

The Scope for International Cooperation to Manage Food Price Volatility:

*A Short Primer*¹

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Introduction

What does price instability have to do with food security? It is widely agreed in the development community that, in general:

- 1) Price *spikes* hurt poor consumers;
- 2) Price *collapses* hurt farmers; and
- 3) Price *risks* reduce investments, including by smallholder farmers for agricultural modernization.

But my own work suggests that food price instability also has a deeper and more insidious impact: it slows down economic growth and the structural transformation that is the pathway out of rural poverty. Thus food price instability really hurts the poor in both the short run and the long run.

Consider a very simple model of food security that focuses on the *short run* versus the *long run*, and on the *macro* level (of policymakers) versus the *micro* level (of household decision makers) (see Figure 1). When the global economy is reasonably stable, and when food prices are well behaved, policy makers can concentrate their political and financial capital on the process of long-run, inclusive growth. Keeping the poor from falling into irreversible poverty traps is easier and less costly in a world of stable food prices, and the poor are able to use their own resources and entrepreneurial abilities to connect (via the small horizontal arrow) to long-run, sustainable food security for themselves.

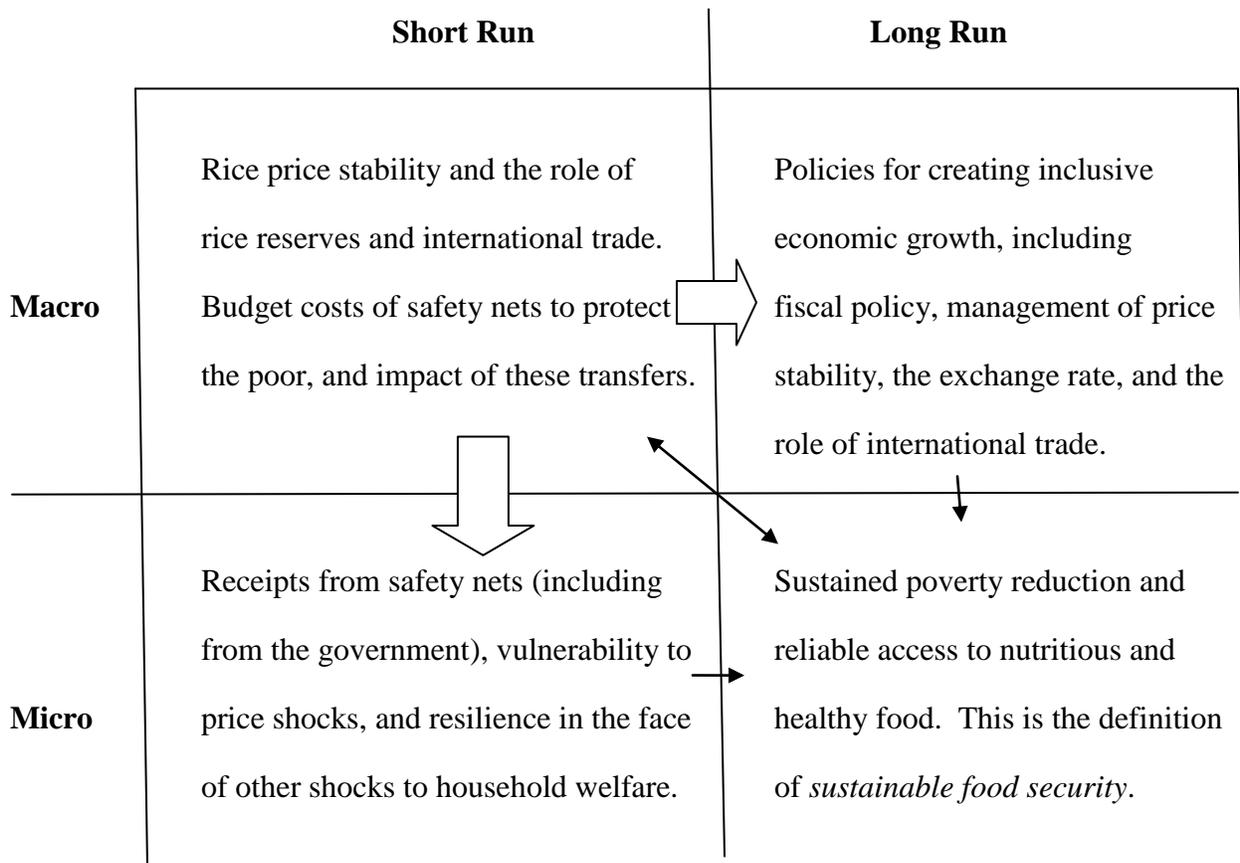
If the food economy is highly unstable, constantly in crisis, policymakers spend all of their time and budget resources in the “upper left” box, trying to stabilize food prices and provide safety nets for the poor. During food crises, vulnerable households often *deplete* their human and financial capital just to stay alive. This is the world of poverty traps and enduring food insecurity. We are also trapped in short-run--macro and humanitarian--*crisis management*.

