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Food price spikes and strategic interactions between the public and private sectors: Market failures or governance failures?

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1. INTRODUCTION

When food prices shoot over import parity, this often leads to social and political unrest and even the toppling of governments. If markets behaved efficiently and in the absence of trade barriers, food prices should not exceed the price in world markets plus the cost of importing it to domestic markets (i.e., import parity). However, food prices routinely soar above import parity in several countries of East and Southern Africa, causing widespread hunger and asset depletion among the poor.

Policy makers have two good reasons for seeking to understand why domestic food prices sometimes exceed import parity: first, to develop strategies to protect the welfare of the urban and rural poor in response to national food production shortfalls, and second, to promote political and social stability. This study is motivated by the need to avoid such food crises, to understand why they occur with such regularity in the region, and to consider policy options for avoiding them in the future.

At the heart of this issue are the interactions between governments and traders in food markets. Traditional development economics typically analyses the performance of food markets as the impact of shifting demand and supply functions. This approach can be usefully complemented by an investigation of the strategic interactions between public and private marketing actors and how their behaviour responds to one another. We conclude that a better understanding of these strategic interactions is necessary to put in place appropriate strategies for ensuring that domestic food prices do not exceed import parity and thus reduce the potential for extreme upside price shocks.

The following section explores the political economy interactions between the state and private sector in grain markets. We then lay out a theory that explains how government reliance on discretionary trade policy instruments leads to strategic interactions that can precipitate food crises. We then examine the details of two specific cases from the recent 2008/09 year in which domestic food prices greatly exceeded import parity prices for extended periods: (1) the case of Kenya from late 2008 into August 2009; and (2) the case of Malawi from late 2008 to April 2009. The concluding section summarizes the main findings, considers the potential effectiveness of alternative policy responses under consideration to ensure against upside food price risk.

2. POLITICAL ECONOMY OF FOOD MARKETS IN THE REGION

Despite the conventional perception that food markets have been “liberalized”, many African governments in East and Southern Africa continue to intervene heavily in food markets. The stated purpose of most government operations in markets is to stabilize food prices and supplies. Governments pursue price stabilization objectives through two main routes: (1) marketing board operations, and (2) discretionary trade policy instruments, such as export bans and variable import tariff rates. A defining feature of the marketing environment in the “liberalization period” in most of East and Southern Africa has been tremendous unpredictability and frequent change of direction in governments’ role in the market. In this environment, the performance of food markets is greatly affected by the way the private sector and the government interact.

Marketing board operations

Marketing board operations have generally been more modest in recent years than during the pre-control period. However, they continue to be major actors in their countries' maize markets. Using data provided by the national marketing boards between 1995 and 2004, the boards' annual purchases have fluctuated from an estimated 15–57 percent of the domestic marketed maize output in Kenya, 3–32 percent in Malawi, and 12–70 percent in Zambia (Jayne, Nijhoff, and Zulu, 2006). These figures understate the boards' full impact on markets because they do not count their often sizeable maize imports and subsequent release onto domestic markets. Because the boards are typically the largest single player in the market and often behave unpredictably, their operations can create major risks and trading losses for other actors in the market. In countries such as Malawi, Zambia, Zimbabwe, and Kenya, the marketing boards' involvement appears to have risen in recent years, as budget support from governments has shifted somewhat over the past decade from "conditionality" agreements to minimally tied, or untied, budget support.²

Discretionary use of trade policy instruments

In addition to direct involvement in crop purchasing and sale at controlled prices, governments influence markets and marketing participants' behaviour through discretionary trade policy instruments such as export bans, changes in import tariff rates, and control over importation through licenses. In many countries, traders seeking to import grain must apply for import licenses. If licenses are not issued, opportunities for the market to hold domestic prices in line with import parity are lost.

Similar problems arise due to uncertainty about when and whether governments will alter their import duties in response to a short crop. Traders that mobilize imports early face financial losses if the duty is later waived and competing firms (or the government parastatal) can import more cheaply. When governments create uncertainty over when and whether an import tariff will be waived during a poor crop season, the result is commonly a temporary under-provision of imports, which can then result in shortages where local prices exceed import parity levels for periods of time (Nijhoff *et. al.*, 2003). When the import tariff is finally waived, imports are compressed into a truncated period, which may cause transport bottlenecks and exacerbate the market's ability to quickly overcome local scarcity especially if import requirements are large relative to domestic transport capacity.

Motivations for use of discretionary policy tools

Why have successive governments in the region tended not to pursue the market reform and liberalization agenda recommended by international development agencies? There are two possible explanations. The first is that government objectives are varied, inherently political, and vulnerable to influence and capture by elites. As argued by Lopez (2003), the allocation of public expenditures tends to be biased in favour of private goods, such as input subsidies, that can be captured by politically influential groups and against the provision of public goods that would improve the overall performance of markets and thus have broad-based benefits for the poor. The political landscape in much of Africa can also be described as being dominated by neo-patrimonial relationships, in which government commodity distribution is an important tool by which leaders maintain loyalty and patronage among rural leaders and their constituents (van de Walle, 2001; Pletcher, 2000).

