

A Comparison of Maize Price Stability between Countries

Supporting and Restricting Regional Trade



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What is the problem?

- In much of Eastern and Southern Africa, countries often regulate the flow of food across their border through ad hoc policies in order to try to stabilize local prices .
 - Often resulting in price instability
 - Increased production and marketing risks for farmers and traders.
 - Loss of export opportunities when regional and international maize markets are tightening.
 - E.g. Zambia could become a regional supplier & draw on Mozambique/Tanzania when supplies are short
 - Restricts growth of the agriculture sector

.....What is the problem?

- ❑ In some countries in E/S Africa, marketing boards continue to play major role in food and input markets
 - 25-70% of marketed maize in Zambia, Kenya, Malawi, Zimbabwe
 - Policy unpredictability
- ❑ Sources of policy unpredictability
 - Export bans, import quotas (Year to year & within year)
 - Uncertainty over changes in import tariff rates
 - When and where will the marketing board enter the market
 - Prices at which the marketing board buys and sells unpredictable
- ❑ Farmer & trader inventory carrying risks are high

.....What is the problem?

- ❑ All of these sources of unpredictability impede private traders' to service the market better
 - Farmer & trader inventory carrying risks are high
- ❑ When the risks of buying and storing maize become too great, then traders:
 - must limit their exposure to risks – adopt “wait-and-see approach”
 - find less risky investments
 - limit their investments that could otherwise benefit small farmers
- ❑ Impedes investment and competition in output & inputs markets

Common Arguments for grain trade barriers

- ❑ Maize is a staple crop for the poor
- ❑ Free grain movements puts farmers and consumers at the peril of unpredictable international markets?
- ❑ Poor farmers need government to defend prices for them?
- ❑ Consumers need government to make sure enough grain is always available in the country?

Open border policy vs. trade restrictions?

- ❑ Should countries have an open border policy or should they restrict the flow of maize?
- ❑ The rationale for the latter may be understandable but there is controversy if this is ever successful.
- ❑ We are therefore taking an empirical approach to shed more light on this controversy.

Objectives

- ❑ Are prices more stable in countries that resort to ad hoc export and import bans as a way of stabilizing food prices? Or
- ❑ Are prices more stable in countries that have an open border policy and rely on trade to stabilize prices
- ❑ What are the implications of the findings for maize grain trade and food security

Data and Methods

- Price stability
 - Unconditional CV

- Price uncertainty is defined as the variance of a price forecast error. Which is analogous to $E(P_t - P_t^*)^2$, where P^* is the expected price.
 - expected prices are unobservable. So we measure uncertainty as a function of the variation $\frac{(P_t - P_t^*)^2}{P}$ in past prices.
 - Unconditional coefficient of variation

- Measures of price instability
 - Unconditional coefficient of variation



thank you


.....What is the problem?

Country	Markets	Period	Source
Zambia	6 markets	1/94 to 12/06	
Malawi			
Mozambique			
Kenya			
South Africa			
Mali			

Nairobi

Year/Month	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sept	Oct	# of months btwn low- high	Ratio of high/low months
1994/95	255	221	202	204	214	207	176	172	165	162	153	142	11	80%
1995/96	141	140	137	132	130	137	171	185	194	194	198	207	7	59%
1996/97	216	236	267	279	301	315	313	312	293	242	243	248	5	46%
1997/98	226	229	241	232	236	206	193	168	186	185	177	179	5	43%
1998/99	173	159	153	205	199	208	225	239	247	231	209	208	6	62%
1999/00	214	217	224	231	211	210	223	246	241	241	225	211	2	17%
2000/01	213	210	199	189	184	178	169	167	150	141	137	129	11	65%
2001/02	113	112	151	143	151	157	162	141	139	113	134	155	5	44%
2002/03	160	185	173	152	151	163	213	227	226	234	219	234	5	55%
2003/04	193	193	194	201	221	221	220	222	220	221	224	214	10	16%
2004/05	219	212	213	231	220	219	218	218	216	219	180	226	7	29%
2005/06	230	243	216	226	231	240	251	234	255	195	195	199	1	31%
Average	196	197	197	202	204	205	211	211	211	198	191	196	6	46%

