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Vulnerabilities of developing countries to food commodity price risks : International responses

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Abstract

The recent period of high and volatile world food commodity prices has spurred many discussions initiatives and proposals for market regulation and enhancements. This has been of particular concern to the Net Food Importing Developing Countries (NFIDCs), especially the Least Developed Countries (LDCs) among them. The paper suggests that the main concerns of these countries involve market unpredictability, uncertainty about contract enforcement in periods of crisis, and financial constraints in importing food staples. A review of the appropriate policies to deal with risks of NFIDCS reveals that there are several policies that have been proposed, which if implemented at international level could alleviate the concerns of NFIDCs. However, a review of actions and initiatives taken at the highest international levels reveals that while the rhetoric has been there, the actual actions and financing for them have been short of the objectives. On the other hand considerable legislative activity in the US and the EU has aimed at curbing excess speculation in derivatives markets under the assumption that these markets are the main cause of market upheavals, something, however, that has not been scientifically confirmed. It thus seems that there is still a lot to be done to insure NFIDCs against market food commodity market shocks and volatility.

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1. Introduction and background

The period since 2006 has witnessed unprecedented food commodity price developments. Between September 2006 and February 2008, world agricultural commodity prices rose by an average of 70 percent in nominal dollar terms, with prices in some products rising by much more than that. The strongest price rises were observed in wheat, maize, rice, and dairy products. Prices fell sharply in the second half of 2008, although in almost all cases they remained above the levels of the period just before the sharp increase in prices started. In 2010 sharp price rises of food commodity prices were observed again, and by early 2011, the FAO food commodity price index was again at the level reached at the peak of the price spike of 2008. In 2011 and 2012 prices fell again and then rose again considerably in early 2013, only to fall in late 2013. In other words within the past six years many food commodity prices increased very sharply, subsequently declined equally sharply, and then again increased rapidly to reach the earlier peaks. During 2012-13 the FAO food commodity price index in real terms was at levels not seen since 1974-75. Such rather unprecedented volatility in world prices creates much uncertainty for all market participants, and makes both short and longer term planning very difficult. It has also created considerable international discussion and debate as to ways and policies to reduce the food commodity market volatility, and to assist developing countries to better cope with its adverse effects.

Considerable international debate on these issues has taken place at the highest level, and several initiatives have been considered. It is interesting to inquire whether these initiatives have resulted in anything permanent and substantial in terms of alleviating the problems faced by developing countries. The purpose of this paper is to review the international debates and declarations in this area since 2006, and to assess the practical results in terms of new institutions, actions, or other initiatives that have been put in place. Previous episodes of sharp food commodity price rises such as those of 1973-75, early 1980s, and mid-1990s, also led to international discussions and policy suggestions, but very little, if anything, was adopted at the international level to assist low income food deficit countries to cope with the consequences. This time the food commodity crisis lasted a long time (about 6 years and possibly still going) and has seen a variety of international responses. Hence one may hypothesize that this time things were different than before.

Historical analysis has shown that international food commodity price volatility appears not to have increased significantly over the past 50 years (Huchet-Bourdon, 2011). Nevertheless, what has changed considerably in recent decades, is the exposure and vulnerability of many developing countries (DCs) to international food shocks. There has been a shift of developing countries from the position of net agricultural exporters - up to the early 1990's - to that of net agricultural importers, as figures 1 and 2 indicate. Growing dependence on food commodity imports implies growing vulnerability to external food commodity shocks. Projections to 2030 and 2050 indicate a deepening of this trend, which is due to the projected decline in the exports of traditional agricultural products, such as tropical beverages and bananas, combined with a projected large

and growing deficit of basic foods, such as cereals, meat, dairy products, and oil crops (Alexandratos, 2011).

Since 1990, the food import bills of least developed countries (LDCs) have not only increased in size, but also in importance, as they constituted more than 50 percent of the total merchandise exports in all years (see eg. Rakotoarisoa et. al, 2011) In contrast, the food import bills of other developing countries (ODCs) have been stable or declined as shares of their merchandise exports. These trends were reinforced during the 2007-8 food crisis. (Prakash, 2011). Furthermore, it appears that there is considerable volatility in both the barter terms of trade as well as the income terms of trade of DCs especially LDCs. It also appears that for LDCs the income terms of trade seem to have declined over the past several decades while they have stayed stable or increased for other DCs or developed economies. It thus appears that from the DC viewpoint a major issue in the context of high international food prices is the compensatory financing of food related shocks.

In the sequel we first review in section 2 the issues pertaining to food commodity price risks that are important from a net food importing developing country (NFIDC) point of view. In section 3 we discuss appropriate policies to deal with the food commodity risks faced by NFIDCs. Section 4 reviews the international responses to the recent food crisis. Section 5 discusses the policies and initiatives adopted in the commodity derivatives markets. Section 6 assesses whether the international responses have been commensurate with the problems or in the direction of dealing with the major market price risk and volatility issues and concludes.

2. The nature of international food commodity price risks relevant to NFIDCs

The major problem of NFIDCs is not only price or quantity variations *per se*, but rather major unforeseen and undesirable departures from expectations, that can come about because of unanticipated food import needs due to unforeseen adverse domestic production developments, as well as adverse global price moves. In other words, unpredictability is the major issue. This is also the gist of the argument of Dehn (2000a) and Cavalcanti, et. al. (2011) who argued that the negative impacts on growth of commodity dependent economies come from unanticipated or unpredictable shocks, rather than from ex-post commodity instability per se.

Apart from the problem of unpredictability of food import bills for NFIDCs, another problem that surfaced during the recent food price spike was the one of reliability of import supplies. Several NFIDCs that could afford the cost of higher food import bills, such as some of the middle income oil exporting countries and small island states, during the 2007-8 period faced problems of not only unreliable import supplies but also the likelihood of unavailability of sufficient food import quantities to cover their domestic food consumption needs. This raises a different problem for these countries, namely the one of assurance of import supplies. Several of these countries, e.g. those surrounding the Arab Peninsula and the Persian Gulf, have unfavorable domestic production conditions and rely on imports for a substantial share of their domestic consumption. Unavailability of supplies creates large food security concerns for these countries.

A third problem that also became prominent during the recent food crisis, was the one of trade finance. Trading agents in exporting countries who plan to export food commodities to any country need to obtain finance for the exports. Such finance is normally provided by specialized export financing banks, which in turn have limits on how much total finance they provide, or exposure they incur, to any one country. When international prices rise, the amount that needs to be financed for a consignment of fixed volume naturally increases. The increase, however, maybe such, depending on the amount of price rises, that the export bank reaches the limit of its exposure to the particular country, and will not lend more. Hence imports maybe limited by the rise in international price irrespective of whether the importing country agent has adequate resources to pay for the imports.

Market volatility normally refers to variations of market prices from period to period. As such it is an ex-post concept, in the sense that everyone can observe the market variations. However, what matters for both market participants as well as policy makers are not the market price variations per se, but their unpredictability, and the risks they create, as discussed above. Uncertainty of the variable x, when looked at from some period before its realization, is basically a summary measure of the unpredictable elements in the process determining x, that are likely to occur between the time of the prediction and the time of realization of the variable x. For instance if a producer is contemplating producing a crop, he/she may know the basic process (the model) that determines the yield and the price of the commodity, but he also knows that there are elements of this process, such as rainfall and future price, that cannot possibly be predicted say one year ahead. These unpredictable elements are what create the uncertainty about the outcome of his action to produce the crop. Uncertainty then depends on how far into the future one is interested in the variable of interest.

Risk, in turn is generated by uncertainty. In other words risk is generated by actions whose outcomes are subject to uncertainty. In the case of the producer, he knows that production of a crop is uncertain. As long as he does not produce the crop he is not at risk. If, however, he decides to produce it, he places himself at risk, as the outcome of the crop affects his income and welfare. Thus it is unpredictability that defines uncertainty, and it is the actions that have uncertain outcomes that create the attendant risks. In the face of uncertain outcomes and prices, agricultural producers, for instance, tend to reduce the risks facing them, by diversification, namely by producing a less uncertain mixture of products.