² Conditionality agreements typically identified specific policy reforms or actions that governments would commit themselves to doing in exchange for receiving loans from international lenders. Untied loans are financial injections directly to the Ministry of Finance with less stringent strings attached as to how the funds are to be spent.

The second class of explanations has to do with genuine government concern for the welfare of smallholders as well as urban dwellers. White maize is the strategic political crop in this region of Africa. Maize became the cornerstone of an implicit and sometimes explicit 'social contract' that the post-independence governments made with the African majority to redress the neglect of smallholder agriculture during the colonial period (Jayne and Jones, 1997). The controlled marketing systems inherited by the new African governments at independence were viewed as an ideal vehicle to implement this objective. The benefits of market controls designed to produce rents for European farmers during the colonial period instilled the belief that the same system could also promote the welfare of millions of smallholders if it was simply expanded (Jenkins, 1997). The social contract incorporated the understanding that governments were responsible for ensuring cheap food for the urban population.

While the social contract approach achieved varying levels of success in promoting smallholder incomes and raising consumer welfare, a common result in all cases was an unsustainable drain on the treasury. The cost of supporting smallholder production - through input subsidies, credit programs with low repayment rates, commodity pricing policies that subsidised transport costs for smallholders in remote areas, and the export of surpluses at a loss - contributed to fiscal deficits and, in some cases, macroeconomic instability. Under increasing budget pressure, international lenders gained leverage over domestic agricultural policy starting in the 1980s, which culminated in structural adjustment programs. While structural adjustment is commonly understood to be a decision that international lenders imposed on African governments, a more accurate characterization of the process is that this adjustment was unavoidable due to the mounting fiscal crises that the social contract policies were imposing on governments (Jayne and Jones, 1997). Continuation of the status quo policies was not an option in countries such as Malawi, Tanzania, Zambia, Zimbabwe, and Kenya, and in some of these countries, the controlled marketing systems had already broken down even prior to policy liberalization as parallel markets swiftly became the preferred channel for most farmers and consumers. Moreover, the erratic performance of the state-led systems, reflected by frequent shortages of basic commodities and late or partial payments to farmers, created support for reform among some domestic constituencies.

The rise of multi-party electoral processes in the early 1990s has, however, made it difficult for governments in these countries to withdraw from 'social contract' policies. Elections can be won or lost through policy tools to reward some farmers with higher prices and reward consumers with lower prices, and this is hardly unique to developing countries (Bates, 1981; Bates and Krueger, 1993; Bratton and Mattes, 2003; Sahley *et al.*, 2005). Because they provide obvious demonstrations of support for millions of small farmers and consumers, a retreat from the social contract policies exposes leaders to attack from opposition candidates (Sahley *et al.* 2005). For this reason, it remains difficult for leaders to publicly embrace grain market and trade liberalization, even as they accepted structural adjustment loans under conditionality agreements from international donors to reform their internal and external markets. And starting in the late 1990s, the transition of the World Bank and other development partners from structural adjustment loans with ex-ante conditionality to direct budget support with ex-post conditionality made it easier for states to reinstate some elements of the social contract policies.

By the early 2000s, grain marketing boards have once again become the dominant players in the market in Kenya, Malawi, Zambia, and Zimbabwe (Jayne *et al.* 2002). Each of these countries have a highly unpredictable and discretionary approach to grain trade policy, commonly imposing sudden and unanticipated export and import bans, changes in import tariff rates, or issuing government tenders for the importation of subsidised

grain. Problems frequently arise due to uncertainty about when and whether governments will alter import duties or import intentions in response to a short crop (e.g., Zambia in 2000–01, 2001–02; 2005–06; Malawi in 2001–02). Traders otherwise willing to mobilise imports early are likely to incur financial losses if the government later waives the duty and allows competing firms (or the government parastatal) to import more cheaply. When governments create uncertainty over import intentions or tariff rates during a poor crop season, the result is commonly a temporary under-provision of imports, which can produce a situation of acute food shortages and price spikes far above the cost of import (Nijhoff *et. al.*, 2003; Mwanaumo *et. al.*, 2005; Tschirley and Jayne, forthcoming). Analysts not familiar with the details of these situations often erroneously interpret them as evidence that markets fail and that the private sector is weak, leading to a rationale for continued direct government involvement in marketing. These illustrations highlight the importance of strategic interaction, in determining food security and improving market performance.

3. CONCEPTUAL FRAMEWORK

Our conceptual framework is based on five premises; we explain each of these in more detail below and draw on two concepts in the political science and sociology literature – the *credible commitment problem* and the *wicked problem* – to develop implications. Our premises are: i) government and traders interact in the same political and economic space but with differing objective functions; ii) the two are dependent on each other in that the behaviour of each affects the outcome of the other; iii) trust between government and traders is difficult to develop because of differing objectives, values, and world views; iv) information about the other's behaviour is imperfect, and the effects of some behaviours are seen only with a time lag; and v) as a result, each must base their own behaviour in part on expectations about the behaviour of the other.

Government's objective is to remain in power. In the electoral democracies that have prevailed in Southern Africa for the past 15 years, this requires gaining sufficient votes to win the next election. Given the importance of food staples in the budgets of these countries' (mostly poor) consumers', ensuring adequate supplies of staple foods throughout the country at prices accessible to the poor, and gaining political credit for this outcome, makes an important contribution to government's ultimate political objective.