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With success in achieving the objectives in the upper right and lower left boxes, market forces gradually—over decades—bring the poor above a threshold of vulnerability and into sustained food security (connecting macro to micro and short-run to long run). The goal is to get to the “lower right” box where households have sustainable access to food in the long run. That is, they are food secure.

Figure 1. Basic Framework for Understanding Food Security Issues in Asia



How do we break out of these traps? Franck Galtier and his colleagues at CIRAD in France have designed a simple framework to think about managing food price instability. It builds on two critical distinctions: first, between *preventing* food price instability and *coping* with the consequences of unstable food prices; and second, between the role of the *private sector* in each domain and the *public sector*. Thus there is a 2x2 matrix with 4 cells -- A, B, C and D (see Figure 2).

Figure 2. Approaches to managing food price volatility

	Prevent	Cope
Private	<p>“A” storage & transportation</p>	<p>“B” insurance hedging & futures markets</p>
Public	<p>“C” buffer stocks import/export controls</p>	<p>“D” safety nets</p>

With the rise of market fundamentalism since the mid-1980s, most donor efforts have concentrated on A and B measures, and on D measures when food crises still erupted (which they did, despite efforts in the A and B arenas). In view of the relative lack of success with the ABD approach, the issue is whether approaches to “C” might work, especially to complement investments in the ABD arenas. Are there *public interventions* that could stabilize food prices?

The answer depends on the level of action: Local, national, regional and/or international. Although most analytical attention focuses mainly on the distinction between national and international actions, examples exist where farmer organizations at the local level and regional bodies such as ASEAN+3, for instance, have engaged in price stabilization initiatives.

General issues facing price stabilization efforts

Within these four levels of action, five main issues are relevant.

- 1) *Where* is price instability a problem?

At the local level, highly unstable farm gate prices are a significant burden to small farmers seeking to invest in modern agricultural techniques and raise their productivity. Consuming households (and many smallholder farm households are net consumers) are obviously the locus of burdens from high food prices and especially from price spikes.

At the national level, the concern is for price stability in major urban markets and is often the focus of action by macro policymakers.

At the international level, the concern is for the level and stability of food prices from the major exporters, and the possibility that export barriers might prevent access to food by importing countries in times of rising prices.

2) *Which* commodities need more stable prices?

Three categories of agricultural commodities might be considered for stabilization activities: food staples, cash crops and perennial tree crops. Prices of cash crops are a real concern to farmers but have relatively little impact on consumers—perhaps onions in India and red chili peppers in Indonesia are exceptions. Perennial tree crops present special financing problems because of the long time horizon for the investment to start to pay off, and there is very a sharp distinction between short-run marginal costs and long-run average costs. But price variability has little impact on consumers—perhaps coffee in Brazil and the United States are a minor exception.

Accordingly, recent emphasis has been on price stabilization techniques for the major staple food grains, especially rice, wheat and maize. Although these commodities have much in common because they often form a large share of energy input among the poor, the world rice market behaves very differently from the world markets for wheat and maize. There are other food grain markets with their own unusual trading regimes: cassava, millet and white maize, for example, often behave more like “non-tradable” commodities than the tradable commodities with large, liquid international markets. Any efforts to stabilize food grain prices will need to recognize the special characteristics of individual commodities.

3) *What* instruments are available to stabilize food prices?

In general, there are three main categories of stabilization instruments: border (trade) controls, buffer (reserve) stocks, and regulation of financial markets involving agricultural commodities.