Prices normally fluctuate in commodity markets in response to new and continuously changing information about the state of the markets. Similarly the underlying uncertainty about future events gives rise to expectations about future market outcomes, such as prices, and difference degrees of confidence about these expectations. Hence at any point in time one can talk about the underlying uncertainty of the market about a future outcome. The level of information and the actions of the various market participants based on this information determine the probability distribution of expectations as well as actual market outcomes. It is normal in commodity markets that actual prices vary from period to period, in response to new information, and also that

expectations of market outcomes, such as prices, also vary. Thus actual and observed price variations are due to two sets of fundamental variables, namely the underlying uncertain shocks that change the conditions in the markets (such as production shocks), and the behavior of the market participants, both private as well as public, in response to these shocks (Fackler and Tian, 1999). It is important to ascertain the degree to which price uncertainty is due to unpredictable exogenous shocks, or due to market actor responses to such shocks, as the appropriate policies to deal with market uncertainty will be different.

Volatility is normally associated with two concepts. The first is variability of the observed prices, and as such it is a concept that can be readily quantified ex-post through some a measure based on observable market prices. The second concept is that of unpredictability, and this, at any one time, refers to the conditional probability distribution of some subsequent market outcome, given current information. Such a concept cannot be readily and objectively quantified, as there is no corresponding market variable. It can only be inferred from observed market variables through some appropriate model.

The detrimental effects of uncertainty or unpredictability on both private agents, as well as governments are not hard to understand, and have been the object of both discussion as well as research for a long time. For instance, Keynes (1942) argued that commodity price fluctuations led to unnecessary waste of resources, and, by creating fluctuations in export earnings, had a detrimental effect on investment in new productive capacity, and tended to perpetuate a cycle of dependence on commodities, what we may call in modern growth terminology a "commodity development trap".

The above discussion implies that mere variability of outcomes does not constitute uncertainty, and may not be detrimental. This issue of uncertainty versus mere ex-post variability is important in the discussion of this paper, as compensatory schemes like STABEX, as well as the IMF's Commodity Compensatory Financing Facility (CFF) have adopted a notion of uncertainty that is related to the mere ex-post variability or fluctuations of outcomes such as export earnings or import costs, rather than to their predictability. More recently, there have been efforts to construct indices that correspond more closely to the theoretical notion of uncertainty, namely the notion of unpredictability. Dehn (2000b), constructed an index of price instability that distinguishes between negative and positive shocks, and finds, as expected theoretically, that negative commodity price shocks have a significant negative effect on overall economic growth. This was the first study to establish a strong negative empirical link between negative unanticipated shocks and overall economic growth. Recently Cavalcanti et. al. (2011) also estimated that negative terms of trade shocks (which include high food import costs) have stronger negative growth impacts than positive terms of trade shocks for developing countries.

That unpredictability rather than instability is the main problem in agricultural production is one of the oldest, but apparently forgotten or not appreciated, issues in agricultural economics. In fact one of the earliest classic works in agricultural economics considered exactly the issue of

agricultural price unpredictability and the benefits of establishing forward prices for producers (Johnson, 1947). By establishing forward prices for agricultural producers, one basically eliminates one of the most troublesome and potentially damaging sources of income unpredictability, and makes producers able to plan better their activities.

Establishing predictability in agriculture has been one of the earliest institutional developments of the modern era in developed countries. In fact the modern US agricultural marketing system realised very early the benefits of a market based system of forward prices, and through the simple system of warehouse receipts, emerged one of the most sophisticated and useful marketing institutions in modern agriculture, namely the institution of futures markets. It is not perhaps coincidental that futures markets developed independently in several countries and long time ago. In more recent years, the development and globalisation of financial markets has led to the proliferation of many other risk management commodity related instruments, notably options, and weather related insurance contracts. While in some developed countries the marketing system response to unpredictability has been the establishment of sophisticated forward markets, in most other countries, both developed and developing, the response of producers, and through their pressure of governments, has been the institution of fixed or minimum price marketing arrangements. The major problem, however, of most such schemes is not that they are in principle wrong, but that they have most often been transformed to price support or taxation instruments that have veered off their purpose of providing forward signals and minimum prices based on proper predictions.

It, therefore, appears that a major issue in modern agriculture in most developing countries, with respect to market volatility, is how to establish some forward pricing or insurance system for agricultural producers and governments without distorting the markets. Once such forward mechanisms can be established then one can talk about systems of insurance or systems of compensation.

Considerable literature has been devoted to understanding the costs of market volatility. Prakash (2011) offers a thorough survey. While some literature (Lucas, 2003) suggested that the cost of market volatility is quite small in developed countries with efficient capital markets, other literature, that took into account credit constraints and imperfect transmission from international to domestic markets, showed that the cost of market volatility can be substantial for low income developing countries exposed to commodity shocks (Guillaumont, et. al., 1999, Prasad and Crucini, 2000, Subervie, 2008, Rapsomanikis and Sarris, 2008, Bellemare, et. al. 2010).

High agricultural commodity prices seem to occur because of unexpected changes in the underlying fundamentals such as the exogenous shocks that were mentioned above. However, the reactions of market participants to large unpredictable events can be such as to create considerable uncertainly, and hence volatily. Figure 3 exhibits the 2 month ahead model free

implied conditional price variance for wheat, corn and soybeans from 1990 to 2011[2]. Implied conditional variance is a measure of ex-ante market uncertainty. It can be clearly seen that the market uncertainty rises with rises in the spot prices, and this suggests that the factors that create the price rises may also be responsible for the increase in market uncertainty.

3. Appropriate policies to manage market volatility and price spikes

In this section we review the policies that can be effective at managing the risks of NFIDCs resulting from food commodity market volatility and price spikes. This is done as a prelude to the discussion of what has been accomplished internationally in response to the recent crisis, and whether any of the available policies has been pursued or adopted. There are several reviews of such policies and we focus on policies which we believe are the most appropriate (for a recent review see Galtier, 2013)

There are basically two ways in which individual countries can manage their domestic food markets in the face of excessive international market volatility. One involves trade actions, and the other involves public stockholding. If countries or other agents can be assured their commodity supplies through trade, then they would need to carry lower levels of security stocks. Hence trade can be an important substitute for carrying costly physical inventories. Trade, however, can be impeded by a variety of problems. Policies aimed at facilitating commodity trade, may therefore obviate the need for policies to carry costly security or emergency physical stocks, both nationally and internationally. In the recent as well as previous food crises, there were three major trade facilitation related problems that caused governments to examine carrying larger security stocks. The first concerned unexpected and uncoordinated export bans by key exporters, which tend to increase international prices. The second was the unavailability of import financing for several lower income food importing countries, and the third was the uncertainty about international contract enforcement in a time of rising prices. The sequel discusses ways to deal with these problems.

3.1. Can export bans be prevented?

Export bans are very disruptive to international markets, as they disturb established trade flows and cause significant losses to traditional trading partners of the countries that import from those imposing export bans. As export bans are a trade measure, the appropriate international forum to discus this is the World Trade Organization (WTO). Currently export bans are not forbidden by the WTO agreement, as the concern of WTO members in the past was with low prices and hence import restriction measures, rather than high prices, which are reinforced by export bans. It would cost little to implement such an agreement among WTO members, once they agreed to it, and it would involve a small change in existing WTO rules. This, however, is not assured, as some

[2] The model free implied variance (and volatility) is a concept utilized frequently in finance, and utilizes implied volatilities from actual options with different strike prices to synthesize a measure of implied volatility that does not depend on a particular strike price. See Bakshi, Kapadia and Madan (2003) for an exposition.

members may not want to abandon the flexibility to control their domestic commodity markets via such an instrument. Clearly the developed countries would have a large role to play in revising the WTO rules in this direction.