Traders' main objective is to maximize profits over some time horizon. Traders' profits are clearly affected by government policies and practices. For example, sudden imposition of trade restrictions, or direct government importation of food and targeted sales to selected buyers at subsidized rates, can dramatically affect a trader's bottom line for good or bad, depending on their market position in relation to the government action: a trader sitting on large stocks of maize when an export ban is imposed could lose large sums of money, while another without stocks but with a contract to supply maize to an institutional buyer could earn much higher profits than in the absence of the export ban. Likewise, any ability that traders might have to engage in non-competitive behaviour can negatively influence the achievement of government's instrumental objective of broad and affordable access to food.

Government and traders cannot be certain what the other will do, so each must base their behaviour in part on expectations regarding the likely behaviour of the other. This dynamic creates a "*credible commitment problem*", in which the inability of parties to make credible commitments to each other precludes a course of action that would resolve a conflict (North, 1993; Schaffer 1989; Greif, Milgrom, and Weingast, 1994; Acemoglu, 2003). For example, government may state a commitment to importing a certain quantity

of grain within a specified time period; but even in the absence of mistrust, the complexity of decision making means that traders cannot be certain that government will actually do this. Nor can traders be certain of who will be allowed to buy the grain from government if and when it does import, or at what price. These unknowns are major sources of risk and potential financial loss for traders. For its part, government cannot be sure that traders will import sufficient food during a crisis to assure broad access at politically acceptable prices. In fact, because demand for food staples is price-inelastic, governments know that trader profits will be increased in the short-run by restricting supply, and so are sensitive to the possibility that traders may collude to do this.

The typical solution to commitment problems involves *third party guarantees* (Acemoglu, 2003). In economies with well developed institutions, the judicial system frequently plays this role: parties to a contract don't need to fully trust each other (though this helps) as long as they believe that the courts will efficiently and effectively enforce the contract in the case of default by one party. In our commitment problem, a competitive market could provide a third party guarantee, by imposing sufficient discipline on individual traders that their profit seeking actions result in government also achieving its goal. In the terminology of the social trust literature (Falcone and Castelfranchi, 2001), government could delegate the task of maintaining adequate supplies and accessible prices to traders as a collective, i.e., to the market.

Several factors stand in the way of such a choice. First, markets may not be fully integrated and competitive and so may not provide this discipline. This may be especially true of markets for large-scale food imports, which require substantial financial and physical (e.g., transport, storage) capital, though evidence presented below suggests that integration in the region is improving. Informal markets may be more competitive, but are by definition smaller in scale, have more limited geographical scope, and thus may not by themselves be able to respond adequately to a large national shortfall. Second, high transport costs in African markets mean that, even if markets are competitive, final costs to consumers during national production shortfalls can be high (Poulton *et al.*, 2006, p. 346; Tostau and Brorsen, 2005). Finally, government officials – and the public whose votes they need – may have little appreciation for how competitive markets can convert individual profit seeking into socially beneficial outcomes. This understanding is further hindered by the differing beliefs, values, and world views that broadly characterize the government and trading sectors in the region;³ as noted by Poulton *et al.* (2006; p. 346), civil society also frequently “feels vulnerable to ‘speculators’ and may be particularly wary where prominent traders come from minority ethnic groups”. The trade problem, especially during a food crisis, thus takes on elements of a “*wicked problem*”, in which “core beliefs are at stake, competing sides defend their belief systems and attack” those of others, and the problem “(resists) resolution by appeal to the facts” (McBeth *et al.*, 2007; see also Conklin, 2006).

The result of this dynamic is that government often prefers to take an active and direct role in assuring adequate food supplies. Yet no government in the region is capable of handling this challenge on its own. It thus enlists the private sector, but attempts to control its behaviour through some mix of import/export permits, awarding access to subsidized government imports only to particular firms, direct public distribution, and use of the political “bully pulpit”⁴ regarding the amount of food that the private sector should import.

³ The public and trading sectors are of course not completely separate. Individuals in government sometimes collaborate with the trading (and maize milling) sectors, frequently in secret and for purposes of personal enrichment. We have also acknowledged the validity of patronage as a (partial) explanation for the dynamic we are investigating. We maintain, however, that this collaboration is most often merely strategic, and does little to bridge the gulf in world view between the two parties.

⁴ This refers to the use of the persuasive powers and moral authority of the office of the president/prime minister to cajole and otherwise verbally push actors to behave in a fashion believed to be in the public interest.

With no third party solution to the commitment problem, and with trust undermined by the wicked problem, the parties behave in ways that undermine the interests of both. Key among these is *inaction* by the private sector: because many firms are motivated more by fear of loss than by desire for gain (Kahneman, Knetsch and Thaler, 1991), uncertainty regarding government behaviour may lead to private sector not importing even when current or anticipated domestic prices suggest that they should. As a result, consumers are harmed by skyrocketing food prices, governments lose political standing, the private sector foregoes current profits, and both miss an opportunity to build a competitive commercial trading network that could serve everyone's interests during future production shortfalls.

