

Chapter 4 - What Role for the International Community?

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Obviously, managing domestic price instability is the government's responsibility. However, various considerations tend to indicate that some support from the international community may be needed:

1. The *governments of many developing countries lack reliable information on international markets.*
2. *Many developing country governments' resources are too limited to fund price stabilization policies or policies aiming to mitigate the effects of price instability (safety nets and other related D-instruments).*
3. Rising international food prices can reduce the currency reserves of importing countries (Sarris, 2010). For some countries, this may imply *rationing food imports*. For others, it can generate a deficit in the balance of payments and *a decrease in the exchange rate*, inflation, and a loss of purchasing power for consumers. This problem affects only countries with low currency reserves and/or countries for whom food imports account for a large share of the balance of payments.
4. The policies developed at the national level to reduce the transmission of international instability to domestic markets (e. g. variable levies on imports, export restrictions) are not always effective because of their budgetary cost and the difficulty some states have in effectively controlling their borders. Moreover, their use is bound by WTO rules. In addition, these policies can increase international price instability. In the case of crisis, restricting exports can cause *shortages* such as the one some importing countries experienced during the 2008 crisis. Policies that aim at insulating the domestic market narrow the international market and, as a consequence, make it more vulnerable to climate shocks. This can increase international instability and thereby increase countries' incentive to insulate their domestic markets (Keynes, 1942). This phenomenon has been seen since 2008 with the strong development self-sufficiency policies and land grabbing. Hence, there is a need for international rules to arbitrate between countries' need to protect themselves from international instability and the need to lessen the destabilizing effects generated by these policies.

These considerations lead to the conclusion that some actions at the international level must be considered to complement the actions at the national and regional levels. We will first present a brief historical analysis of how the problem of price instability has been addressed at the international level. Then, we will discuss what support the international community could provide in the coming years. We will distinguish between different types of support: the provision of public goods, transfers to the governments of some developing countries, and the setting up of international rules.

4.1. Historical Analysis of Price Volatility

International food price volatility has a history. Its characteristics (magnitude), its causes, and the solutions imagined to deal with it have changed over time. Food markets have undergone structural transformations that have changed the way international prices are determined and the role they play in balancing world production and consumption.

Since WWII, several attempts to regulate international food markets have been made by international cooperation structures. Initially, food markets were characterized by:

- widespread overproduction and/or production factor surpluses;
- a disconnect between domestic prices and international prices organized by agricultural policies; and
- a shared objective of national self-sufficiency (except, of course, for tropical products) that implied limited involvement in international trade.

Two radically different approaches followed one another.

The 1960s and 1970s were the golden age of international commodity agreements. The aim was to stabilize (actually support) international prices based on international stocks and/or export quotas. At this time, international cooperation was seen as a matter of dealing with how nation-state oligopolies coordinated the collective management of production surpluses. This was the very purpose of international commodity agreements.

From the mid-1980s to the mid-2000s, overproduction was still the problem, but the proposed solution was instead to organize a general and coordinated dismantlement of agricultural policies that isolated domestic markets from international markets. WTO negotiations were organized with this aim. Because of the increasing involvement in international trade (as exporters or importers), the disconnect between domestic and international prices was becoming increasingly costly for national budgets. Of course, international price stabilization (and price support even less) was not an explicit objective of the WTO negotiations. Yet, the liberalization process was expected to eliminate overproduction and thereby raise prices (one can recall the meticulous estimate of the impact of the WTO negotiations on international markets!). Moreover, an open world market was supposed to absorb production shocks easily.

More than twenty years later, the resulting situation is very different from what had been expected. First, the dismantlement of isolating agricultural policies is clearly incomplete. Some countries did it (the EU, the USA) but other—bigger and bigger—countries (China, India) did not. Second, overproduction did vanish, as illustrated by the low level of world stocks. But the current world supply and demand situation rises two questions:

- Is the current period still characterized by structural overproduction as it was during most of the decades following WWII? Are agricultural frontiers not nearing their end? Is the age of cheap energy not coming to a close? Are the booming Asian economies that generated an increase in food demand radically new?

- Is it really possible to ensure some international price stability without a degree of overproduction? Is overproduction necessary to have a volume of stocks that is big enough to “absorb” production shock?

It is still too early to elaborate a full interpretation of this renewed volatility. Two different and opposite interpretations can be adopted:

- The 2007/08 crisis can be seen mostly as a transition crisis signaling the strains generated by the incompleteness of the liberalization process. In some countries domestic prices are still too disconnected from international prices. Public agencies are still too active in food storage to allow private actors to invest in the business. Accordingly, liberalization must be pushed further.

- Alternately, the 2007/08 crisis can be interpreted as evidence that the liberalization process is not viable. No government can accept exposing its population to “foreign” instability, and international markets are intrinsically unstable. Accordingly, the crisis confirms that China’s and India’s refusal to link their domestic prices to international prices is relevant.

It would be very useful to discuss these two perspectives and reach a consensus on how to interpret the 2008 crisis in order to design policies to manage price instability. But building such a consensus will take time. We can assume that after a period of surpluses, we are entering a period of scarcity or, at least, of greater tension in international markets (booming demand from emerging countries, rising oil prices, etc.). The IPCC’s 4th report assumes that climate change will affect agricultural production, not only changing land use in each region of the planet, but also increasing instability. “It is very likely that hot extremes, heat waves and heavy precipitation events will become more frequent.” (IPCC, 2007.) In any case, 2008 was not an isolated incident, and international markets seem to have durably become more unstable. In such a context, what are the possible strategies and available or possible instruments to manage this instability at the international level?