A recent thorough review of the subject by Anania (2013) points out that while WTO members decided not to impose any tangible constraint on their own policies restricting exports, they have forced new acceding countries to accept significant limitations on their ability to do so. China, Mongolia, Russia, Saudi Arabia, Ukraine and Vietnam had to accept obligations on export restrictions which go beyond, to different extents, existing WTO rules. Export restrictions are also often regulated in regional trade arrangements (RTAs), including bilateral ones, and in this case as well provisions often go well beyond those in WTO.

3.2. A fund for the establishment of an internationally coordinated "Global Financial Food Reserve" (or GFFR) of basic food commodities

The only sure way to avoid excessive market upheavals is to have some amounts of previously accumulated stocks, but every proposal along these lines runs up against coordination and financing problems. The idea of a proposal that may have promise is to combine the best parts of the two proposals on reserves that have been discussed considerably, namely the establishment of a coordinated global physical reserve and a virtual reserve aimed at calming futures market speculation. The idea is to have a market based global safety net which would create physical or financial resources in times of price spikes.

The major problem with all proposals that have been proposed and deal with market volatility is that they purport to try to prevent the occurrence of a price spike. This, however, is very difficult to accomplish within a globalized market system, and may need very large and uncertain amounts of financial resources, that rightly makes donors uneasy and unwilling to consider. However, if the major objective of a system to deal with market volatility is to prevent the weakest members of the international community from paying the price for an upheaval, which for the most part is not their fault, then one could consider a limited and much cheaper safety net system to ensure support only for those countries.

The proposal made here would be an agreement by a group of a few important world grain market participants that would include members of the G8+5 as well as major grain exporters and other donors, to commit funds that could be utilized to hold specified amounts of publicly owned long positions in organized exchanges. In other words the proposal calls for the establishment of an international publicly held "global commodity fund" specifically targeted to basic foods. Given low margin requirements, this fund could assure, with relatively modest financial resources, control over a considerable amount of physical reserves. This could then be considered to be a "virtual commodity reserve", but in its concept it is very different from what has been proposed before by von Braun and Torrero (2009), and von Braun Lin and Torrero (2009), as the fund would consist of actual and committed long positions, and would basically act a dormant physical reserve. The fund's positions would be rolled over from period to period, much like the commercial commodity

funds do.

The fund's positions would be dormant and passive when markets are operating in normal conditions. Hence its resources would not be used for any "stabilization operations". However, when markets go into an unusual spike, which could be signaled by either the breeching of some prespecified price upper ceiling, or an estimate of a large probability of such an occurrence, the fund would have the option to either take physical delivery, so as to utilize the physical stocks for prespecified purposes, or to sell off the long positions. In either case the fund would command at a time of a price spike either physical stocks or financial profits from its long positions, if liquidated under market spike conditions. These physical stocks or profits could be utilized to promote a global safety net to assist most affected poor countries in obtaining food commodity imports at lower than spiking market prices. In other words the fund and the stocks it could support would not be utilized for market or price stabilization but rather for supporting assistance to needy countries.

Given that the fund's purpose would not be to stabilize markets, but rather to assure market weak participants that their excess food import costs would be covered, the GFFR could be restricted in size to what is estimated as needed for additional or extraordinary assistance to needy food importing countries in times of a food crisis.

The cost of such a reserve would be modest. For instance between 2006 and 2008 the total cereal import bill of LDCs increased by roughly 20 percent or about 4 billion US$. If 10 percent of that could have been considered as extraordinary cost of vulnerable poor countries that would be compensated by developed countries as extraordinary aid under some global safety net, then this would amount to 400 million US$. This is much smaller than the funds that were committed by developed countries in support of developing countries in the context of the global food crisis. If the fund before the crisis was of a size of 100 million US$, and it was all invested in cereal stocks via long future positions, then at 5 percent margin it would have commanded physical amounts, worth about 2 billion US$. The profits from a 20 percent increase in prices during the spike (and the actual increase during a spike would have been much larger than this) would then have been around 400 million US$, which would have allowed the fund to compensate some low income developing countries for the extraordinary costs of the import bills. Needless to say that these calculations are very quick and simple but are intended to give an order of magnitude to the amounts involved.

The GFFR would act as a global market based safety net. As its major market operation would be to roll over positions in each period if needed, it would not interfere in the normal functioning of the commodity markets. The allocation of the proceeds or the profits of the GFFR from any price spike to needy developing countries could be a separate process, that would entail allocation according to some prespecified development criteria.

3.3. Food import financing and a dedicated food import financing facility (FIFF)

As mentioned earlier, a major problem facing LDCs and some NFIDCs is financing for both private and parastatal entities of food imports, especially during periods of excess commercial imports. The financing constraint arises from the imposition, by both international private financial institutions and domestic banks that finance international food trade transactions, of credit (or exposure) limits for specific countries or clients within countries. To this end a FIFF was proposed in 2005 to the WTO by FAO and UNCTAD and elaborated further by Sarris (2009), to overcome this problem.

The purpose of a food import financing facility (FIFF) would be to provide financing to importing agents/traders of LDCs and NFIDCs to meet the cost of excess food import bills. The FIFF is not intended to replace existing financing means and structures; rather it is meant to complement established financing sources of food imports when needed. The financing will be provided to food importing agents. It will follow the already established financing systems through central and commercial banks, which usually finance commercial food imports using such instruments as letters of credit (LCs). The extra contribution of the FIFF would be to provide guarantees to these financial institutions so that they can increase their exposure to the importing countries. It will do so by inducing the exporters' banks to accept the letters of credit (LCs) of importing countries in hard currency amounts larger than their credit ceilings for these countries. A key aspect of the FIFF is that it will not finance the whole food import bill of a country, but only the excess part induced by a food crisis. In this way "co-responsibility" will be established, so that only real and likely unforeseen needs will be financed, and the cost of excess financing will be kept at a low level.

The basic feature of the proposed FIFF is to provide the required finance at a very short notice, and exactly when needed, once the rules of operation are agreed upon in advance. Thus, the delays common to past ex-post insurance or compensation schemes that rely on ex-post evaluation of "damages" can be avoided. The proposed FIFF will operate in real time. Its financial strength would be based on guarantees provided to the FIFF by a number of countries or international financial institutions.

The costs of a FIFF would be minimal through risk pooling for a large number of countries and food products, and low operational costs owing to its risk management activities. The principal risk for the FIFF is that the guarantees that it provides will be called to finance non-repayments. This risk could be managed actively. As the facility would not set out to disturb the normal functioning of international food trade, there is a "non-zero" risk that the local or central banks cannot be reimbursed by their local food importing clients. This would primarily be the concern of the domestic and central banks of each country, and not the FIFF. Nevertheless, lack of reimbursement by the ultimate beneficiaries of the finance may lead commercial banks to default on their obligations (or delay repayment) to the FIFF.

The FIFF would benefit from guarantees from a number of countries. Ideally, this would include a number of OECD countries, which would enable the FIFF to borrow at AAA terms, when needed.

But any group of countries could provide guarantees; the risk rating of the FIFF is then likely to be that of the best-rated among these countries.

A food import financing facility has existed in the IMF since 1981 under the Compensatory Financing Facility (the IMF CFF). The objective of that was not food import financing, but rather ex-post compensatory financing to countries facing balance of payments problems, and hence could not import food. Despite its availability it has been utilized very little, largely owning to the conditionalities imposed on borrowers by the IMF. The proposed FIFF would be different from the CFF in the sense that it would provide guarantees for normal food import finance, and would act in a much more timely fashion, namely before the undesirable event, rather than after.

While the FIFF envisioned in the current proposals is an international initiative, it could operate also as a policy of major food exporters, such as the EU, Canada and others. The US already operates a system very similar to this under its GSM-102 program of the Commodity Credit Corporation. The EU does not have a system of this type, despite the fact that many major agricultural commodity exporting firms and financial institutions operate in the EU.