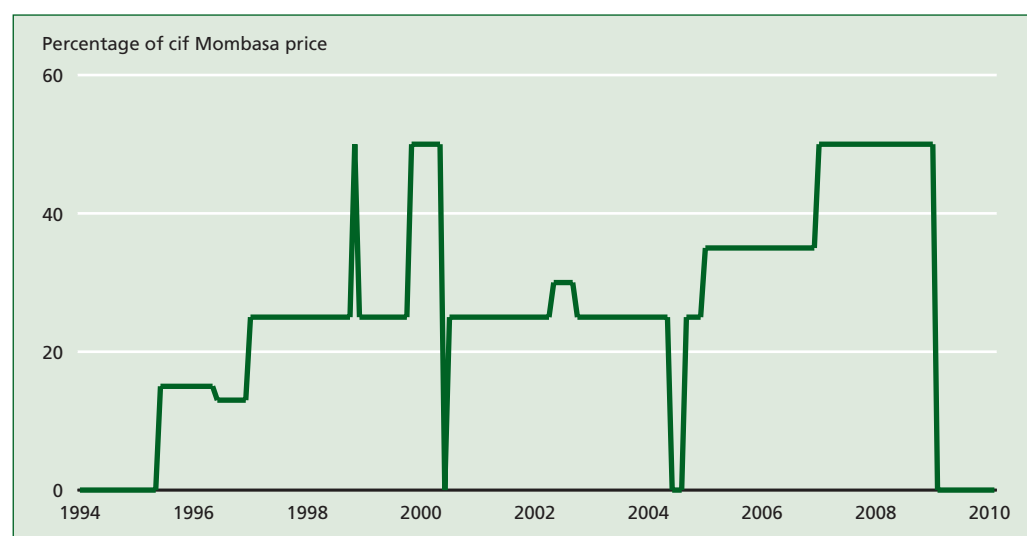
The following sections provide two concrete illustrations of how public and private sector interactions caused maize prices to greatly exceed import parity prices: (1) the case of Kenya from late 2008 into August 2009; and (2) the case of Malawi from late 2008 to April 2009.

4. KENYA: JANUARY TO AUGUST 2009

In early 2008, Kenya's main season harvest in late 2008 was estimated to be below average due to high fertilizer and fuel prices as well as post-election violence in early 2008. Erratic main season rains further reinforced the early warning conclusions that maize shortages would arise by early 2009 unless steps were taken to import maize. Early warning estimates of import requirements were in the range of 1 million tons. Imports from Tanzania and Uganda were believed to be able to satisfy some of Kenya's residual maize requirements, but Tanzania has an export ban in place. Kenya, on the other hand, maintained a 50 percent import duty on maize through the port of Mombasa throughout 2008. The duty made private importation uneconomic and created a situation in which the Kenyan government would need to arrange maize importation from the world market to avert shortages. However, as of December 2008, the government had imported only 135,000 tons from South Africa. Private informal imports Tanzania and Uganda were estimated at 120,000 tons through 2008 despite official trade bans (RATIN, 2009).

Kenya's maize import tariff rate has always been a topic of speculation by grain traders given sudden changes and occasional zero-rating by the government (Figure 1). Millers,

Figure 1. Maize import tariff rate through Mombasa Port, Kenya, 1994–2009

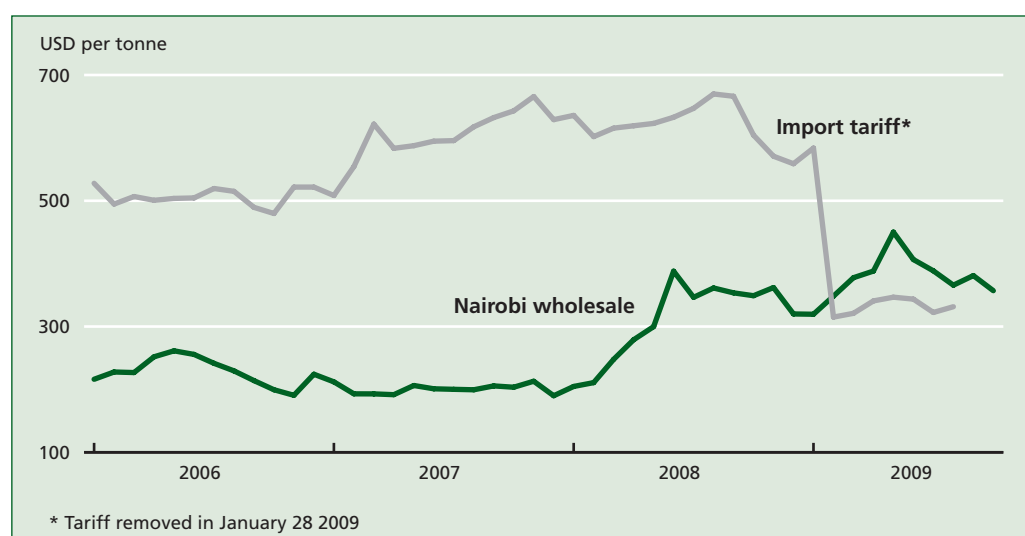


Source: Ministry of Trade and Industry.

traders, and local analysts had been arguing for a duty waiver since it became clear in mid-2008 that massive imports would be required. This would have allowed sufficient grain to be imported well in advance of the depletion of domestic supplies and thereby avoid congestion at the port and undue strain on available upland transport capacity.