Box 13 : Some Facts on the Evolution of International Wheat Prices during the 19th Century

Throughout the 19th century, wheat prices tended to converge and stabilize in the Atlantic economy. This is clearly illustrated by Tables 1, 2 & 3 that show current monthly wheat prices (in dollar per quintal) in New York and Liverpool. Table 1 shows the overall trend from 1800 to 1913, and Tables 2 and 3 show “enlargements” of Liverpool prices at the beginning and the end of the long 19th century.

Prices in New York and Liverpool show an obvious convergence. At the beginning of the century, prices in Liverpool were frequently double New York prices. Then, they tended to converge and become synchronized. O’Rourke and Williamson (O’Rourke and Williamson, 1999) have demonstrated that this price convergence could be seen in all of the Atlantic economy.

Moreover, price stabilization is remarkable. The phenomenon is particularly pronounced in Liverpool (see Tables 2 & 3). At the beginning of the 19th century wheat prices could double or be halved in a few months. By WWI, price volatility had been markedly reduced—to less than 25%. An astonishing stability could be seen between 1897 and 1907.

How can this degree of price stabilization be explained? The enlargement of the market can be mentioned, but it is certainly not the only factor. Various institutional innovations contributed. Cereal standardization, starting in Chicago in the 1850s (Cronon, 1991) helped to reduce substitution costs between origins and then helped to increase the number of suppliers. The creation of futures markets, which followed the creation of standards, and the building of telegraph networks lowered information and storage costs. At the end of the 19th century,

English wheat importers—like African rice importers at the end of the 20th century—may have adopted a price stability strategy to promote the consumption of imported food. Whatever the explanation, price stability prevailed in a time of victorious free trade when, at least in the United Kingdom, no public policy influenced price formation.

Table 1 : Monthly Wheat Price on the Liverpool and New York Markets 1800-1913

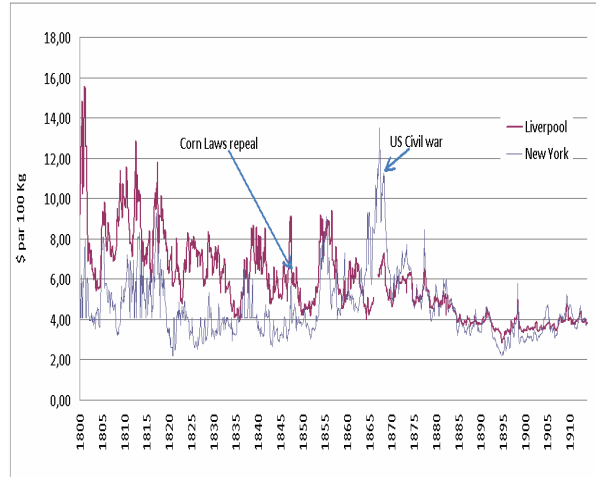


Table 2 : Monthly Wheat Price on the Liverpool Market 1800- 1820

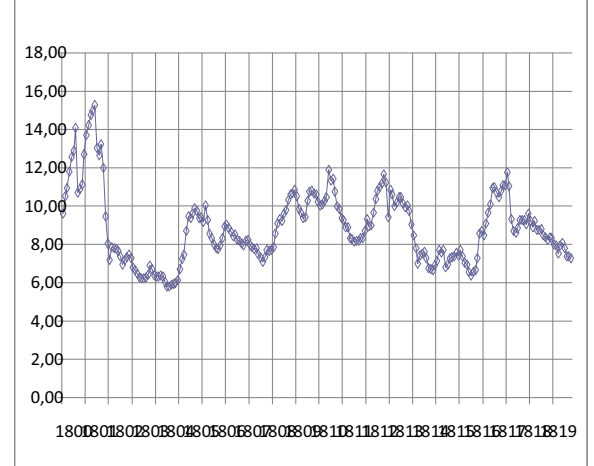
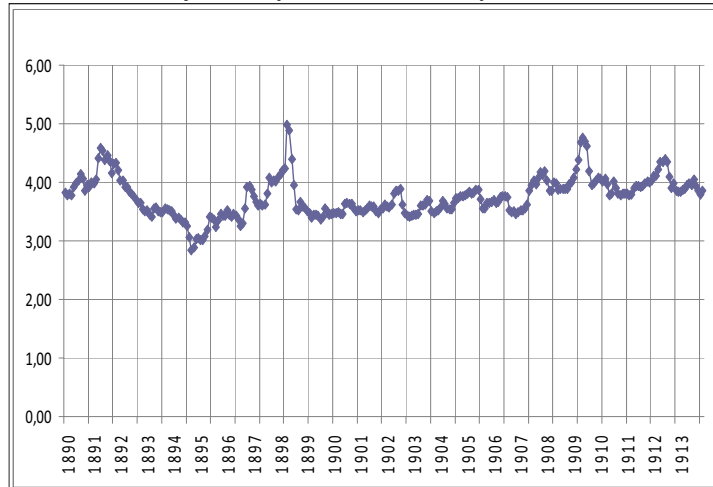


Table 3 : monthly wheat prices on the Liverpool market 1890-1913

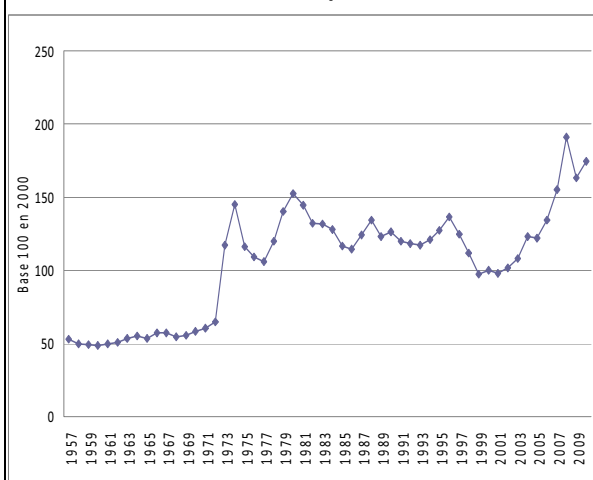


Source : The data used in this box come from David Jacks who produced an amazing compilation of wheat prices in the 19th century (see his internet site <http://www.sfu.ca/~djacks/data/publications/publications.html>)