A drawback of the FIFF, as mentioned by Gilbert and Tabova (2011), would be the fact that potential donors would have to count the guarantees provided to the FIFF as part of their public debt, even though the guarantees may not be exercised, something that may not be easy for some donors. To this end it is helpful to make rough estimates of the types of amounts of guarantees needed. Sarris (2009) made some empirical estimates for the yearly guarantee needs that LDCs and LIFDCs[3] would require under such a system and given the data for years up until 2007. The computations suggest that average yearly FIFF guarantee financing for LDCs would be in the vicinity of 200-430 million US$, while the financing needs in an exceptional year may reach as much as 2,400 million US$. To put these figures in perspective the average yearly LDC commercial food import bill for all foods between 2000 and 2007 was 10.7 billion US$. Hence the FIFF average annual financing and hence guarantee needs would constitute about 2-4 percent of yearly LDC combined commercial food imports. In a year of exceptional needs, the value of FIFF guarantee financing needed could rise to as much as 23 percent of the total LDC food import bill.

If all low income food deficit countries (LIFDCs) were to be covered by the FIFF, then the annual guarantee financing needed would be in the range of 960-1937 million US$, and this constitutes around 1.8-3.7 percent of the average LIFDC food import bill for the period 2000-2007. In an exceptional year the maximum financing needed could rise to as much as 10 billion US$, which would be about 19 percent of the total LIFDC average food import bill of the same period. The above amounts are very small compared to the debt levels of the major donors, which, for instance for the US currently stands at around 14 trillion US$, for France at 2 trillion US$, for Germany at near 2 trillion US$, etc. The G7 group of most developed countries currently has a level of public debt in the neighborhood of 20 trillion US$.

[3] LIFDCs are a FAO classification. The latest list of 2013 includes 62 countries.

3.4. A system to guarantee food import contracts

A problem that is acute during food crises is counterparty performance risk, namely the risk of reneging on a delivery contract, faced by many food importers. In other words, the problem in this case is not so much unpredictability of food import costs, or high food import prices, or financing, but rather assurance that supplies will be delivered. This does not only pertain to short term contracts but also longer term contracts. The basic reason for non-performance of international staple food import contracts is adverse price movements or adverse financial events that prevent a food exporter or trader to fulfill an import contract. There seems to be no contract enforcement mechanism in international staple food grain transactions.

Contracts in organized commodity exchanges are enforced because there is a clearing house which is responsible for making sure that all transactions are executed. Similarly contracts within one national legal jurisdiction can be enforced as there is a legal system to ensure contract enforcement, albeit a court based legal enforcement system is quite slow. Most international contracts are very similar to Over the Counter (OTC) contracts in the sense that is it only the financial and reputation status of the two parties that instills confidence in contract enforcement. There is no mechanism for international contract enforcement, and whatever juridical procedures exist are slow, uncertain, and costly, and cannot deal with the immediate risk of contract cancellation.

The basic missing institution is an international contract together with an international clearing house type of arrangement similar to the clearing houses that are integral parts of the organized commodity exchanges, which ensure that all contracts are executed. The key question is whether an international contract along with a clearing type of mechanism can be envisioned to ensure the performance of staple food type of import contracts. A proposal for an international grain contract has been made by Berg (2011), while Sarris (2009) proposed the institution of an International Grain Clearing Arrangement (IGCA). These are complementary proposals, as they aim at the same objective namely global contract enforcement. The objective of an IGCA would be to guarantee or insure performance of grain import trade contracts (short, medium and long term) between countries or private entities based in different countries.

A major function of a commodity exchange clearing house, apart from the settlement of the financial contracts, which amount to the bulk of settlements, is to ensure that physical delivery can take place, if needed. This is for instance one of the functions of the Chicago Mercantile Exchange (formerly the Chicago Board of Trade), and to ensure this a variety of rules and regulations with respect to delivery obligations are adopted by the exchange and the clearing house. In most organized exchanges physical delivery is a very small portion of all transactions, but if a trader insists on delivery then this must be arranged by the exchange. Many exchanges have arrangements with warehouses so that physical deliveries can be made against a futures contract, and there are severe penalties for anyone with an open contract who either does not fulfill the financial terms or does not deliver a physical commodity on it. It is these properties that would

need to be emulated by an envisioned international contract and an IGCA, in order to it to be viable as a guarantee institution in international staple food transactions.

A global contract, according to Berg, (2011) rather than tracking prices in one geographical region, would track "cheapest to deliver" commodities, by designating delivery points in several places in the world. The traders who could deliver on such a contract would be those with relatively low prices.

There are precedents to this type of global contract, namely the global sugar futures contracts of the Intercontinental Exchange and the Euronext Liffe. In these cases the ports able to provide the cheapest sugar are the first to deliver against the contract. This provides a global signaling system of both price and regional availabilities of sugar ready to export. Given that the contracts are provided through organized international exchanges, the delivery on a given contract is guaranteed through the clearing houses of the relevant exchange. The only potential drawback is the logistical difficulty of having the supplies delivered in some part of the world, which maybe unknown at the time of contracting, and different from the location of the desired place of delivery. However, it would not be difficult to envision that transport services would be readily available in all major delivery points.

If a global contract is not instituted by an international exchange then the next best way to implement something on an international scale resembling the functions of an international contract and the clearing house of existing organized exchanges would be to link existing or envisioned commodity exchanges, with their respective clearing houses, or to have international exchanges list contracts with several international points of delivery. In other words, it maybe appropriate to think of how parts of contracts bought in on one exchange could be guaranteed not only by the clearing house of the exchange in question but by clearing houses of other linked exchanges.

The problem is that delivery at a recognized warehouse, e.g. near Chicago where the CME delivery locations are, may not be what the importer wants, and may need to incur considerable cost to transport those amounts to his desired import location. Hence what would be desirable is to have the possibility of taking delivery of the same amount of grain but at a location much closer to the importer's desired destination. One way to do this would be to establish links between various commodity exchanges around the world, so that the price difference between grain stocks in different locations would be equal to the relevant cost of transport and other transactions charges.

The IGCA could be envisioned as a branch of the linked commodity exchanges which would in essence consist of some parts of the underlying clearing houses of the exchanges. The IGCA would try to guarantee that physical supplies around the world at various exchanges are available to execute the international contracts in its member exchanges. This could be done, for instance, if part of the financial reserves of the clearing houses that are members of the IGCA could be transformed into a physical reserve, via for instance holding warehouse receipts in various reliable locations around the world. The advantage of transforming part of the financial reserves into

physical reserves would be two fold. First, the value of the underlying reserves would fluctuate with the price of the underlying commodity. This is like marking the underlying assets to market. This would obviate the need by contracting parties to post additional margins in case the price of the commodity increases suddenly.

Second, and this is perhaps a major positive aspect, if some of the financial reserves of the IGCA were to be transformed into warehouse receipts, the physical execution of the underlying contracts, and not only their financial settlement, could be guaranteed. The commitments in futures or warehouse receipts of the IGCA could be liquidated once the actual deliveries on the relevant contract were executed. The liquidation of the physical positions or futures holdings of the IGCA would provide the funds to return to the contracting parties their posted insurance margins. In fact, since the liquidation of the IGCA margins would result in a variable amount as prices fluctuate on the underlying warehouse receipts or futures contracts, the restitution to the contracting parties of their initial margins would be variable and close to a fixed share (minus some transactions cost) of the underlying transaction value. Hence the true cost to the two parties to an international contract would be the interest foregone or paid for the posted good faith margin. Given all the other transactions costs in an international staple food import contract this may not be too high.