In response to the poor harvest and restrictions on importation, prices have risen sharply in 2008. Figure 2 presents Nairobi wholesale maize price trends denominated in U.S. dollars. Note that 2007 price levels were relatively average despite the rise in world food prices that had already begun. High world prices in 2007 and early 2008 no doubt pushed Kenyan maize prices in the range of USD 300 to USD 350 by mid-2008 when the market moved toward an import parity price surface in anticipation of the need for imports. But because of delays in government importation and government's decision to maintain the 50 percent tariff on imports through Mombasa throughout 2008, maize prices stayed at very high levels in late 2008 despite the tumbling of world prices starting in October 2008. Maize prices usually decline by November or December in Kenya as the main season harvest hits the market. The fact that prices continue to stay over USD 300 per tonne at this time could have been an indicator of a food crisis to come.

Figure 2. Nairobi local and import parity prices, January 2006–August 2009



Source: Ministry of Agriculture Market Information Bureau for Nairobi wholesale prices; Kenya Bureau of Statistics for exchange rates; SAFEX and Tegemeo Institute for import parity prices.

In January 2009, Kenya's food crisis took a new turn as allegations of corruption over the issuing of import licenses, reported diversion of maize imports to Sudan, and a lack of transparency over the sale of subsidized NCPB grain have led to the sacking of most of the NCPB Board of Directors and 17 senior managers. On January 16, 2009, President Mwai Kibaki declared a state of emergency and launched an international appeal for USD 463 million to feed roughly 6 million people who were estimated to be food insecure. In January, the World Food Programme has pledged to feed 3.2 million people following the government's declaration of a food crisis in the country.

The import duty on maize was finally lifted on January 28, 2009, allowing importers to buy maize from the international market and bring it into the country duty free. Millers and traders immediately placed import orders from South Africa. Within three weeks, supplies starting landing at Mombasa Port. The Grain Bulk Handling facility at the port

was able to offload grain at a capacity of roughly 220,000 tonnes per month. However, inland transport capacity now became the main constraint. The Kenyan Railways system linking Mombasa to the main population centres in central and western Kenya had stopped operating and private transport capacity was insufficient to handle the massive grain imports that were concentrated into weeks immediately after the import duty was lifted. Grain traders interviewed during this period indicated that the maximum transport capacity from Mombasa is 150,000 tonnes per month, which would have been sufficient to transport to upland population centres if imports had been mobilized by mid- to late-2008 earlier, but which were not possible to stave off shortages by the time the import tariff was actually lifted in late January 2009. Consequently, rationing of maize was experienced in late 2008 and domestic prices continued to climb upward of USD 350 per tonne, even as the cost of importing maize to Nairobi had fallen to the USD 300–320 per tonne range. Because grain did not arrive at the port early enough to transport sufficient volumes upcountry (given transport capacity constraints) to meet demand requirements, maize market prices continued to climb during the first half of 2009 well over import parity. This state of affairs could have been avoided if the import tariff was lifted much earlier, especially since national shortfalls were predicted by the early warning systems and by local policy institutes as early as May 2008.

The compression of maize imports into a two-month period (late February–April 2009) also generated additional marketing costs that were ultimately borne by Kenyan consumers. Because inland road transportation was insufficient to handle the volumes imported (estimated at 0.7 million tonnes), traders were forced to store their grain in facilities outside the Mombasa port waiting for available transport to arrive. Upland transport capacity was further constrained by the fact that fertilizer importation for the main growing season typically occurs in February–March as well.

By September 2009, domestic maize prices were again falling in line with import parity as imports continued to relieve the deficit and production from some areas of the country began to hit the market.

5. MALAWI: NOVEMBER 2008 TO APRIL 2009

Malawi has recently received critical acclaim for its success in transforming the country from a food-aid dependent importer to a food secure exporter (New York Times 2007).⁵ In 2005/06, the government re-introduced a large-scale fertilizer subsidy program (see Dorward *et al.* 2008 for a detailed assessment). Erratic rainfall in 2005/06 impeded the impact of this program in 2006. In the 2006/07 crop year, the combination of favourable weather and the distribution of improved maize seed and fertilizer through the subsidy program produced what was considered to be a record maize harvest in 2007. The government issued an official maize production estimate of 3.4 million tonnes. Domestic consumption requirements were believed to be in the range of 2.1 million tonnes, indicating a surplus of well over a million tonnes.