Border controls are a national issue because nations are defined by their borders. Economists do not like political borders very much because they impede the free flow of goods and services (and hence reduce the “gains to trade”), but the nation state is the main modern actor in many areas of economic, political and diplomatic initiatives. Borders, and border controls over trade, are a reality. The WTO seeks to impose disciplines on what border controls are legitimate, and agriculture has been included in those disciplines since the Uruguay Round, but the food crisis in 2007/08 revealed a serious asymmetry in how the WTO approaches border controls for food grains. Virtually all of the trade disciplines, and all of the current negotiations under the Doha Round, refer to import barriers rather than export controls. There is now wide agreement that export controls on food grains have been a significant source of price instability. The asymmetry of trade discussions should be rectified, but it is difficult to imagine grain exporting countries

agreeing to significant restrictions on their ability to control exports as a means of stabilizing their domestic food prices. Food security is simply too important as a political mandate for national leaders to forgo this policy instrument. Only significantly more stable world grain markets are likely to change this reality—an obvious challenge in the face of export barriers.

Large reserves of grain, at whatever level, have the obvious advantage that they can be drawn on when harvests are damaged or there are surges in demand. Large reserves tend to hold price levels down as well, although there is a clear endogenous relationship, explained by the theory of supply of storage, between expectations of price changes and levels of stocks held by the private sector. The issue is whether the public sector should be holding reserve stocks of grain above and beyond the willingness of the private sector to hold stocks (and the subsequent willingness of the private sector to hold these stocks in the presence of public stocks).

Holding public reserve stocks faces three key issues: their *costs* (and who should pay), *monitoring* the level and quality of stocks (and who should manage them), and *enforcement* of agreements to buy and release stocks according to some transparent rules. Each of these issues has been difficult to resolve even in the case of national stocks. There is virtually no experience at the international level of procuring, managing and releasing reserve stocks on behalf of an agreed protocol to stabilize grain prices. The experience of using Japanese “WTO” rice stocks in 2008 as an external supply source to prick the rapidly rising spike in world rice prices was clearly a unique episode (and even then the stocks were never actually released). Very serious doubts exist that any internationally viable scheme of holding reserve stocks of grain for stabilization purposes could be agreed and implemented (but see the specific discussion below).

Regulation of financial markets for agricultural commodities has been vigorously discussed, especially within the context of the French chairmanship of the G-20 in 2011. Attention is focused on two possibilities: re-imposition of position limits on speculative positions for important food commodities traded on futures markets (such as existed before the financial deregulations in the 1990s), and a “Tobin-tax” on each financial transaction to slow the emergence of speculative bubbles. The difficulties with either approach are clear—many of the financial transactions in commodity markets do not actually take place on organized exchanges where regulators can see what is happening, no single market could initiate such regulations unless others around the world did as well, and there is no experience with taxing financial transactions of this sort. Still, it is recognized that the “financialization of food commodities” is a relatively recent and rapidly growing phenomenon and urgently needs more research and understanding.

4) *How* can stabilization interventions be governed?

The issue is important at three different levels (four, if the regional level is somehow distinct from the international level because of greater commonality of interests).

At the local level, especially for farm or community organizations, governance would seem to depend on active participation and “voice.” The great advantage of local initiatives, of course, is precisely their ability to be responsive to local conditions and aspirations. General guidelines on how to manage them are probably not very useful.

At the national level, democratic processes are widely thought to be the basis of good governance generally, and should provide appropriate feedback to national leaders on how well they are doing in managing the country’s food security. Still, it is important for outside analysts, donors and the private sector to realize that food security is inherently a political issue subject to political decision making. It is certainly desirable that good technical analysis, especially economic analysis, be brought to bear on these decisions, but history has shown how difficult it is to make such analyses relevant and implemented.

At the international (and regional) level, negotiations informed by transparent technical rules would seem to be the best way forward. But there is deep skepticism that such negotiations can be successful. Even within ASEAN, for example, the interests of Vietnam and Thailand diverge sharply from those of the Philippines and Indonesia.

5) *How* do we evaluate success or failure in stabilizing food prices?