The IGCA would guarantee the execution of contracts by pooling the resources of several exchange related clearing houses. This would ensure that there would be liquidity in terms of physical reserves to honor individual contracts in case of non-performance by a participant. In fact, the major underlying benefit of the IGCA would be that by investing a small part of its reserves into physical warehouse receipts or deliverable futures contracts, it would create a global physical commodity reserve stock that could be utilized to execute international staple food contracts in case of non-performance of the exporting party to a transaction.

The major difference, however, of such a stock and stocks envisioned in previous discussions on global price stabilization would be that this reserve stock would be used only to make the market work, namely ensure physical delivery and not to change the fundamentals of the market, as most of the other stock holding ideas envision. In the words, the stocks held in the form of warehouse receipts or other physically executable contracts, would perform the function normally done by so-called pipeline stocks, which are held by various market participants to ensure that there is uninterrupted performance of the normal market functions of the agent. Their function would not be to stabilize or speculate, but simply to ensure liquidity in the market, much as the financial reserves of the commodity clearing houses ensure liquidity to execute all underlying financial contracts. The necessity for an international arrangement to have such stocks is that there is no such physical liquidity mechanism internationally. In other words one of the main functions of the IGCA would be to ensure global physical grain liquidity. The IGCA could spread the risk of non-performance or country problems by holding its commodity reserves in several geographic locations, as well as several organized exchanges.

A major risk of such a IGCA would be that a sovereign country in whose territory, the warehouses of the underlying stocks in which the IGCA has invested are physically located, could impose export restrictions or bans that may make the physical release of stocks impossible. Here, however, is where appropriate export related disciplines could be formulated in the context of the World Trade Organization (WTO), or another regional arrangement, to prevent exactly this type of phenomenon, as discussed above. Also if major IFIs, such as the World Bank, the IMF, and other IFIs are financiers of such an IGCA, then the type of sovereign type of default could be guaranteed by these IFIs, perhaps in the same manner they provide sovereign guarantees and insurance for other investment projects. In other words, default on any of the contracts insured with the IGCA would entail default with the IFIs behind it, and this may make it harder to default. On the downside, the relevant IFIs may be required to devote part of their sovereign guarantee capacity to this.

Another major risk of the IGCA maybe the possibility of default by a party. This does not have to be only a supplier (in case for instance of increased prices), but could also be the buyer (in case of suddenly decreased prices), who may not be interested in a contract at some prices that may now be considered too high. In such a case the seller would be losing a portion of the value of the contract due to the decrease in price. Given that the IGCA would be an extended arrangement among viable commodity clearing houses, it could compensate the seller by the difference in the original and current value of the contract insured through the relevant exchange or clearing house.

An essential element then of the proposed IGCA is the internationalization and linkage of commodity exchanges. This implies that the additional performance guarantees that are envisioned here can be obtained if two conditions exist. First appropriate exchanges must exist in different geographic locations around the world. Such locations should most likely be near the major production areas for the commodity in question. Second most importers of the food commodity would hedge their subsequent purchases in such exchanges. This can become part of most food importers trading practices, and it probably is already a practice by many importers. The existence of more exchanges would probably reduce the basis risks and hence make trade more efficient.

Clearly this idea needs more thinking and analysis as there are many details that need to be elaborated. This could be done by a group of knowledgeable market analysts, but if implemented it could go some way to instill more confidence in global food commodity markets.

3.5. Market based approaches to managing market volatility

The idea of this approach is to utilize existing market instruments to anticipate food price spikes and insure against their adverse consequences. The major way to do this is via futures and options contracts or similar “over the counter” (OTC) instruments. The problem to deal with is whether the use of organized or OTC futures and options markets can reduce the unpredictability of the food import bill, and at what cost.

Consider an agent who needs to plan imports of some basic food and desires to protect himself against a price spike. By buying a futures contract or a call option contract (namely the right to purchase at a future date an amount of the commodity at a prespecified strike price), the agent hedges the risk of a price spike, by locking in a maximum price for the subsequent transaction. When the subsequent transaction in the cash market is executed, the agent can lift the hedge by executing and opposite transaction in the futures or option market (namely sell the futures contract or exercise the option contract if prices have moved above the strike price), so as to counteract any price variation that was not anticipated at the time of planning[4]. While, on average this type of hedge will not make or lose money, there will be a significant reduction in the conditional volatility of both price and subsequent purchases. The major advantage to the hedger is that the subsequent price for the transaction is known much better than if the agent waited until the time the supplies need to be ordered. In other words predictability is enhanced.

Sarris, Conforti and Prakash (2011) as well as Dana, Gilbert and Shim (2006) have examined in detail cases of food importers using futures and options in organized markets and have shown that indeed there are substantial reductions in unpredictability.

A drawback of using these types of instruments in a developing country context is that credit requirements arising from the need to manage on a daily basis the exchange margin calls (in the case of futures), may run up against credit constraints. Another drawback is that if the futures market moves in an opposite direction from the one that the hedge anticipated, the agent (which could be a government agency) may have to lose money, which may be unacceptable to the financing authorities. Call options lessen these problems as they basically act as price insurance, by allowing an agent to lock a maximum price for subsequent imports. The cost is that on average the reduction in unpredictability is smaller than when futures are utilized (Sarris, et. al. 2011). On the other hand options are more flexible and with known ex-ante costs. They are also less costly than physical stocks.

3.6. Compensatory finance systems

These systems arose in the 1970s and 1980s from the need to assist developing commodity exporting countries to deal with sudden drops in export commodity prices. The main ones that have been instituted are the IMF Compensatory Financing Facility (CFF), and the European Union's STABEX, which was replaced by the FLEX.

The IMF's CFF (for more extensive recent discussions see Gilbert and Tabova, 2011, and Konandreas, 2011) was created in 1963 and the cereal import element was added in 1981, following the food crisis of 1973-75. Its primary purpose was to help IMF members cope with temporary export shortfalls and high cereal import costs which create balance of payments problems. IMF arrangements and conditionalities applied to such borrowing. The main benefit to the countries that used it was an additional IMF window. However, while the trigger for

[4] The hedge will be affected by "basis risk", namely the imperfect correlation between the border price of the country where the agent operates, and the price at the exchange where the hedge is placed.

disbursements was tied to commodity prices, the schedule for repayments was not tied to export recovery or import cost declines. This tended to undermine its unique function. Strict eligibility requirements and costly financial terms led to it not being used very much by countries, and it was officially abolished in 2009. A smaller IMF scheme named the "Exogenous Shock Facility" (ESF) was established in 2006 to provide quick and easy access to concessional financing for low income countries facing exogenous shocks such as food commodity price spikes, natural disasters, or other exogenous crises. Conditionalities under this scheme are restricted to measures needed to adjust to the shock. The system is currently active.

The EU's STABEX was active between 1975 and 2000 as part of the Conventions signed between the EU and its former colonies in the Asian Caribbean and Pacific (the ACP countries), many of which were dependent of commodities for the bulk of their external income. The idea was to compensate the governments of the ACP countries, on a grant basis, for export income shortfalls due to variations in export prices or export quantities. The funds were given, ex-post to the governments, which used them during early periods in a flexible way as balance of payments support, while later they were targeted mostly to the sector affected by the shock. The compensation was given for earnings shortfalls in individual commodities rather than a group of commodities. There were several shortcomings of the STABEX, such as delays in fund disbursements that tended to making them procyclical rather than countercyclical, its tendency to not stabilize export earnings, and others, that led the EU to replace the scheme in 2000 by the Fluctuations of Exports (FLEX) scheme. The FLEX had many of the principles of the STABEX, but was designed for faster disbursement, and triggers based on overall export income losses rather that on commodity specific losses.

The basic problem of all compensatory finance schemes is that they are of necessity backward looking, and hence slowly disbursing. This does not help with smoothing of the export income fluctuations. Food import bill variations have not been part of the STABEX or FLEX schemes, albeit the balance of payments and other impacts maybe similar. If, however, they were to be made part of the existing compensatory finance schemes they would be plagued by similar problems as the existing instruments. They have been viewed by most analysts as additional development assistance tools, rather than commodity risk management schemes.