 Month of lowest price

 Month of highest price

Lilongwe


Year/Month	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	# of months btwn low- high	Ratio of high/low months
1994/95	96	104	116	111	92	67	71	95	103	103	91	69	11	72%
1995/96	60	76	83	92	101	117	126	165	164	181	229	171	7	282%
1996/97	117	102	99	103	104	112	124	123	148	172	201	159	5	103%
1997/98	129	129	129	133	138	154	209	146	274	316	200	128	5	147%
1998/99	103	110	117	96	118	183	200	212	235	263	163	103	6	173%
1999/00	104	101	107	104	121	112	140	140	130	163	164	107	2	62%
2000/01	74	42	61	71	70	58	83	80	94	100	104	83	11	148%
2001/02	71	81	98	222	290	269	275	338	515	496	400	182	5	625%
2002/03	160	170	185	151	150	153	170	231	160	213	216	180	5	54%
2003/04	99	109	98	84	87	92	80	81	96	141	186	186	10	132%
2004/05	165	150	165	150	244	150	161	168	170	159	167	159	7	63%
2005/06	155	164	192	162	164	242	272	267	266	269	405	267	1	161%
Average	111	111	121	123	140	142	159	170	196	215	211	149	6	168%


 Month of lowest price

 Month of highest price

Maputo

Year/Month	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	# of months btwn low- high	Ratio of high/low months
1994/95	150	147	152	223	264	232	246	229	228	207	179	200	3	79%
1995/96	232	203	207	215	224	251	289	307	340	330	306	244	7	67%
1996/97	236	223	211	212	214	217	216	210	244	299	279	218	2	43%
1997/98	203	165	174	195	217	262	274	317	318	322	227	221	8	95%
1998/99	201	214	208	267	264	294	280	269	255	204	169	128	6	129%
1999/00	139	149	148	151	183	183	189	236	218	204	199	193	7	69%
2000/01	197	195	181	165	166	166	155	153	148	140	136	135	11	46%
2001/02	135	141	148	150	170	216	221	276	270	274	217	161	7	105%
2002/03	159	164	189	185	231	263	254	236	265	243	216	213	8	67%
2003/04	218	213	218	219	213	216	214	258	213	271	267	268	8	27%
2004/05	213	210	176	195	200	213	245	268	273	301	267	259	7	71%
2005/06	221	222	227	263	275	257	275	424	483	477	308	219	3	120%
Average	192	187	187	203	218	231	238	265	271	273	231	205	6	46%

 Month of lowest price

 Month of highest price

Mali-Koutiala-maize

Year/Month	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	# of months btwn low- high	Ratio of high/low months
1994/95	62	67	62	68	83	106	114	112	113	130	145	157	11	155%
1995/96	141	117	119	132	153	157	171	174	188	207	217	253	10	117%
1996/97	174	103	112	129	132	134	138	137	157	156	139	106	1	70%
1997/98	87	96	103	109	114	122	131	151	160	164	182	226	11	158%
1998/99	169	125	125	123	120	134	146	143	137	145	149	129	4	41%
1999/00	122	82	76	77	63	58	60	73	78	86	81	75	5	110%
2000/01	72	78	80	82	86	114	137	135	136	145	176	178	11	146%
2001/02	114	96	116	124	169	168	175	182	201	225	235	206	10	143%
2002/03	220	157	156	179	180	175	178	182	191	187	157	148	11	49%
2003/04	78	69	74	75	74	74	81	90	91	91	100	109	10	58%
2004/05	117	134	141	142	151	181	212	240	264	280	308	308	10	163%
2005/06	180	121	133	149	150	157	163	162	170	169	147	154	1	48%
Average	128	104	108	116	123	132	142	148	157	165	170	171	8	64%

 Month of lowest price

 Month of highest price

Zambia-Lusaka

Year/Month	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	# of months btwn low- high	Ratio of high/low months
1994/95	112.9	98.8	98.8	104.3	102.5	107.3	114.5	145.6	180.1	150.7	142.0	121.2	7	82%
1995/96	114.8	100.0	102.3	126.9	146.0	171.5	189.5	226.0	250.2	256.0	238.5	143.3	8	156%
1996/97	100.8	91.7	92.8	95.1	97.1	99.4	98.9	109.5	118.8	123.4	130.0	121.9	9	42%
1997/98	110.4	102.2	101.6	118.5	136.6	150.9	170.0	190.9	198.5	188.0	175.0	141.4	6	95%
1998/99	111.1	123.5	160.7	193.7	115.9	160.5	162.9	176.1	178.5	156.7	161.3	154.4	3	74%
1999/00	138.3	140.5	139.7	62.8	75.4	74.8	73.2	60.3	163.4	157.0	142.0	129.0	1	171%
2000/01	116.8	133.4	97.9	95.6	95.3	93.0	86.6	45.8	86.2	101.9	103.3	103.0	6	191%
2001/02	95.3	85.5	98.1	135.3	118.8	141.3	165.7	230.1	305.7	241.4	206.7	176.8	7	257%
2002/03	111.2	194.5	193.8	193.4	173.5	198.2	220.3	245.7	313.8	234.0	231.7	216.9	8	182%
2003/04	134.8	107.7	102.7	123.2	130.4	159.0	117.4	156.8	168.4	183.0	155.7	140.1	7	78%
2004/05	125.2	108.4	103.4	106.1	110.3	121.3	132.1	138.7	136.1	135.3	158.7	153.5	8	53%
2005/06	139.4	146.2	139.6	160.5	167.4	172.3	194.2	261.0	232.0	246.1	247.4	194.7	8	87%
Average	117.6	119.4	119.3	126.3	122.4	137.5	143.8	165.5	194.3	181.1	174.3	149.7	7	65%