At the local level, the basic issue is whether sustained gains are seen in agricultural productivity on small holder farms. Of course, many other ingredients are needed for “getting agriculture moving,” but a major rationale for stabilizing commodity prices at the farm gate is to enhance the profitability of these other investments. The feedback from success at this level is also critical: nothing would improve the outlook for food security more effectively than rapid increases in farm productivity, especially for staple food crops grown by small holders.

At the national level, success in stabilizing food prices is likely to be seen primarily in greater political support for the government that gets credit, and ultimately in a more stable investment climate that should stimulate economic growth. Although the political payoff is likely to be primarily in the short run, the contribution to economic growth will be apparent to economic historians, and to the country’s consumers as they gradually escape from poverty.

At the international level, if a price stabilization accord can be agreed and implemented, success will almost certainly have to be measured using technically sophisticated but transparent methodologies that are part of the initial framework. Cost-benefit analysis is a powerful tool when stakeholders agree on the methodology and the result.

Moving the agenda forward

Reducing food price volatility is likely to be a highly specific process—depending on commodity, country, and global market conditions—but countries should be encouraged to engage in this process, NOT discouraged. It is also important to recognize the unique

characteristics of the world rice market. Rice has not been “financialized” to a significant extent, but there continue to be speculative hoarding episodes driven by widespread expectations of scarcity and surplus. Still, history demonstrates that rice prices within many Asian countries *can* be kept reasonably stable with respect to world prices. There are often spillovers from the actions undertaken by countries to stabilize their domestic prices, and these spillovers increase price instability in world markets. A little-researched topic is how to *minimize* the impact of these spillovers, or *cope* with them on a country-by-country basis, rather than to follow the standard policy advice, which is to *avoid* the actions altogether, and thus avoid the spillovers in the first place. *The standard policy advice turns out to be politically impossible in times of turbulent markets.* Is there a better alternative?

Three things would move this agenda forward:

First, we need a serious new research program on the benefits and costs of stabilizing food prices *within domestic economies*, including a focus on implementation of policy, management of food logistics agencies, and instruments to control corruption in these agencies. We would know a lot more about these topics if we had spent the same resources answering these questions as we have spent over the past three decades in estimating the gains from free trade in agriculture.

Second, we need serious new confidence-building measures to renew trust in the world rice market. Very severe damage to this trust was inflicted during the 2007-08 food crisis, mostly because of the Indian ban on exports, the on-again, off-again ban on Vietnamese rice exports, and open talk in Thailand of withholding stocks from the market and creating an “OREC,” or Organization of Rice Exporting Countries, to boost prices in the world market. Still, there is plenty of blame to go around in explaining the growing political distrust of the world market for rice. Important importing countries, such as Indonesia and the Philippines, speak publically of their desire to end “dependence” on supplies from the world market. Such rhetoric does not make them a market that exporting countries can trust (although this rhetoric also has little short-run impact on rice traders, who tend to judge market impact from actions rather than political statements).

This retreat into autarky comes at a very high price to economic efficiency and the welfare of poor consumers. It makes the world market even more unstable and less reliable. Is there anything we can do to re-build confidence and trust in international trade in general and in the world rice market in particular? Any confidence-building measures will need to involve both exporting and importing countries, *acting in their own self-interest*. One possibility is a country-by-country investment in greater rice reserves to cope with *shocks* to rice supplies, while gradually increasing the use of trade to *lower costs* of rice consumption. A higher level of stocks does not alter the requisite flow of rice from producers to consumers, but it does create a buffer against interruptions to that flow. Thus:

Third, we need larger rice reserves at four different levels of the global rice economy—those held by the private sector, in small importing countries by the public sector, in large rice producing and consuming countries held publicly, and internationally.

Most of the rice stocks in the global economy are held by the private sector—farmers, traders, processors, retailers, and consumers—to even out seasonal production patterns and to keep trade pipelines flowing smoothly. Few private stocks are held to even out inter-annual price fluctuations, but the pipeline stocks carried across crop-years are probably equal to a month or two of consumption, a considerable quantity. With greater price instability expected in the future, and greater uncertainty about the reliability of supplies in world markets, optimal (profit-maximizing) levels of privately held rice stocks will increase. Although we know little about the actual levels of these stocks, or the behavioral parameters that affect them, even the most basic models of supply of storage suggest there will be a significant increase in privately held rice stocks going forward. Of course, if publicly held stocks succeed in stabilizing world rice prices, privately held stocks will then gradually be drawn down.