3.7. Safety nets

The idea of a food related safety net is to have a system whereby sudden erosion of the capacity of food insecure households or countries to maintain food consumption, can be dealt with by rapid access to financial resources and food commodities targeted to those most vulnerable to food price spikes. Several developing countries have such quick reaction programs, and international assistance could help the affected countries keep the cost of such programs reasonably low in times of crisis. An example of such a global safety net program is the World Bank's Global Food Crisis Response Program (GFCRP) that became operational in 2008. The program aims to reduce the negative impact of high food prices on the poor, help countries in the design of policies to

mitigate the adverse impacts of volatile food prices, and support food producers to enhance productivity and reduce vulnerability to future crises.

The GFRP envisages policy instruments to reduce consumer prices (such as food taxes and import tariffs), safety nets in the form of funds to provide cheap food to targeted poor, and financing and technical assistance to increase agricultural supply. Its major advantage is that it is quick disbursing. According to Gilbert and Tabova (2011), as of January 2011, the GFCRP has approved 1443.6 million US$ in projects and 75 percent of that has been disbursed. The facility, however has a fixed time limit and may end in 2011. The facility depends considerably on donor support, which has been substantial. The main issue with such programs is their sustainability in the future. The GFFR proposed above could be a way to enhance sustainability in a cost effective way.

4. International responses to the recent food crisis

The international response to the recent global food crisis started in June 2008 at the high-level Conference on world food security convened by FAO in Rome. In the declaration of that conference, the high-level representatives of 181 governments resolved to make food security part of their permanent national policies, and decided to respond quickly to the short-term needs for assistance of affected countries, to support agricultural production and trade, to undertake initiatives to moderate unusual fluctuations in food grain prices, and enhance risk management for affected countries. The conference acknowledged the world's food system vulnerability to commodity shocks, and resolved to help make the system more resilient.

According to the conceptual framework proposed by Hiemenz (2012), the international response to food price volatility "is an example of what modern political science calls the "new sovereignty". National governments give up part of their national sovereignty and cooperate with each other to accomplish objectives which they cannot accomplish acting alone in their jurisdictions. They form trans-governmental regimes and networks such as the G8 or the G20, the EU, the World Trade Organization, or, most comprehensively, the UN to tackle regional or global problems which require coordinated intervention towards a common objective (such as human rights, global security, climate change, etc.)." These networks help build trust among participants but also create frictions as unequal access to information as well as difference in political and economic power can influence the agenda and outcomes. Countries that are not satisfied can ignore decisions that require political action or can just not participate in any agreement or institution that is created. Any intergovernmental agreement requires a set of institutions capable of implementing or enforcing a decision. Such institutions can be national (such as development agencies or regulatory bodies or central banks) or international organizations such as the World Bank, the IMF, the UN, the WTO etc. Concerning responses to food price volatility, the relevant questions to pose in viewing the international responses include the self-interest of participating countries, their ability to influence the agenda, the capacity of governments to translate supranational decisions into national legislation, and the capacity of international organizations to play a role.

In 2009, under the weight of the 2007-8 financial crisis, and estimates that because of the high food prices at least 100 million more people in DCs were thrown into extreme poverty and hunger, the Heads of the G8 states decided to launch the L'Acquila Food Security Initiative (AFSI), determining to "act with the scale and urgency needed to achieve sustainable global food security". The Initiative aimed at achieving sustainable global food security by promoting agricultural production and productivity growth, agricultural investments, emergency relief strategies, rural and economy-wide growth, as well as external factors conducive to improving food security such as open international commodity markets. In addition, G8 countries and 19 other participating developed and developing countries made commitments towards mobilizing US$ 22.2 billion over a three year period. As of the end 2012 more than 67 percent of these pledges had been disbursed.

The L'Aquila Initiative was unique in that it acknowledged food security as a global governance problem requiring coordinated action by the international community; made the link between food security and the macro-economic and financial environment; and solicited the cooperation of international and regional organizations in promoting food security. Concerning food price volatility related issues, the AFSI supported cash based social protection systems and targeted nutrition interventions and called for removal of export restrictions and consultations in advance of such restrictions. It also asked for a system of stockholding to deal with humanitarian crises. Finally it called for expansion of risk management instruments.

In 2010 the G-20 in Seoul discussed the AFSI. Despite the fact that the Seoul meeting focused mostly on financial issues, given the global financial crisis, the final declaration called for more work towards better regulation of financial derivative markets and futures markets. It called for support of trade finance, and invited relevant international organizations to develop, for the 2011 Summit in France, proposals to better manage and mitigate risks of food price volatility without distorting market behavior.

In preparation for the 2011 G20 summit in Cannes, there was a report prepared by 10 international agencies (FAO, et. al, 2011), which presented 10 major recommendations to deal with food price volatility. These included policies for increased agricultural productivity, the establishment of an agricultural market information system (AMIS), the increased transparency and efficiency of agricultural futures markets, improving market access and reducing trade distorting supports within the WTO, as well as defining critical food shortages as a precondition for allowing export restrictions, to strengthen the commitments made in L'Aquila to allow humanitarian food purchase to be exempted from food export restrictions, to remove subsidies on biofuels, to support food emergency reserves, to support developing countries with contingent financing from international financial institutions, to support targeted safety nets, to make available to vulnerable households market based risk management instruments and provide relevant services, and strengthen policy coordination in relation to food price volatility.

Based on this report the 2011 meeting of the G20 agriculture ministers adopted a draft "Action plan on food price volatility and agriculture" (Action Plan) in June 2011, that was to form the basis

for the Cannes summit decisions. While the action plan endorsed several of the recommendations of the interagency report, it did not mention anything concerning agricultural financial markets and the control of excessive speculation. The Cannes G20 Summit declaration had a whole section devoted to Food price volatility and increasing agricultural production. It endorsed the Action Plan and decided to act on the five objectives of that Plan, namely (i) improving agricultural production and productivity, (ii) increasing market information and transparency, (iii) reducing the effects of price volatility on the most vulnerable, (iv) strengthening international policy coordination, and (v) improving the functioning of agricultural derivatives markets. It launched AMIS, and the "Global Agricultural Geo-monitoring initiative" to coordinate satellite monitoring observation systems around the world to enhance crop production projections. It endorsed recommendations by the International Organization of Securities Commissions (IOSCO), and launched a rapid response forum, based in Rome, to improve international policy coordination and common responses in times of market crises. Concerning protection for the most vulnerable, it supported the provision of and advice for modern risk management instruments, such as weather index insurance, contingent financing tools, and commodity hedging instruments to low income countries. Clearly none of these instruments and approaches tackles the compensatory financing needs of low income countries affected by high food prices, and there was no mention of any resources that were to be made available towards the objectives of the declaration. Similarly no mention was made of the humanitarian emergency reserve, as it would require resources that were not forthcoming.

Following the Cannes summit, an early warning system was established with AMIS as well as the rapid response forum, but there were no financial resources made available. In terms of commodity market regulations, both the US as well as the EU drafted new financial market regulations. As the agricultural commodity market regulation issues were bundled with other commodity market issues, in particular those of energy markets, the specificity of agricultural markets, such as seasonality issues, was lost.

In May 2012 at the camp David G8 meeting, the New Alliance for Food Security and Nuitrition was launched, the innovation of which was that it welcomed the participation of the private sector in increasing capital flow towards agricultural development. The G8 declaration also mentioned the management of risk as one of the ways to lift 50 million people out of poverty in ten years. Nevertheless, it offered no specifics.

In preparation for the Los Cabos Mexico G20 summit, G20 agricultural vice ministers took stock of the progress after Cannes, and the Action Plan. They noted and welcomed the meager developments since the Cannes Summit, such as AMIS, the Rapid Response Forum, the GEO Global Agricultural Monitoring Systems (GEO-GLAM) and the commitment in ECOWAS to establish a pilot regional emergency humanitarian reserve, the efforts by several international institutions to provide services and instruments of market based risk management in agriculture, and re-endorsed the Action Plan but made no new commitments, financial or otherwise towards mitigating the effects of price volatility.