 Month of lowest price

 Month of highest price

Mali-Rice-Loulouni

Year/Month	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	# of months btwn low- high	Ratio of high/low months
1994/95	469.3	494.6	493.8	524.3	555.0	554.1	573.0	557.4	548.5	610.8	592.7	570.6	9	30%
1995/96	570.2	576.9	542.2	481.6	474.0	467.3	484.5	512.9	544.7	531.4	536.2	505.4	4	23%
1996/97	559.9	542.8	510.7	445.2	436.7	422.4	440.4	456.7	482.7	500.5	484.3	501.1	5	33%
1997/98	519.5	494.5	477.2	462.5	439.8	425.1	428.2	474.0	463.4	485.1	512.5	526.7	6	24%
1998/99	548.5	540.4	463.2	398.5	413.0	407.3	396.8	451.9	481.1	468.3	464.9	462.5	6	38%
1999/00	463.1	460.9	407.3	366.0	347.9	323.3	331.1	368.6	397.5	405.1	429.4	414.7	5	43%
2000/01	411.3	399.1	360.9	333.8	342.3	315.4	340.3	378.1	392.0	393.4	419.1	428.8	6	36%
2001/02	429.2	404.6	383.5	325.0	324.0	322.6	333.1	394.4	432.0	439.1	404.9	426.6	4	36%
2002/03	428.5	425.6	415.9	391.9	356.9	407.3	422.1	434.4	437.2	454.6	427.8	446.5	5	27%
2003/04	414.7	414.7	380.3	368.6	312.9	341.1	345.3	397.0	419.9	435.2	445.8	482.5	7	54%
2004/05	483.8	458.4	442.5	414.8	381.2	399.8	442.6	470.3	475.0	488.9	472.5	463.0	5	28%
2005/06	443.8	447.6	434.3	393.8	405.6	415.5	436.3	466.7	481.0	470.7	470.5	476.5	5	22%
Average	478.5	471.7	442.6	408.8	399.1	400.1	414.5	446.9	462.9	473.6	471.7	475.4	6	20%