Box 14 : International Food Price Volatility since WWII

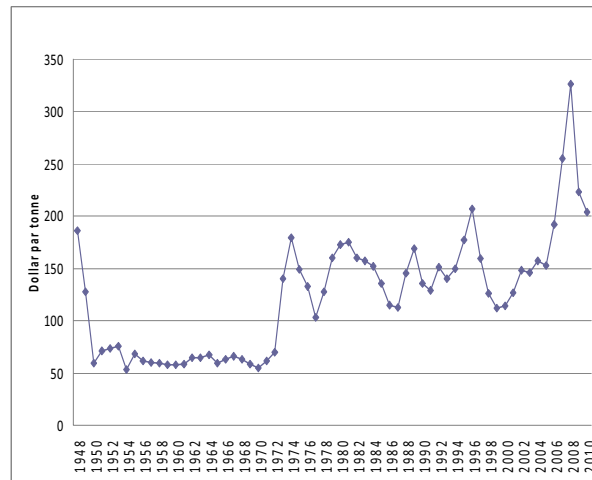
From WWII to the 1980s, food markets were characterized by the omnipresence of governments and a policy norm of domestic-centered food markets. Using different kinds of instruments (caisse de stabilisation, variable levies, export or import quotas, public purchases, food aid, etc.), governments organized an almost complete disconnect between domestic and international prices. Domestic price stability was adopted as an objective worldwide. Foreign trade was subordinated to attaining it. Exports and imports were synonymous with surpluses and deficits that needed to be eliminated to guarantee domestic market equilibrium. From this standpoint, domestic stability was guaranteed by transferring domestic instability to the international market. During this period, international markets operated like canal locks between national markets. They handled the transfer of products without calling into question the level and stability of prices in domestic markets. Despite the residual nature of trade (and despite the teachings of economic analysis), the international prices of most food products displayed marked stability from the end of the 1950s to 1972 (Tables 4 & 5). This is explained by the structuring of the international markets as hierarchic and/or co-operative oligopolies. Indeed, management overseen and centralized at the national foreign trade level gave the country (or nation-state) the status of basic unit on international food product markets. Furthermore, the mastery of foreign trade was accompanied by states' taking control of stocks, that is to say shifting market power from firms to states. In this context, practically all the international markets took on the structure of nation-state oligopolies

Table 4 : International food price index 1957-2009



Source : IMF

Table 5 : International Wheat Price Index 1948-2010



Source : IMF

Then, a number of cooperation features emerged in these oligopolies during the decade following the Korean War: the FAO Consultative Sub-Committee on Surplus Disposal, international agreements on wheat and coffee, the Food Aid Convention, the GATT regulation on dairy products, and so on. These institutions were usually based on a solidly established hierarchy between countries and the presence of an uncontested leader. The cooperation in product institutions was amply completed by the residual supplier strategies used by this/these dominant country/countries: USA-Canada wheat duopoly, USA for maize, soybean and rice, New Zealand on the milk market, Brazil for coffee, etc. To guarantee international price stability, these countries acted as residual suppliers and adjusted their exports to their competitors' exports and took on the world storage burden.

The early 1970s featured the start of a period of marked price instability on food product markets. This instability first took the form of a series of price leaps affecting all commodities markets one by one. Crises in demand (the oil producing countries, the USSR and China) have often been highlighted to explain this period of price tension. However, the exhaustion of the market leader countries' stabilization capacities does more to explain the large price hikes than sudden import demands. As was shown by subsequent events—in contrast with the alarmist diagnosis of the time—the shortages that occurred were not caused by an

increasing scarcity of global resources but by changes in the policies of the leader countries. The main reason for the low level of world agricultural product stocks at the start of the 1970s was the reversal in the (storage and production) policies of the leader countries that, from the end of the 1960s onwards, refused to cover the entire cost of stabilizing international markets.

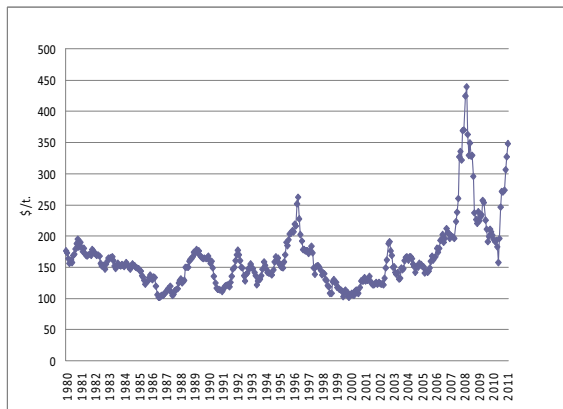
The change in the markets in 1982 (the date of the start of the recession in the United States and the international financial slump) from a situation of shortage to one of surplus—resulting from the fall in import demand—abruptly revealed this lack of a stabilizing mechanism and the disappearance of the safety net that had been provided by the storage policies of the leader countries. At this stage, the oligopolistic structure of the markets was not called into question, but most of the oligopolies were destabilized, whether they concerned tropical or temperate products. The start of the 1980s marked the beginning of fierce competition when new exporters (the European Union and the “New Agricultural Countries” such as Brazil, China, Thailand, etc.) joined the list of suppliers. International prices reflected this new situation immediately. Even though the surpluses were not as substantial as those of the 1960s, prices fell sharply on a scale unequalled since the depression in the 1930s. The fall in international prices came with a fragmentation of international food markets provoked by the differentiation of the price conditions offered by exporting countries. This differentiation obscured the very low level of the prices actually used in the transactions. For commodities such as wheat and coffee, actual prices varied by a factor of between one and two according to the destination.