The Los Cabos G20 June 2012 Summit declaration, which took place in the middle of continuing high food commodity prices, had a whole chapter devoted to "enhancing food security and addressing commodity price volatility". It first supported the agriculture vice-ministers report, especially on progress made on increasing agricultural productivity. Then it reaffirmed support for efforts such as AMIS, GEO-GLAM, the Rapid Response Forum, and the provision of risk management instruments. The declaration stressed the importance of well-functioning and transparent physical and financial commodity markets, and reduced excessive price volatility to achieve food security and inclusive growth. While recognizing that "mitigating the negative effects of commodity price volatility on the most vulnerable is an important component of reducing poverty, and boosting economic growth", they only resolved to ask G20 finance ministers to report on how G20 has contributed to better functioning of these markets. Thus no concrete measures were proposed.

Following the Los Cabos G20 summit, president Hollande of France launched in September 2012 a global campaign to win support for creating strategic stockpiles of agricultural commodities. Amid fears that the world could be on the brink of a third food price panic in four years after dire droughts in the U.S. Midwest and the Black Sea area, Mr. Hollande's comments once again put France in the forefront of efforts to give major producers and consumers greater power to prevent price spikes. He stressed the importance of market and crisis management policies through strategic food stocks.

France had first raised the issue of food reserves in 2011 as it chaired the Group G20. But the final declaration limited promises to institute food aid stocks in countries that could most need them, a measure that is yet to be implemented. His call met resistance from several key countries including the US, which had considerable experience with food commodity stocks, only to find out that they were not only costly, but also did not help prevent price spikes. In addition analysts have long known that such stocks are very difficult to manage both technically, as well as geographically. While food commodity stocks may produce desirable market outcomes in specific countries, as rice stocks have done in several Asian countries, international coordination is quite difficult. The French initiative does not seem to have found international support, as there is no mention of it in any subsequent high level meetings, or the WTO decisions in Bali in December 2013.

In June 2013, the G8 leaders in Lough Erne highlighted global food security in their declaration, but apart from promises to advance action in the areas of leadership, accountability, participation, and ensuring that there is impact on smallholders and women, there was no mention of agricultural market volatility or any commitments to act in any relevant areas.

In September 2013, the declaration of the leaders of the G20 in St Petersburg, reaffirmed the commitment to food security and nutrition, encouraged ongoing effort in the agricultural sector to reduce hunger, under-nutrition and malnutrition, endorsed actions to increase production and productivity, endorsed targeted and market non-distorting support for vulnerable population, and reaffirmed commitments to implement previous G20 commitments including those stated in the

Action Plan which was adopted in 2011. All other mention of commodity action was concentrated in the energy sector. No mention of any further financial support or institutional action or innovation relating to food market volatility was made.

The most recent international action relevant to food market volatility and food security took place at the WTO ministerial meeting in Bali Indonesia in December 2013. The major decision concerning food market functioning and rules was the decision on food stockholding. The discussion was motivated by a G33 proposal, which focused on allowing developing countries to not include domestic food purchases from small holder farmers to be held as stocks in the country's Aggregate Measure of Support (AMS) allowances. The proposal was strongly supported by India, in light of it large purchases of rice and wheat for its Public Distribution System (PDS), but was resisted by several other countries both developed as well as some developing, as such practices may distort international markets. The compromise reached in Bali allowed WTO Members to use an interim mechanism, and postponed final decision to the 2017 WTO ministerial conference.

Concerning compensatory finance for countries vulnerable to food shocks, the only facility that currently exists is the IMF's Exogenous Shocks Facility (ESF), which was established in 2008, and includes a High Access Component (HAC) that provides concessional financing for countries eligible under the Poverty Reduction and Growth Trust (PRGT), facing balance of payments difficulties caused by sudden and exogenous shocks. This has been superseded as of 2013 by the Standby Credit Facility (SCF), which provides financial assistance to Low Income Countries (LICs) with short term balance of payments problems in times of shocks or crises. Funds available under this facility are loans that carry low interest rates (0.25 percent), have a grace period of 4 years, and are subject to the IMF's conditionalities that aim to correct the causes, if any, of the situation that brought about the shock or crisis. The IMF also has other relevant short term financing instruments such as the Rapid Credit Facility. While several countries received support under the ESF since 2008, and it remains the IMF's main compensatory financing mechanism, complaints remain that it is too cumbersome and subject to conditionalities.

The only other compensatory finance mechanism available is the EU's FLEX facility. Reviews of its performance have shown that this facility has suffered from inadequate finance and delays in the financing procedures. The EU's V-FLEX mechanism that was approved in 2010 is a short term instrument designed to support vulnerable ACP countries subject to external shocks, and has received support of 500 million Euro but for only two years. This is in addition to the 1 billion Euro Food Facility approved by the EU on March 2009 and the allocation of 200 million Euro under the 2008 EDF to help developing countries to cope with higher food prices. The funds available from these programs are grants, compared to the IMF funds that are loans. 26 ACP countries were targeted for these funds in 2009-10.

5. Initiatives concerning deregulation of commodity derivative markets

While the discussions concerning global food market volatility and appropriate responses, including those concerning developing countries, have continued at a high level since 2006, a parallel development, which has been reinforced by the global financial crisis, has concerned the stronger regulation of commodity derivative markets. The push for such initiative has come from the belief of many market and non-market participants and observers that the global food crisis was caused by excessive speculation, especially in unorganized derivative markets. This despite inconclusive evidence of many studies regarding this hypothesis (for a review see Ederer, et. al. 2013). A political consensus seems to have emerged on regulatory measures to reduce excessive speculation in commodity derivative markets.

The G20 is currently the most active place for discussions on the regulation of commodity derivative markets at the international level, also given that the G20 countries together host nearly all of the major global commodity futures markets (with the US, Europe, India, China, Brazil and South Africa being the largest). This is problematic as the G20 is not representative and in particular many developing countries that are strongly impacted by commodity prices are not included. A more representative intergovernmental organization such as the UN would be more adequate for international regulatory discussions.

As reflected in the agendas of the last G20 meetings, a relatively broad consensus has developed to curb "excessive speculation" on commodity derivative markets, in particular related to agriculture commodities. Despite important momentum, G20 discussions and proposals have however shifted away from broader economic policy reforms to address commodity price volatility toward a narrow focus on market transparency. This approach was made clear with the G20's "Action Plan on Food Price Volatility and Agriculture" adopted by the group's agricultural ministers in June 2011 where important policy issues, including speculation, were only marginally addressed (Clapp 2012). Regarding financial speculation, the G20 merely recognized the need for "appropriately regulated and transparent agriculture financial markets" (G20 2011: para 52).

Despite limitations in the G20's general approach, some commitments were still agreed concerning commodity derivative market regulation. As the G20 has no enforcement capacities, it generally agrees on commitments that need to be implemented through legislation by member countries (or that member countries have already or are planning to implement given the compromise nature of commitments). Three policy objectives have been at the center of commodity derivative market reform since the first G20 summit in Washington D.C. in November 2008 – (i) improving transparency, (ii) mitigating risk related to over the counter (OTC) trading, and (iii) protecting against market abuse.

In the US and the EU important regulatory initiatives have been under way with a focus on improving transparency, regulating over the counter trade, installing position limits and strengthening regulatory authorities (for a thorough review see Staritz and Kublblock, 2013). In the

US in July 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act changed the regulatory framework in the US for OTC financial derivatives. In Section VII, the law provided, at the federal level, for the establishment of new market regulation on swaps and security-based swaps.