In response to the reported surplus for the 2007/08 marketing season, the government issued tenders to private traders to supply 450,000 tonnes for export to other countries

⁵ President Bingu Wa Mutharika was recently awarded a United Nations (UN) Global Creative Leadership Award and also received the first Food, Agriculture and Natural Resources Policy Network (FANRPAN) food security policy leadership award for reviving the country's fertilizer subsidy programme. He also was honored at the 2008 African Green Revolution Conference in August 2008 for the country's success in promoting food security.

in the region. However, the private sector reported difficulties in sourcing this quantity of maize, and by late 2007 Malawi had only exported 283,000 tonnes. The government then suspended further exports due to a rapid escalation in domestic market prices. Within several months after the harvest, maize prices reached near record highs, exceeded only in the major crisis year of 2001/2 and the drought year of 2005/06 (Figure 3). By late 2007/early 2008, maize prices in Malawian markets were USD 100 to USD 150 per tonne higher than in other regional markets. The 2007/08 season was also characterized by reports of localized maize shortages, rationing of maize by the marketing board ADMARC, and net maize imports of over 50,000 tonnes from neighbouring countries, primarily Mozambique and Tanzania (Reuters 2008; FEWSNET 2008a). These outcomes are difficult to reconcile with the official estimates of a record maize harvest of 3.4 million tonnes in 2007.

In May 2008 the Government of Malawi reported that the country had produced another major maize surplus, estimated at 500,000 tonnes. In an effort to provide a floor price for this surplus and to accumulate food security stocks, the government instructed ADMARC to purchase more maize this year than in previous years. To achieve this, ADMARC announced commodity buying prices early in the season and also started buying earlier than usual. ADMARC also opened more seasonal markets and temporary buying points.

ADMARC began procuring maize at 20,000 kwacha (USD 140) per tonne at the start of the 2008 harvest, but quickly raised its price to 25,000, then 30,000, and then 40,000 (USD 280) per tonne to outbid private traders. However, market prices rose dramatically in response to the scramble for maize (Figure 3). By early August, ADMARC and the National Food Security Reserve Agency (NFRA) had procured only 60,000 tonnes combined, which by most accounts was considered to be too little to meet the demand for grain at ADMARC depots through the upcoming lean season before the 2009 harvest in May. By early August 2008, only 2–3 months after the reportedly good harvest, maize prices had reached historic highs (Figure 3). Many in Malawi felt that these price rises were orchestrated by private traders. On August 19, the Government of Malawi announced a ban on private maize trade, then in September instructed traders to operate within the official floor and ceiling price of 45,000 kwacha (USD 316 per tonne) and 52,000 kwacha (USD 366) per tonne.

Figure 3. Retail maize prices, Blantyre vs. import parity from South Africa, 2000–2009



Source: Ministry of Agriculture monthly price bulletins for retail maize prices; SAFEX and hauliers transport rates for import parity prices.

However, market prices were far above this level and many traders simply stopped buying grain. The Government then arranged a contract with one large trader to supply maize to ADMARC at prices well above the ceiling price.

There is increasing speculation that the official government maize production forecasts may have been overestimated (e.g., Dorward *et. al.*, 2008). Reduced confidence in official crop forecasts creates difficulties in determining whether formal imports are required. Evidence suggesting that the 2007 and 2008 Ministry of Agriculture maize production estimates may have been overestimated is based on three points:

(1) *Estimates of substantial informal maize imports from neighbouring countries:* While national maize production estimates for the 2007 and 2008 harvests were both far above national consumption requirements, imports from Mozambique and Tanzania have been streaming into the country almost continuously since January 2004 when the Famine Early Warning Systems Network (FEWSNET) began monitoring informal cross border trade in the region. According to FEWSNET, Malawi has been a net importer of maize in virtually every month, importing 59,000 tonnes of maize in the 2007/08 season through informal cross-border trade flows. In the first 6 months of the 2008/09 season alone, Malawi has imported over 55,000 tonnes of maize (FEWS Net 2008a). In 2007, the Government of Malawi did export roughly 300,000 tonnes of maize to Zimbabwe, but with the apparent consequence of causing rapid price escalation to unprecedentedly high levels in late 2007 and early 2008 as shown in Figure 3.

(2) *Maize prices in Malawian markets have, for most of the 2007/08 and 2008/09 marketing years, exceeded those in nearby regional markets in Mozambique, Tanzania, and Zambia.* At certain times, such as late 2008, Malawian prices have been at least USD 50 per tonne higher than market prices observed on the other sides of the border. In early 2008, after the government exported maize to Zimbabwe, Malawian prices surged over USD 400 per tonne, exceeding those in the neighbouring Zambian and Mozambique markets by USD 100 per tonne. By contrast, Malawi maize prices over the 2000–2007 period have averaged only USD 147 per tonne in Lilongwe and USD 164 per tonne in Lunzu/Blantyre, and it is difficult to explain how official estimates of a record maize harvest could coincide with price levels over twice as high as long-term average prices.

(3) *Rationing of maize by ADMARC:* reports in Malawi's newspapers and focus group discussions with farmers in Central and Southern Malawi in 2008 (Reuters, 2008; Jayne *et. al.*, 2009) reveal frequent stock-outs and rationing of maize sales by ADMARC in both 2007 and 2008. The combination of maize shortages at ADMARC depots, continuous net imports of maize from neighbouring countries, and price levels in Malawi that are higher than those of regional neighbours all suggest that official maize production estimates in recent years have been somewhat overestimated.