A completely overlooked potential for the private sector to provide greater stability of rice prices through stock management comes from the “supermarket revolution” in Asia. Before the turn of the Millennium, supermarkets in the region were niche players catering mostly to the urban middle and upper classes. Now they provide—via modern supply chains—perhaps a third to as much as half of the rice consumed in East and Southeast Asia, with the share growing rapidly (although even the rough numbers are not really known).

The potential of modern supermarkets to stabilize rice prices comes from the large market share of individual companies under central management control. If consumers *desire* stable food prices, astute supermarket managers can *supply* it. This potential of supermarkets to stabilize prices contrasts with traditional small, competitive, retail rice markets, where prices change regularly on the basis of daily supply and demand. Historically, “food price stability” has been a *public* good because no private entity found it profitable to provide it. The rise of supermarkets may mean that stable food prices could become primarily a *private* good. This would truly be a revolution in the food industry.

Next, for similar reasons, small countries that rely heavily on imports for their rice supplies, such as Malaysia, Singapore, or Brunei, will find it desirable to increase the level of stocks held publically, or (as in Singapore) held privately but with levels determined by public regulations.³ Even a modest increase in rice stocks in these countries will increase confidence that the world market remains their best long-run source of supply (which, of course, it is).

³ To obtain a license to import rice into Singapore, the trading company must agree to hold three months of normal consumption in storage. In view of the increased instability and uncertainty in the world rice market, expanding these stocks to 3.5 or even 4 months of supplies probably makes sense. Of course, higher storage costs will be incurred and these will have to be paid by consumers.

Large countries face a somewhat different situation. Because of the sheer size of their *domestic* rice economies, actions to increase production, reduce consumption, or alter the size of stocks held by public agencies will also have a noticeable impact on the *international* rice economy. These countries certainly include China and India, probably Indonesia, and possibly the Philippines and Bangladesh.⁴ Larger rice reserves in these countries are probably desirable for reasons of domestic food security, but they will also alter the perception of global observers about the adequacy of worldwide stocks. That is, *larger rice reserves in these countries will have a positive spillover impact on the global rice economy by stabilizing price expectations*, and thereby actual rice prices. An important question for the international community, especially the major donors, is whether any actions can be taken to encourage the gradual build-up of rice reserves in these large countries.

A Role for the International Community?

Finally, the hardest question is whether there is any role for international ownership and control of rice stocks as a means to stabilize rice prices on global markets. Ever since the publication of the classic Newbery and Stiglitz volume, *The Theory of Commodity Price Stabilization*, in 1981, the answer has been a clear “no.” Both history and theory demonstrate that it is impossible to stabilize the price of a commodity in world markets for long periods of time—from cocoa to coffee to copper to tin to wheat to whatever—using internationally managed buffer stocks. Budget constraints and the asymmetry of storage—it can never be negative—mean that stochastic variations in supply or demand will eventually overwhelm the ability of a buffer stock to stabilize prices. No international commodity agreement (ICA) with binding provisions has been negotiated since the Newbery and Stiglitz volume.

Still, it is important to address a more modest question. Would the availability of a limited amount of rice under international control help stabilize *expectations* about the behavior of world rice prices? If expectations can be stabilized, panicked behavior on the part of multitudinous participants in the world rice economy could be sharply reduced, with self-reinforcing price bubbles and collapses made less frequent and less extreme. The availability of international stocks would not need to keep rice prices within some legally specified band, but could be useful if world rice supplies suddenly tighten and prices threaten to spike. Is this more limited objective possible?

Four Possibilities for Holding International Rice Stocks

There are four levels at which this question should be addressed. First would be within Asia: the ASEAN + 3 (which includes China, Japan and South Korea), or possibly a new ASEAN + 6 (to include also India, Bangladesh and Pakistan) would include nearly all of the world’s major rice

⁴ Thailand and Vietnam, as the world’s leading rice exporters, carry substantial stocks both seasonally and as part of their normal pipeline for regular deliveries to their customers. They are unlikely to need larger stocks for food security reasons.

importers and exporters (except the United States), not to mention about 90 percent of world production and consumption. An expanded ASEAN rice buffer stock has been under “active” consideration for years, with little discernible progress. How do we stimulate such progress, beyond the steps underway to improve information flows and policy coordination? Would an agreement to focus on a specific quality of rice, say 25% broken long-grain rice, help build confidence that the reserve could help meet demand from the poorest consumers when prices spike?