In developing countries with no financial reserves, the fall in international prices caused the bankruptcy of numerous state marketing boards and triggered the wane of post-WWII state interventionism. For developed countries and their domestic agricultural market systems, the fall automatically resulted in a skyrocketing of the cost of support and revealed the mismatch between the “domestic-centered” model and the excessive involvement in foreign trade.

The opening of the Uruguay Round negotiations in 1985 marked OECD countries’ awareness of the impossibility of continuing with the domestic-centered model. Even though the Uruguay Round negotiations did not come close to achieving the total dismantling of the agricultural support mechanisms in developed countries, the tariffication principle has clearly called into question the disconnect between domestic markets and the international market: while domestic prices remained distinctly higher than international prices, they were now supposed to vary in line with world prices. This revision of agricultural policies negotiated in a multilateral framework took place at the same time as a more rapid, sudden withdrawal in the developing countries that had “adopted” structural adjustment policies. The reduction of import barriers and the closing of state marketing boards were much faster and more radical within this framework. Thus, a clear reunification of the world market (or part of the world market as we shall see) was accomplished from the mid-1980’s to the mid-1990’s.

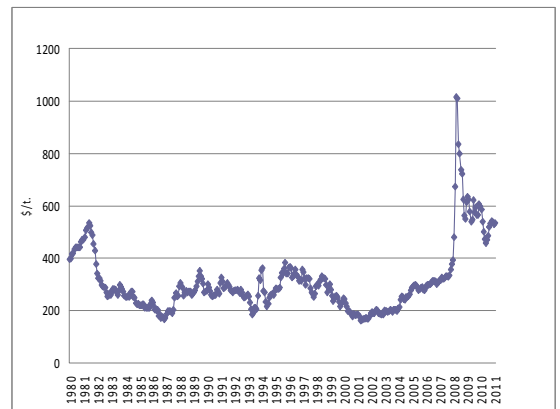
Then, a short period of international price stability began that could be associated with the end of the trade war brought about by the Marrakech agreement. But this stability (Fig. 6), particularly visible in the rice market (Fig. 7), was short-lived. From 2005 on, prices on most of commodities markets started to creep up; they then began to skyrocket in 2007, doubling or trebling within the space of a few months. The price explosion was immediately followed, in mid-2008, by a dramatic fall though they remained higher than they had been before the spike.

Table 6 : Monthly International Wheat Prices 1980-2010



Source : IMF

Table 7 : International Rice Prices (5% FOB Bangkok) 1980-2010

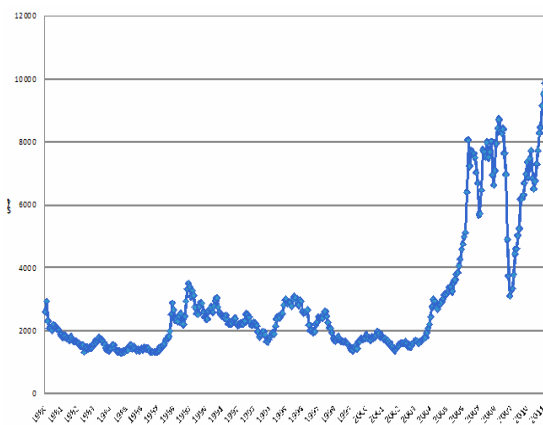


Source : IMF

In addition to its impressive scale, the current international food price volatility has two specificities :

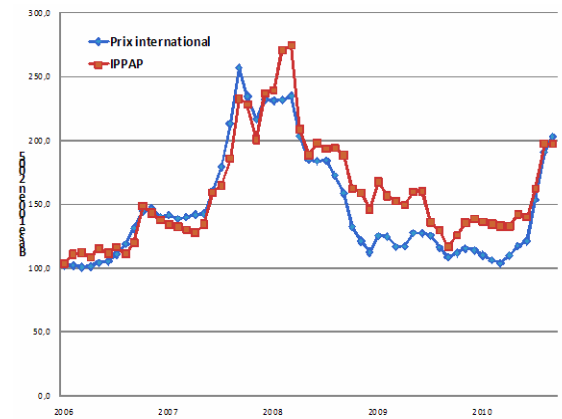
- It is part of a general destabilization of commodities markets, which is frequently illustrated by the oil market but that many other commodities—like copper (Fig. 8)—are also experiencing.
- As a result of liberalization policies, it was transmitted to many countries where farmers had for decades been sheltered from international price volatility. Thus, it was felt by many more actors than the previous periods of volatility. France is a very good illustration of such a country (Fig. 9). It should be noted that some countries, and not just the smallest (China and India for example, Fig. 10 & 11), have kept the disconnect from their domestic markets intact.