The likelihood of food deficits in the 2008/09 season was manifesting in the form of rapidly rising food prices in late 2008. NGOs and World Food Programme (WFP) have indicated that they were unable to source maize in Malawi for school feeding and relief operations because they are forced to tender at prices below 52 kwacha per kg, a level at which both large traders and ADMARC were refusing to sell. Relief organizations could not request financial support for relief food purchases without a formal recognition of a food problem, which is politically difficult given that the President of Malawi has received international acclaim for his success in turning Malawi into a surplus food producer. Consequently, social entitlement programs were undermined by the continued price regulations, while relief food operations were at least temporarily impeded. In early October, 2008, the Malawi Vulnerability Assessment Committee released a report estimating that 1.5 million people

were vulnerable to food insecurity, as many rural households had run out of maize and were forced to purchase their residual food requirements at prices that were extremely high. According to interviews with traders in late 2008 and mid 2009, applications for import licenses were rejected on the grounds that Malawi had sufficient maize supplies, even as prices especially in the southern parts of the country continued to soar over USD 450 per tonne, well above the cost of importation from South Africa.

6. IMPLICATIONS FOR STRATEGIES TO MANAGE FOOD PRICE SPIKES IN BASIC FOOD COMMODITIES

In much of Eastern and Southern Africa, food markets continue to be plagued by a high degree of uncertainty and ad hoc government entry into and retreat from markets, despite official policy pronouncements which are largely inconsistent with actual state behaviour. These inconsistencies give rise to problems of credible commitment regarding governments' policy statements, and hence create risks and costs for private traders. The high degree of policy uncertainty and control over trade impedes private investment to develop access to markets and services for smallholder farmers.

Many countries in eastern and southern Africa have continued highly discretionary market and trade interventions of various types, and hence an empirical assessment of these countries' food market performance since the 1990s reflects not the impacts of unfettered market forces but rather the mixed policy environment of legalized private trade within the context of continued strong government operations in food markets. There is widespread agreement that this food marketing policy environment, however it is characterized, has not effectively supported agricultural productivity growth for the millions of small farmers in the region.

Local banks also tend to withdraw from lending to the sector and allocate most of their investment capital to relatively safe and high-interest government bonds. In these ways, there is still a great deal of sectoral reform to be gained in Africa, not necessarily to liberalize private trade but to unencumber it from the risks and high costs posed by unpredictable government actions in food markets.

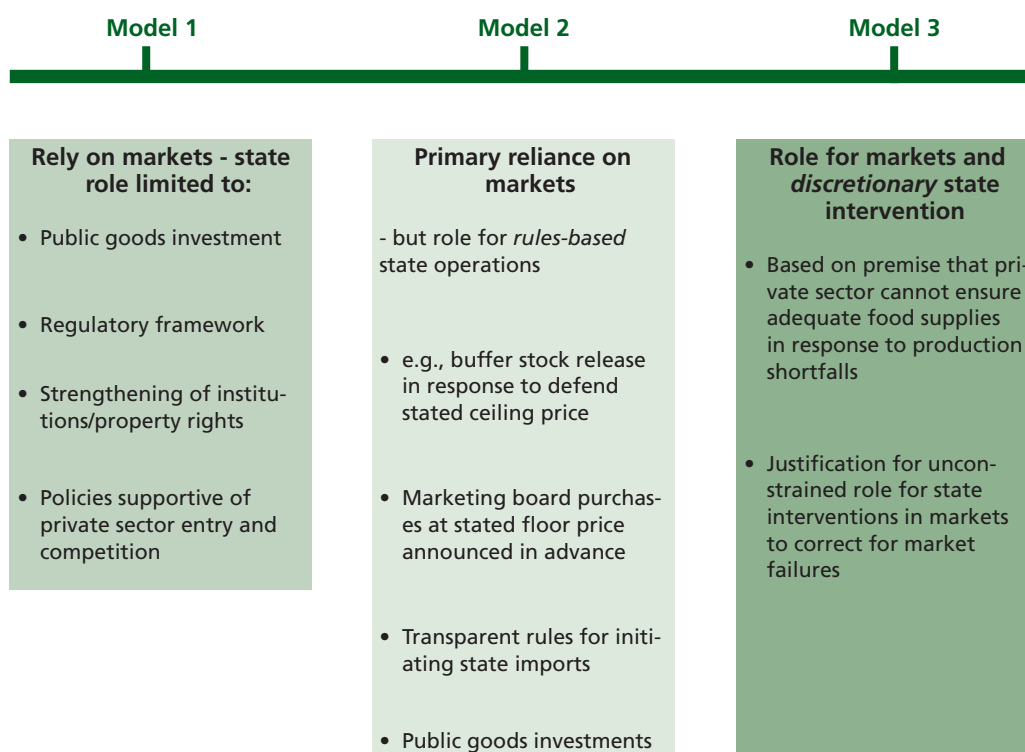
Three competing models have dominated policy discussions in Africa over the past decade regarding the appropriate role of the state in staple food markets (Figure 4):

Model 1: State role confined to provision of public goods to strengthen markets:

This approach relies on the private sector to carry out the main direct marketing functions – purchase/assembly from farmers, wholesaling, storage, transport, milling, and retailing. The role of the state is confined to provision of public goods: market rules and regulations, physical infrastructure, regulatory oversight of finance, market information, investment in new technology, organizing farmers into groups for means of reducing costs and risks of accessing finance, inputs, and marketing. This position is close to the “Washington Consensus”, which is now generally out of favour.