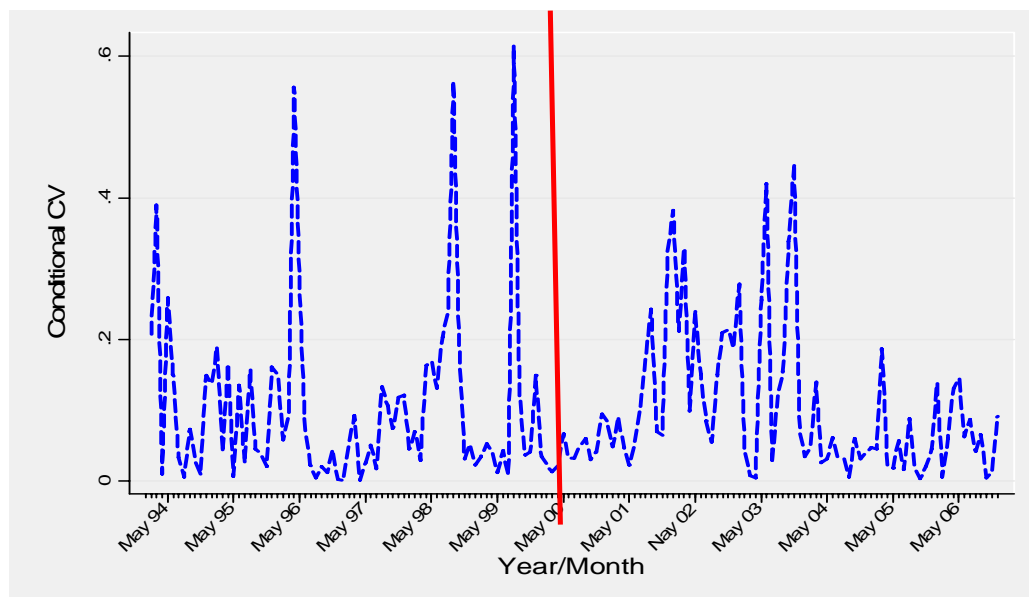


Month of lowest price

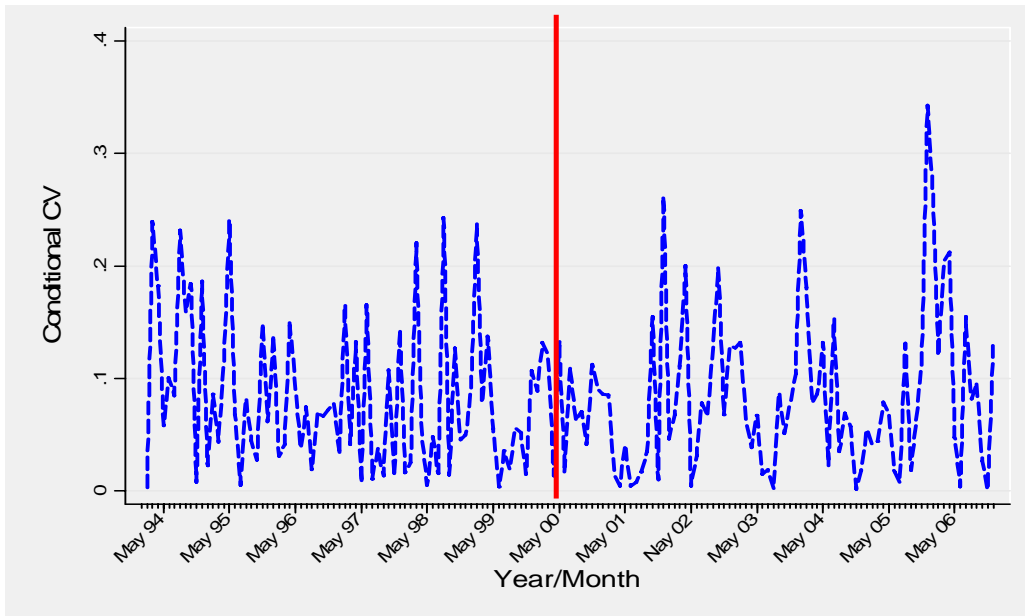


Month of highest price

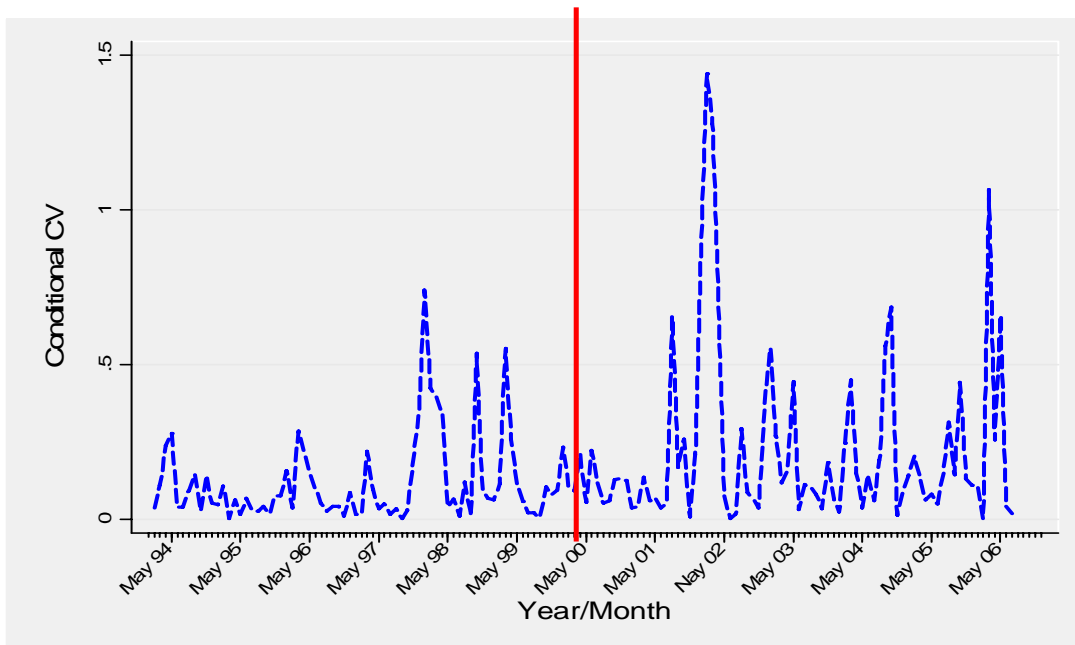