Table 8 : International Copper Prices 1980-2010



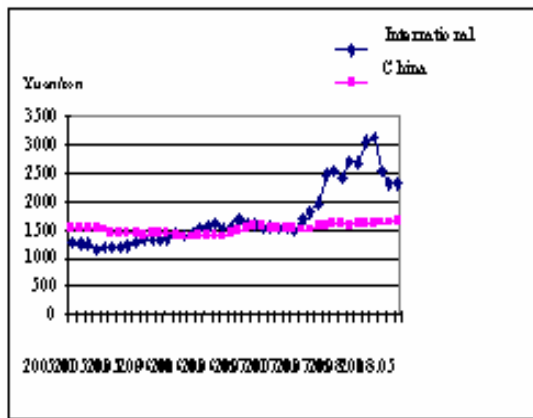
Source : IMF

Table 9 : Wheat Prices on the International Market and France's Domestic Market 2006-2010



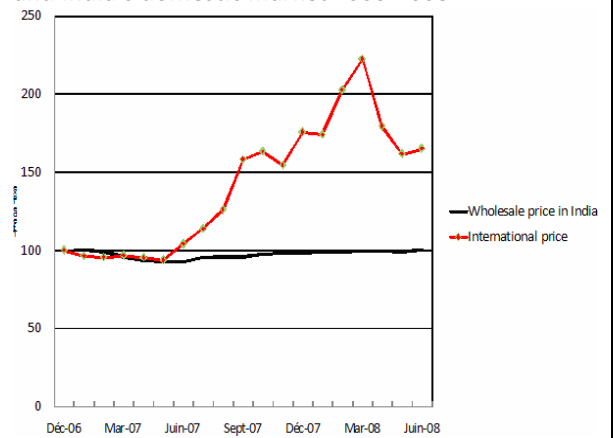
Source : IMF

Table 10 : Wheat Prices on the International Market and China's domestic market 2005-2008



Source : OECD

Table 11 : Wheat Prices on the International Market and India's domestic market 2006-2008



Source : OECD

4.2. What Can the International Community Do?

In order to discuss an agenda for the international community, it may be useful to distinguish between the three main functions of public action:

- the provision of public goods like information in order to improve coordination and decision-making;
- financial aid or transfers (from one country to another); and
- setting, monitoring and enforcing common rules for national policies.

a) The Provision of Public Goods

As far as price instability is concerned, the role of public goods is to allow for better operation of international markets by making them more transparent and by improving the quality of price expectations. Transparency can reduce endogenous instability (speculation, panics, cobweb effects, etc.). Hence, the public good that should be provided by the international community is **information to make the (physical and derivative) markets more transparent**. Speculative bubbles and panic dynamics are fueled by the lack of market transparency. As far as derivatives markets are concerned, the problem mainly affects OTC products. One solution could be to develop OTC standards and widely disseminate aggregated information on OTC activities. Regarding physical markets, some data are already disseminated widely for free by the USDA, the FAO, and the International Grain Council. However, the analyses of these data (provided by private companies) are often expensive. As a result, there is a lack of knowledge on the future evolution of market fundamentals (production forecasts, evolution of the agricultural and commercial policies of the main exporting and importing countries, and other prospective information). This information should be comprehensive enough to allow poor countries to estimate the evolution of import and export parity prices (this means that international prices should be included as well as exchange rates and freight costs). This information could be produced and disseminated by the International Grain

Council (for cereals) and/or by the FAO's Global Information and Early Warning System (both do so partially already). Moreover, many private and public operators, especially in developing countries, do not have a capacity for market intelligence, either because information on international markets is expensive or because they do not have experts able to analyze it. Technical support for national and regional Market Information Systems (MISs) is required in developing countries. MISs will improve private and public stakeholders' expectations and, by so doing, reduce speculation and panic behaviors on both derivative and physical markets (including government behaviors such as export bans).

b) Transfers

Transfers could solve the problems induced by the effect of international price spikes on the currency reserves of some importing countries (rationing of food imports, decrease in the exchange rate). It could also offset the lack of public funds necessary to manage domestic price instability.

Food aid. Food aid is a way to mitigate the effects of price spikes on low-income countries and vulnerable households. This tool refers to food aid in general with its different modalities: distribution of free food rations, cash transfers, targeted subsidies, vouchers, food for work, cash for work, etc. The objective is to allow low-income countries to maintain their import levels and allow poor and vulnerable households to maintain their food consumption levels despite price increases. This tool is, of course, necessary. But, since the Niger crisis of 2005, we know that this tool has proven itself to be insufficient to protect poor households from food insecurity (Michiels & Egg, 2008; Michiels et al., 2008; Blein & Egg, 2009). Moreover, it can cause market distortions in developing countries (food price drops that affect poor farmers).

Technical and financial support to the governments of developing countries to help them to use derivatives markets. The idea is to help the governments of developing countries hedge against price spikes on international markets. This has been proposed many times by experts (Faruqee et al., 1997; Dana et al., 2006; Sarris et al., 2010). Theoretically, it should work. But this tool has serious limitations. First, for some products (like rice), there are no relevant futures markets for hedging. Second, for other products, price hikes remain a basis risk in line with the fact that the price of imported food products is only partially correlated to futures prices (because of differences in quality). In practice, there is only one experience with such an anti-risk policy. In 2005, the government of Malawi bought a call option on maize from a South African bank (indirectly, this option was related to the SAFEX). The experience was presented as a success story: it allowed Malawi to import maize at a relatively low price compared to Zambia. However, in spite of its "success," this experience has never been implemented again by either Malawi or any other country. This experience also showed that strong public sector support is a necessary condition to allow governments to use derivatives markets: the government of Malawi received strong technical support from the World Bank and the cost of the call option was covered by DFID (Galtier et al., 2009, pg. 124).

