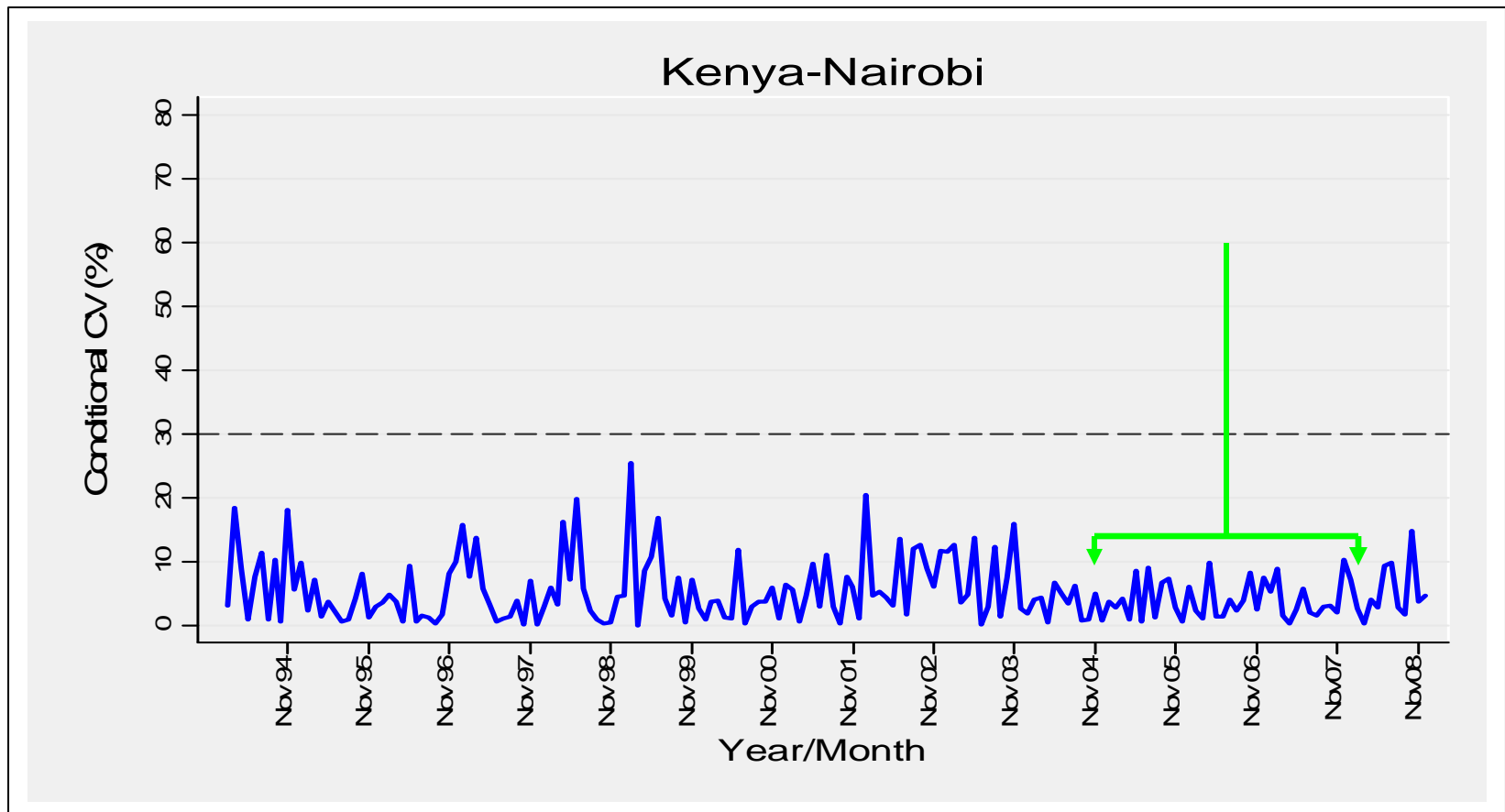
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- The more stable trade policy environment in Kenya between 2005 and 2008 appears to have contributed to the decline of both price volatility and market uncertainty.
  - Historical unconditional and conditional Coefficient of Variations (CVs) have declined since Kenya's entry into the East African Commission trading agreement in January 2005.
  - Kenya eliminated the variable maize import tariffs from Uganda and Tanzania (except for a 2.75% inspection fee).

# Figure 12. Unconditional Coefficient of Variation for Nairobi Kenya



# Figure 13. Conditional Coefficient of Variation for Nairobi, Kenya



# Conclusion

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- Despite theoretical rationale for price stabilization and controlling trade to stabilize food supplies, countries that rely on “maize without borders” generally have
  - more stable prices
  - higher cereal production growththan countries actively intervening to stabilize prices
- Government operations in markets are costly. Not clear that these costs incurred provide any tangible improvements in price stability
- While private trading systems will always result in some price variability, they tend not to cause the frequent food crises caused by ad hoc government actions that are commonly seen in the region

# Conclusion

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- We need to promote consultation and coordination between public and private sectors to reduce uncertainty in each others' behavior
- Government actions should be predictable.
  - Need for setting clearly defined and transparent rules for triggering government intervention with regard to changes:
    - in parastatal purchase and sale prices ,
    - import and export decisions,
    - tariff changes
    - stock release triggers

# Conclusion

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- Government actions should facilitate regional trade, not provide disincentives because regional trade has potential to:
  - raise farm-gate prices in areas of surplus
  - reduce consumer prices in areas of deficit
- If governments intervenes too heavily, then markets will not develop
  - We ought to have a system where private sector takes the lead in linking producers and consumers to the market not the other way around.
  - Governments have a role but should be limited to enhancing private sector capacity rather than destroy it.

# Competing models of roles 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 / defense of property rights
- Policies supportive of private sector entry and competition

## Model 2

### Primary reliance on markets

- but role for *rules-based* state operations
- e.g., buffer stock release in response to defend stated ceiling price
- Marketing board purchases at stated floor price announced in advance
- Transparent rules for initiating state imports

## Model 3

### Role for markets and *discretionary* state intervention

- Based on premise that private sector cannot ensure adequate food supplies in response to production shortfalls
- Justification for unconstrained role for state interventions in markets to correct for market failures

# THANK YOU

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<http://www.aec.msu.edu/fs2/index.htm>

# Table 1: Timing of major different policy regimes

Country	Phase 1	Phase 2	Phase 3
Tanzania	Jan 1994 to Dec 2004 (Reform phase)	Jan 2005 to current (Beginning of on/off export bans)	-
Zambia	Jan 1994 to Apr 2000 (Reform phase)	May 2001-Apr 2005 (FRA became one of the major players in the maize market)	May 2005- current (FRA ramping up its activities prior to an election)
Malawi	Jan 1994 to Mar 2005 (Reform phase)	April 2005 to current (ASIP Ag Input Subsidy Program)	-
Kenya	Jan 1994 to Nov 2000 (Reform phase)	Dec 2000-Dec 2004 (NCPB provided with more fund to ramp up activities)	Jan 2005-current (start of EAC – lower tariff rates)
South Africa, Mozambique and Uganda	-----Constant policy regime over period -----		