Second, by an accident of international trade negotiations and strong protection of domestic rice producers, Japan holds over 1.5 million metric tons of high quality “foreign” rice that it imports under its WTO agreement but which it refuses to sell to domestic consumers. The *potential* availability of this rice in May of 2008 was sufficient to prick the rapidly exploding rice price bubble at that time, once the stocks were put “in play” by U.S. policymakers in private negotiations with Japanese officials. Would it be possible to manage these Japanese stocks with a more active concern for movements in international rice prices?

Third, could Australia, under AusAID auspices, use its mostly redundant rice industry to build up stocks of rough rice from surplus countries in Asia (shipping it to Australia in otherwise empty cargo carriers that go up to Asia filled with coal, iron ore or bauxite) and then offer these stocks, after milling, back to the world market when rice supplies get tight? The Australian rice industry has an excellent record of managing rice stocks and shipments and has little vested interest in exploiting price movements on the international rice market. Could Australia provide an important international public good by helping to stabilize world rice prices?

Finally, the question inevitably comes up: can the international community itself commit to publically managed international rice stocks that would be an effective stabilizer of world rice prices? At the height of the world food crisis, IFPRI put forward a proposal to create “virtual reserves” of grain to dampen financial speculation on world grain markets. Whatever the merits of such grain reserves for wheat, corn and soybeans, they clearly will not work for rice. Without deep futures markets, and with less-than-transparent price discovery in the world market, virtual reserves for rice will not influence real participants in real transactions.

The historical record on managing an international commodity agreement, with fixed price bands and the ownership of physical stocks, is not encouraging, and it was never even tried for rice because of the difficulties of stock deterioration, quality variations, and poor information on the prices of actual rice trades. None of those problems has gone away. Probably the best that could be done from an international perspective is for the major donors interested in rice—the World Bank, the Asian Development Bank, USAID, AusAID, and perhaps the Bill and Melinda Gates Foundation, to agree on modest incentive payments to large rice consuming countries to store more rice, at the margin, than they would store under normal conditions. Knowledge of the size, location, and condition of such stocks (a necessary condition for receiving incentive payments to hold them) would be an important stabilizing element for participants in world rice trade, even if

the trigger mechanisms for stock release, domestically or internationally, were not enforceable by the international community.

The proposals here are incremental. They seek to *change the long-run incentives for stockholding behavior*, and to use increased stocks to *build confidence in the international market for rice*, which is clearly the most efficient source of supply for many countries. Because holding larger stocks will turn out to be very expensive, a scenario can be imagined where the larger stocks gradually build renewed confidence in the world rice market, prices become more stable, and stocks will then be reduced gradually as the reality of the fiscal burden sinks in.

The policy discussion here has been almost entirely about stocks and trade, with little discussion of policy initiatives needed in the spheres of production and consumption. There has been little discussion of access by poor households to rice—the basis of food security for individuals. Such a discussion would focus much more on the causes of poverty and approaches to reducing it in a sustainable fashion.

These are the truly important variables in the world rice market. Productivity growth in rice production has slowed visibly in the past two decades, and renewed investments in speeding that growth are urgently needed. Rice consumption patterns are changing rapidly, with consumption by the poor rising (often stimulated by subsidies) and consumption by the better-off, especially urban, households falling. The world rice economy, and the various domestic participants in it, is a dynamic system subject to shocks and self-reinforcing behavior that creates price spikes and collapses. This instability has enormous costs, economically and politically, to farmers and consumers. But Asia is considerably richer now than it was even a decade ago, and rice is no longer the overwhelming determinant of food security for most of Asia's consumers, or of income for its farmers. The new reality of a less rice-dependent Asia in purely economic terms means we should be able to do better for a commodity that still feeds two-thirds of the world's poor.