Credit facilities. Credit from private stakeholders is not relevant in this case: countries are in deep trouble and need to receive credit very quickly. So, some public sector support is necessary. The IMF proposes two types of facilities: the Compensatory Financing Facility (CFF) and the Exogenous Shocks Facility (ESF). The first one (CFF) has

not been used since 2000 because of the very strict conditions for its use. The second one was used by a few countries in 2008 to mitigate the effects of international price spikes on oil and food products: Ethiopia, Kenya, Kirghizstan, Malawi, Mozambique and Senegal (FAO, 2010). According to some experts, these facilities are not sufficient and other credit facilities are necessary. For instance, Sarris (2009) proposed developing a Food Import Financing Facility (FIFF).

A public mechanism to stabilize the food import bills of specific developing countries (STABIMP). The idea is to offset the rise in food bills due to international price spikes. The STABEX negotiated by the EU and ACP countries could be its model. This tool (which could be called STABIMP) should target low-income and/or countries highly dependant on food imports.

An international fund to finance national or regional price stabilization policies in developing countries. To apply to this fund, the countries should comply with some governance requirements (a code of practices to guarantee the transparency and predictability of interventions).

Further research is needed to compare the performance of these tools. To a certain extent, they are complementary. Given the reluctance to use and the difficulty of using hedging tools, it is better not to rely on them alone. Moreover, an instrument that can help countries ex post (in the case of a price spike on the international market that generates a balance of payment problem) is needed. Therefore, there is a need for credit facilities or a STABIMP. These tools can be complementary if the countries that can apply to each of them are different. An international fund also seems necessary to allow poor developing countries to develop stabilization policies.

Whatever the tool, strong public sector support is needed, even for private tools. Hedging tools are B-instruments (theoretically private). But, as shown by the Malawian experience, strong public sector support (both technical and financial) is necessary to stimulate its use. Credit facilities are also B-instruments, but for countries in a difficult situation with regard to their balance of payments, the tools should be managed by a public institution (such as the IMF).

c) Setting, Monitoring and Enforcing Common Rules

The role of common rules is to reduce instability on international markets (i) by restricting destabilizing behaviors by states and private operators and/or (ii) by developing specific collective interventions to stabilize prices.

In the first category, we have:

Derivatives Market Regulation. Many measures can be implemented, the main ones being to establish position limits for non-commercial operators and tax derivatives transactions (a Tobin type tax). The first measure may seem better as it would not affect commercial operators (those who are in situation to use derivatives to hedge price risks) directly. It has also already been implemented (by the Chicago Board of Trade from the 1930s to the 1990s) and has proved to be effective to contain over-speculation and reduce the probability of bubbles. Other measures (linked more to the organization of derivatives markets) are also needed. For instance, it may be necessary to set up a market authority (when one does not exist) and harmonize sanctions for market abuses.

Regulations on the use of food products to produce biofuels (flexible biofuel mandates). Theoretically, the development of biofuels could have a stabilizing effect on

cereals prices. Indeed, it could make the demand for cereals more elastic (more sensitive to changes in cereal prices). At the same time, however, energy price spikes (fuel, oil, etc.) can generate cereal price spikes. According to some experts, this is what happened in 2007-2008 (Christiaensen, 2009). In practice, the biofuel cereal supply is not flexible but bound by “biofuel mandates”. Fixed mandates eliminate the stabilizing effect of biofuels in the case of a price shock on the cereal market. But the mandates can act as a buffer on the transmission of price spikes from the energy market to the cereal market (Wright, 2009). For this to happen, the mandates must be adjusted to reduce the flow of cereals used for biofuels when cereal prices rise. This is already partially the case in Brazil. In the USA, a 2008 law makes it possible to modify the mandates. Generally speaking, since the biofuel industry is subsidized, it is possible for governments to control it. The technical feasibility of variable biofuels mandates should be investigated because an unstable supply could endanger the sustainability of the biofuel industry.

Creating an international clearing house (International Grain Clearing Arrangement or IGCA). The idea is to secure the enforcement of contracts on the physical market (between exporters and importers). The idea is as follows (Sarris, 2009): at the international level, there is no legal body with the jurisdiction to guarantee that contracts will be enforced. The only sources of confidence between sellers and buyers are (i) their desire to maintain their reputations, and (ii) the clearing houses of commodity exchanges. These clearing houses have two limitations. First, there is a basis risk if the product needed by an operator is only partially correlated to the exchange’s prices (because of transport costs and/or because of differences in quality). Second, the clearing houses only guarantee financial compensation, not the physical delivery of the product. The goal of the IGCA would precisely be to overcome these limits. The IGCA would proceed by developing links between existing commodity exchanges and their respective clearing houses. In order to guarantee that physical supplies at various exchanges are available to execute international contracts, some of the financial reserves of the clearing houses that would be members of the IGCA could be transformed into physical stocks, for instance by holding warehouse receipts. According to Sarris (2009), the required level of stock at any given time would not be more than 1 million tons of grain equivalent, which means that the amount of money managed would not exceed US\$200 million. This tool aims to reduce private speculation on the physical market. However, three limits may reduce the scope of the IGCA. First, if the governments of the countries where the warehouse receipts systems are based implement export bans, this could make the physical release of stocks impossible. This problem can be managed by specifying that export bans on staple food products cannot apply to the IGCA’s holdings. Second, appropriate exchanges must exist in different regions of the world. Third, most food commodity importers would need to hedge their purchases in these exchanges.