Model 2: Rules-based state interventions to stabilize market activity: This approach also relies on markets to carry out most of the direct food marketing functions, but the role of the state is expanded to include direct marketing operations, especially in the arrangement of imports, the management of food buffer stocks, and release of stocks onto markets when prices exceed a publicized ceiling price. The rationale for state operations is based on the premise that markets fail in some respects and direct rules-based state

Figure 4. Competing visions of staple food market development



operations are necessary maintain food prices within reasonable bounds. The defining feature of Model 2 is that there is precommitment: the rules governing state operations are determined in advance, publicized, and followed in a non-discretionary manner. This approach appears to be favoured by many technical analysts.

Model 3: Discretionary state intervention to provide state with maximum flexibility to achieve state policy objectives: The defining feature of this model compared to model #2 is that state operations are not confined to pre-committed rules that would constrain the state's ability to intervene only when these intervention criteria are met. Most governments in eastern and southern Africa are essentially following Model 3 and have done so from the start of the liberalization process. In practice, Model 3 has provided a highly unpredictable and discretionary approach to grain trade policy, commonly imposing export and import bans, variable import tariffs, issuing government tenders for the importation of subsidized grain, and selling their grain stocks to domestic buyers at prices that are unannounced in advance and often far below the costs of procuring it.

Therefore, in spite of the widespread perception that African governments have comprehensively adopted food market liberalization programmes, in reality the agricultural performance of many countries since the 1990s reflects not the impacts of unfettered market forces but rather the mixed policy environment of legalized private trade within the context of extensive and highly discretionary government operations in food markets. Markets may be officially liberalized, but their behaviour and performance are profoundly affected by discretionary interventions by the state.

There are very few examples of Model 1 for staple foods to examine in Africa or perhaps anywhere for that matter. The rationale for Model 2 is that well executed parastatal price stabilization operations can in theory put an upper bound on food prices and also protect against downside price risk by defending floor and ceiling prices through stock

accumulation and release onto markets. Successful implementation of Model 2 requires that the marketing boards possess a great deal of technical and management skill.

The weaknesses of Model 2 are that (1) given the long history of ad hoc state intervention in food markets, it is not clear whether Model 2 could be regarded as a credible policy; and (2) given constraints on available government funds for agriculture, spending on expensive government operations in food markets reduces the amount that can be spent on public investments that could potentially earn a higher social return.

Despite being the most common approach for the role of government in food markets, Model 3 is clearly vulnerable to lack of trust, cooperation and coordination between the private and public sectors. A discretionary approach to government operations creates great risks for private sector and tends to impede the private sector from performing functions that it would otherwise do more confidently under Models 1 and 2. The poor performance that results from this high degree of uncertainty and lack of coordination is often attributed to market failure, but a strong case can be made that the more central and underlying causes are chronic under-investment in public goods and a lack of credible commitment in the policy environment, leading to low levels of trust and coordination among public and private sector actors in the staple food systems.

Although price stabilization could in theory have important benefits for producers and poor consumers, along the lines of Model 2, these benefits do not appear to have been successfully achieved because they have been pursued more along the lines of Model 3, i.e., unpredictable and untimely changes in import tariff rates, ad hoc restrictions on private importation, etc. In fact, price instability appears to be greatest in the countries where governments continue to rely heavily on marketing boards and discretionary trade policies to stabilize prices and supplies (Chapoto and Jayne, 2009). Maize price instability in countries like Malawi and Zambia are extremely high despite the persistence of these government operations. By contrast, the operations of Kenya's maize parastatal have reduced price instability (Jayne, Myers, and Nyoro, 2008). While it is difficult to estimate the counterfactual – i.e., the level and instability of food prices that would have prevailed over the past 15 years in the absence of these government operations – there are strong indications that at least some aspects of government interventions in food markets have exacerbated rather than reduced price instability for both producers and consumers.

Concrete guidance

1. When early warning estimates predict a need for large import quantities, remove tariffs soon enough to allow traders to import over a sufficiently long time period to avoid transport capacity constraints and domestic stockouts.
2. Expand transport capacity e.g., rehabilitate Kenya rail system. If this were done prior to 2009, maize imports could have arrived in greater volumes much faster in early 2009 and pushed food prices down faster.
3. Review the rationale for denying import licenses when applied for by traders.
4. Consider the costs and benefits from the standpoint of governments of transitioning from discretionary trade and marketing policy (Model 3) to adherence to more systematic rules-based policies (Model 2). As concluded earlier, nurturing credible commitment in with regard to trade policy is likely to promote market predictability and therefore lead to greater supplies and price stability in food markets during times of domestic production shortfalls.

5. Consider whether current proposals for international stockholding would be effective in the presence of domestic transport capacity constraints. International physical or financial reserves would not be able to relieve localized food production shortfalls unless local transport capacity is adequate to absorb sufficient imports within a concentrated period or unless import licenses are provided or the state carries out or contracts for the importation from the international stock source.

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