Lusaka



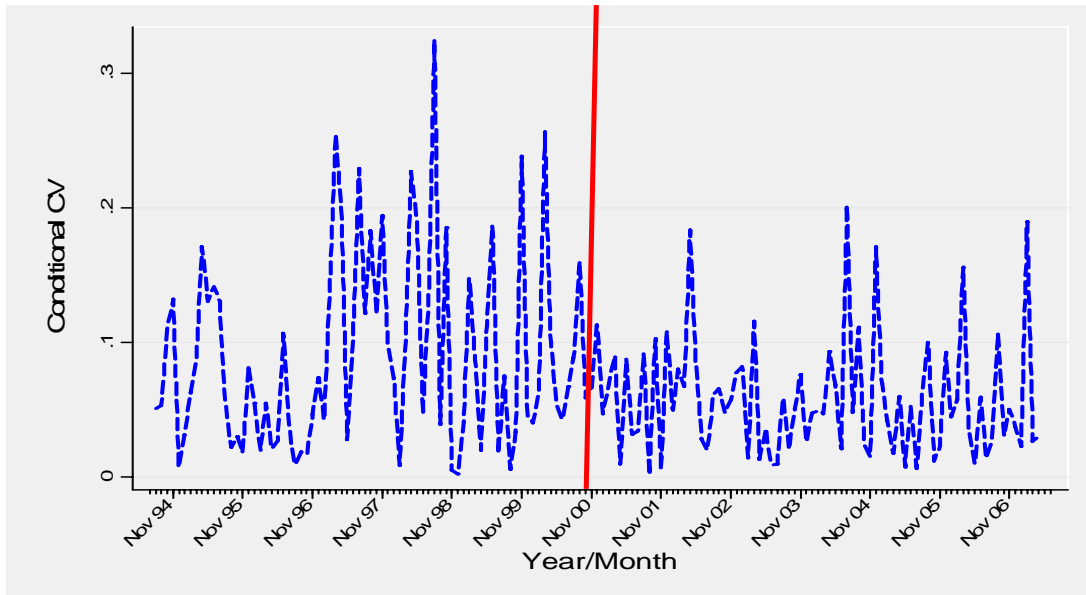
Maputo



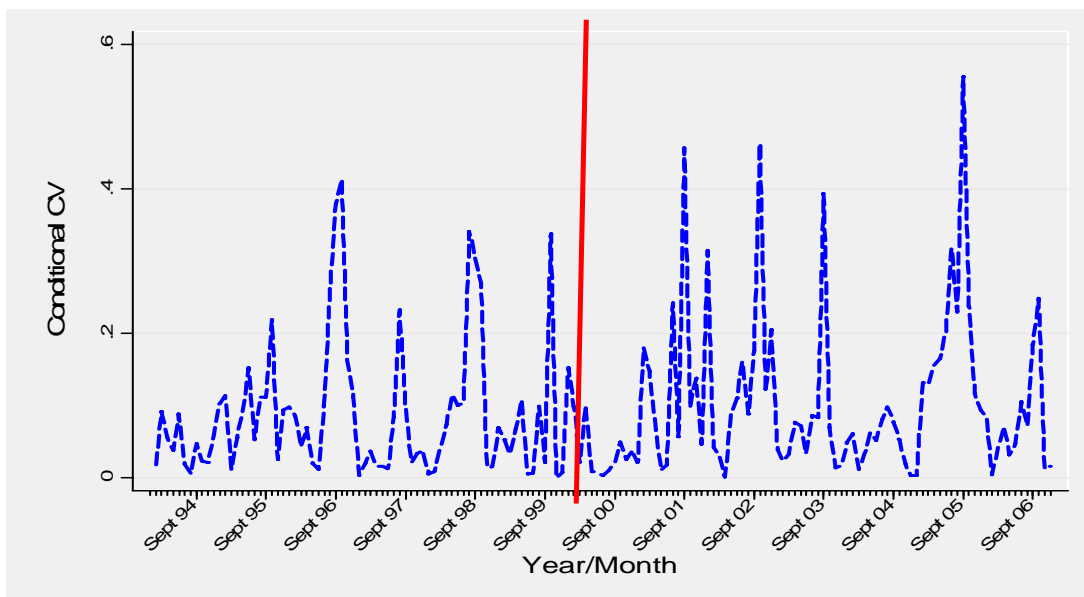
Lilongwe



Eldoret



Koutiala-Mali-Maize



Loulouni-Mali-Rice