Regulations on exports restrictions. Currently, countries exporting food products have the right to restrict their exports as much as they want, including banning exports completely as many did during the 2007-2008 crisis. This is unacceptable because this type of behavior pushes up international prices. Some experts have proposed forbidding export bans and other measures aiming to restrict exports (Lin, 2008). But this solution is not acceptable to exporting countries as the international high-level summit held at

the FAO in Rome in June 2008 showed. Indeed, they need to protect their populations from food price spikes on the international market. The solution seems to be to allow countries restrict to their imports but only in order to maintain sufficient availability to feed their populations. This means forbidding export bans at the WTO but allowing export quotas with the amount of the quota indexed on the needs of the population (consumption – production – stocks). This type of measure could take advantage of the experience of how food aid amounts are decided in the countries subject to climate crises. Based on a calculation of the estimated food balance that determines a country's degree of food deficit, the volume of imported food aid is estimated. Following the same logic, the minimum volume that should remain available in the country can be estimated. Of course, the excess should not be banned from export.

Regulations on land grabbing. Following the 2008 crisis, many private stakeholders and states purchased or rented land in other countries to secure their own supplies. This kind of behavior can generate food security problems in the countries where the land is located. It can also narrow the international market considerably and, as a result, more it more unstable. Some international rules on these practices are required.

Generally speaking, these rules will reduce some sources of price instability. One alternative option (but not the only option) is to develop collective interventions to fight against these sources. In this second category, we have:

International public grain stocks. Empirically, cereal price spikes on the international market have always occurred when world stocks were very low (Tables 10 to 12). This is consistent with the idea that physical stocks are a solution for all sources of instability. They can buffer the effects of bad harvests, mitigate the cobweb effect, and discourage speculative bubbles and panic movements. This means that maintaining sufficient level of stocks is a good way to prevent price spikes on international markets.

The problem is that private stocks are sub-optimal because storage is a risky activity. In order to show that private storage is optimal, Williams & Wright (1991) had to hypothesize that farmers and traders were risk neutral. This hypothesis may be realistic for US economic agents because they have the opportunity to hedge price-risk on futures markets, but it is not realistic for many developing countries. This means that some kind of public storage is necessary to attain stock levels that are high enough to prevent price spikes.

Table 12 :International Corn Prices and Stocks

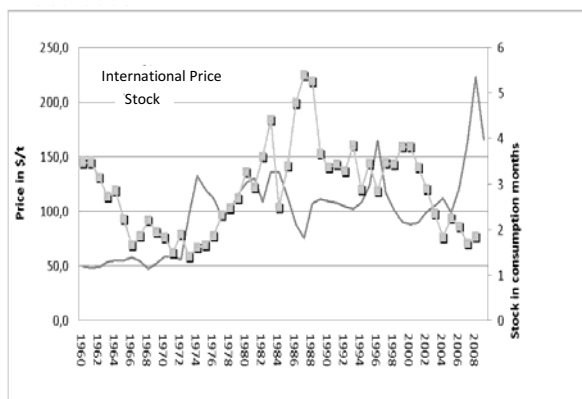


Table 13 : International Wheat Prices and Stocks 1960-2008

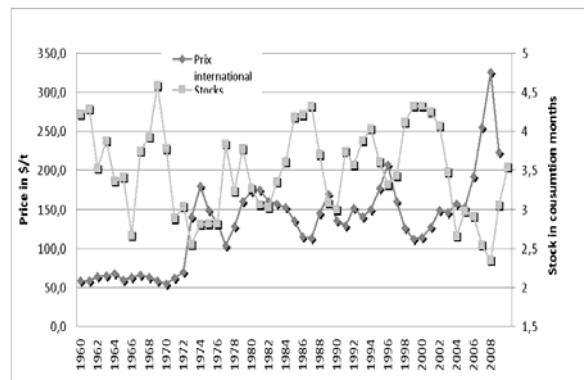
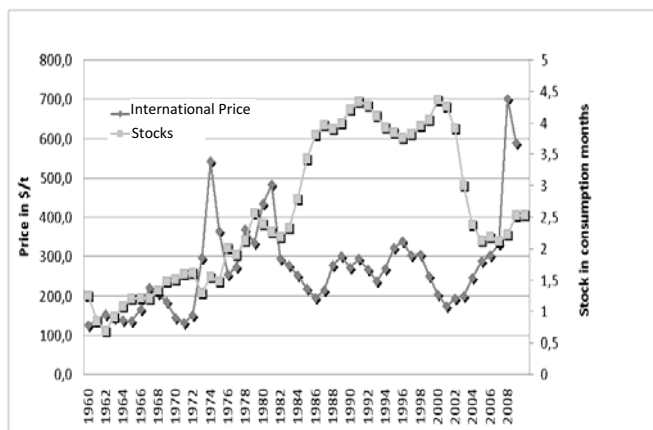


Table 14: International Rice Prices and Stocks 1960-2008



However, governments may lack sufficient incentive to develop public stocks. Most of the time, countries that maintained high level of public stocks did so to attain the objectives of their internal agricultural policies, not to stabilize international markets. Yet, many countries (especially the USA, the UE and China) have been changing their agricultural policies for the last 20 years in ways that imply much lower stock levels (Mitchell & Le Vallée, 2005).

As a result, an international agreement is necessary to share the burden of storage (Lin, 2008). Otherwise, each country would be encouraged to act as a free rider, trying to benefit from the storage of other countries without contributing itself. There are two ways of organizing such burden sharing. The “hard version” is to develop international public stocks for cereals (and maybe other food products). This can be done using national storage facilities. In this case, part of the national public stock is managed by an international organization. The “soft version” is an agreement in which each country commits itself to maintaining at least a level of stock sufficient to cover x months of its own consumption. Part of this stock should be held by public agents (since private stakeholders may have an incentive to amplify price spikes through speculative activities).

This type of measure is subject to two criticisms. The first criticism relates to the high cost of stocks. Indeed, immobilizing large quantities of food products has high technical and financial costs. Nevertheless, if doing so makes it possible to avoid price spikes on the international market, the benefits probably outweigh the costs. The second criticism deals with the difficulties involved in organizing the governance of international stocks. This difficulty is said to have been illustrated by International Commodity Agreements or ICAs (Gilbert 1996). These ICAs are said to have encountered all sorts of problems, with the main problem being the development of plethoric stocks (cocoa) and the breaking of agreements following disagreements between exporter and importer countries (coffee). It is important, however, to discuss the relevance of these criticisms. Indeed, the ICAs aim first to maintain the prices rather than stabilize them, and most of the problems they encountered come from this. The ICA experience does not conclusively prove that it would be impossible to manage an international public stock whose aim was limited to price stabilization. Of course, the price band that determines public stock

purchases and sales would need to be updated regularly in order to follow long-term trends in international prices.

International land reserves. Sarris proposed the constitution of land reserves managed by the international community. These land reserves would be cultivated only in case of international price spikes. If it is less expensive to manage fallow land than deal with physical stocks, this is a way of lowering the cost of price stabilization. However, there are two inconveniences. First, beginning cultivation takes a certain amount of time and cannot offset a climate accident. Second, this measure may generate a cobweb effect: high prices may encourage cultivation of the reserves, leading to production excesses the following year pushing down prices. In this case, international land reserves could increase international price instability.

An international virtual stock. The idea is to be able to counter-speculate on derivatives markets in the case of speculative bubbles (Von Braun & Torero, 2008). This proposal has been highly criticized. Indeed, it is difficult to implement. There are two reasons for this. First, it is difficult (or even impossible) to estimate the price band that separates “normal” prices from bubbles. Second, this virtual stock may be subject to speculative attacks. Accordingly, the stock should be large enough to prevent such speculative attacks. This implies very expensive stocks. Even with very large stocks, this instrument is still very risky: the probability of losing a large amount of money is high. This makes it difficult to mobilize the international community. Last but not least, the same result (reducing speculative bubbles) can be attained in a more effective, less costly and less risky way by regulating derivatives markets.

To summarize, two categories of tools should be implemented. The first category consists of ex ante tools. Their aim is to reduce some sources of price instability by restricting destabilizing behaviors on the part of states and private operators. The tools in the second category are ex post tools. They are ways of lessening the destabilizing effects of the different sources. Both categories complement each other.

Moreover it should be noticed that some tools are generic: they can have a stabilizing effect on many sources of instability. This is especially the case of international public tools (physical stocks) that are a way of fighting climate shocks, cobweb effects, speculation and so on. Other tools are more specific to some sources of instability, or can even reduce some sources of instability while increasing other sources (for instance, international land reserves may amplify the cobweb dynamic). Hence, we have two approaches: developing a wide range of specific tools (to cover most of the sources of instability), and developing international public stocks (or, at least, an agreement on sharing the burden of storage among countries). These two approaches can be complementary.

Last but not least, it should be noted that national and international initiatives to manage international price instability are complementary but may also be contradictory. Indeed, reducing international price instability may sometimes be achieved to the detriment of countries' capacity to protect themselves from it (and vice-versa).

Both strategies are necessary, however. International price instability needs to be lowered in order to avoid the development of widespread protectionism (self-sufficiency strategies) that would lead to inefficient resource allocation and drive up the average price of food. Moreover, such protectionism would narrow the international market and, by so doing, make it more vulnerable to climate shocks (that increase price

instability). This phenomenon has been noted since 2008 with the strong rise in international land grabbing. It is also necessary to reduce the shortsighted strategies developed by countries to protect themselves from international instability. Because these strategies (especially export bans) increase international instability, their scope should be reduced.

At the same time, there is also a need to allow the countries to control their import and export flows. Indeed, stabilizing international prices is not enough to stabilize the price of imported food products as these prices also depend on exchange rates and freight costs. Moreover, controlling imports and exports can also be useful in solving domestic instability due to internal causes (such as bad harvests). It is a much less costly alternative to using large national public stocks.

4.3. Elements to Take into Account when Designing an International Governance System to Manage Price Instability

All the available or possible instruments to manage price instability require international governance. Many institutions already exist but they do not always have a mandate to take charge of these instruments.

In order to design international governance, it can be useful to distinguish between the three main functions of this governance:

- The first function is to provide **public goods** like information and knowledge in order improve coordination and decision. HLPE has been commissioned by CFS to provide a conceptual framework to manage price instability and assess different strategies and instruments. This will be done in 2011 but will not become a permanent analysis capacity like the intelligence unit proposed by Von Braun & Torero. Permanent information flows and updated diagnoses are needed and could be provided by International Commodities Bodies.
- The second function is to manage financial aid or **transfers** from one country to another. This means determining which countries would provide, which countries would receive, what amounts would be involved, and what implementation conditions would be required. The OECD is an example of the type of institution that could fulfill this function.
- The third function is to set, monitor and enforce common **rules** for national policies. These rules could apply to international trade, the regulation of derivatives markets, land grabbing, and the use of food products to produce biofuels. Ad hoc mechanisms could be designed to enforce these various rules. Another option would be to rely on the WTO's Dispute Settlement Body (as Von Braun and Torero have proposed for the enforcement of an international virtual stock, for instance).

Finally, in any international institution, countries are organized into geographic or economic groups. These groups are not always relevant to how international markets affect their food security. One solution could be to organize country groups based on shared interests from this standpoint (for example: food insecure countries that are highly dependent of international markets; large food-exporter countries, etc.). These groups, and particularly of the group made up of the more vulnerable countries, could defend their position in several international forums.