The main objectives of reform were: to bring public market transparency and the benefits of competition to the swaps marketplace; lower the risk of the interconnected financial system by bringing standardised swaps into centralised clearing; to ensure that the swap dealers and major swap participants were specifically regulated; to increase transparency to regulators (swap data epositories); to improve pre--trade transparency of swap transactions; to enhance the price discovery process for market participants and the public; and to impose position limits on several (28 different) agricultural commodities.

The regulation and supervision of swaps, swaps dealers and major swap participants in the OTC market of derivatives was attributed to the Commission Futures Trade Commission (CFTC). The Securities and Exchange Commission (SEC) and the Federal Reserve Board (FRB) have also regulatory competences.

The Dodd--Frank Act came into force on July 2011, but its implementation was delayed until late 2012. Furthermore, the Dodd-Frank Act's mandate to the CFTC imposing stricter position limits was rejected in court and remains under threat. Financial lobbies argued that the CFTC failed to determine whether those limits were either "necessary" or "appropriate". The US court ruling on position limits will have substantial effects not just for US regulation but potentially also for the EU. If the ability of the CFTC to impose position limits is constrained by a requirement to prove their need, the EU may feel pressure to weaken its rules as well (Clapp and Helleiner, 2012).

In the EU, in 2012 the European Commission's Directorate General for Agriculture and Rural Development (DG AGRI) set up a consultative "Expert Group on Agricultural Commodity Derivatives and Spot Markets" whose tasks would be to provide advice and expertise to the Commission services concerning: the functioning of the agricultural commodity derivatives and spot markets; the implementing of existing EU legislation and policies; and, finally, the preparation of legislative proposals and policy initiatives in this field.

The so-called "Barnier Package" is a major EU development which enables the EU to deliver the G20 commitments on derivatives/swap markets setting out new rules on clearing, transparency and trading. The objectives are

- To reduce risk in financial firms and systems by clearing all standardised swaps through central counterparties,
- To shed light on this opaque market and report all trades to trade repositories,
- Where appropriate, to move standardised swaps to venues to increase market transparency.

The most relevant element of the Barnier Package is the European Market Infrastructure Regulation

(called EMIR). It is aimed at outlining a regulatory framework for OTC derivative contracts. The proposal of regulation was presented by the Commission in September 2010. In February 2012, the European Parliament and the Council reached agreement. The final text was published in July 2012 and entered into force on 16 August 2012.

The new Regulation ensures that information on all European derivative transactions will be reported to trade repositories and be accessible to supervisory authorities, including the European Securities and Markets Authority (ESMA), to give policy makers and supervisors a clear overview of what is going on in the markets.

The Regulation also requires standard derivative contracts to be cleared through Central-Counter-Parties (CCPs) as well as margins for uncleared trades and establishes stringent organisational, business conduct and prudential requirements for these CCPs. The legislation means financial firms trading OTC commodity derivatives will also have to clear trades, while non--financial firms will only become subject to the clearing requirement if their positions breach a threshold of 3 billion euro.

In December 2012, the European Commission adopted nine regulatory and implementing technical standards to complement the obligations defined under the Regulation on OTC derivatives, Central-Counter-Parties (CCPs) and trade repositories. They were developed by the European Securities and Markets Authority (ESMA) and have been endorsed by the European Commission without modification. These texts were published on 23 February 2013 and entered into force on 15 March 2013. The adoption of these technical standards finalised requirements for the mandatory clearing and reporting of transactions, in line with the EU's G20 commitments.

Staritz and Kublblock, (2013) give an assessment of relevant EU and US regulation on commodity derivative markets. Based on this analysis, the EU and US regulations on commodity derivative markets have important limitations, in particular in the form of exemptions, which question their effectiveness. Position limits do not for example explicitly cover certain types of trading such as OTC in the EU, while the coverage of OTC trade in the US was rejected in court and remains contested. Exemptions could also include some actors at national level. Commercial traders as a class are usually exempted from many requirements. To date EU decision makers have only debated position limits on individual traders, as a percentage of the market, doing little to curb excessive speculation.

In other areas, regulations were not even on the agenda, such as price stabilisation instruments, restrictions on certain trading strategies (e.g. index--based investments and technical/algorithmic trading) or actors (institutional investors) and volatility and large price swings. Only for high frequency trading (HFT), EU proposals include explicit regulations while the US CFTC only installed a sub-committee for discussions on defining and regulating HFT.

6. Assessment and conclusions

The period of high and volatile commodity food prices that started in 2006 and has continued since then has made it a major item of international discussions. The issue of supporting food dependent low income developing countries to deal with unexpected food shocks, especially those that are not of their own making, has been relatively high on the agendas of high level meetings, since 2006. However, not much has been accomplished in terms of additional resources to support new institutions designed to deal with such unusual events. The reason maybe that the most vulnerable of these countries do not have a voice in setting the agendas of the G8 or G20 meetings, albeit some of the members of these high level groups are concerned about political unrest in their own economies from high food prices. With declining world food prices, the risk is that the item may disappear from the priorities of major donors, as it did after the past world food crises.

Another reason for the slow or no progress in adopting policies relevant to the needs of NFIDCs, is that conceptually the efforts have centered upon the visible parts of the markets, namely prices and activities on exchanges, rather than the underlying factors that create excessive speculation. As mentioned earlier, market volatility and risk comes out of uncertainty about future events, as well as the actions of market participants. There has been no initiative or effort towards reducing market uncertainty, for instance by adopting some kind of early warning system for food crises or a better information system. The AMIS is one such development but of necessity it is very slow and fails to inform early enough about potential shortages and other production related shocks that may affect markets. Similarly the effort to regulate derivatives and organized exchanges hardly tackles the underlying causes of market uncertainty.

Assuming that the policies discussed in section 3 are among those that are most relevant for dealing with the food risks of NFIDCs, it seems that very little has been done to advance any of them, despite the fact that some have been on the international agenda for a long time (eg the FIFF proposal and the emergency reserve idea). Nevertheless, the continuing high global food prices have helped preserve donor interest in the issues, and has generated or redirected some extra development aid resources towards projects or institutions that deal with food commodity market volatility. The hope is that the world will be better informed and prepared, and vulnerable countries will have more options to deal with future food commodity crises.

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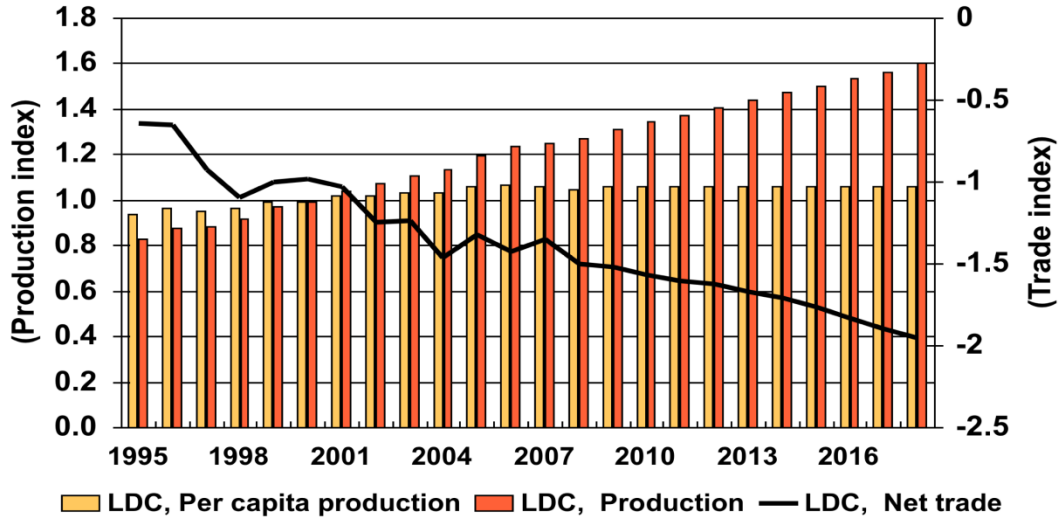
Annexes : figures

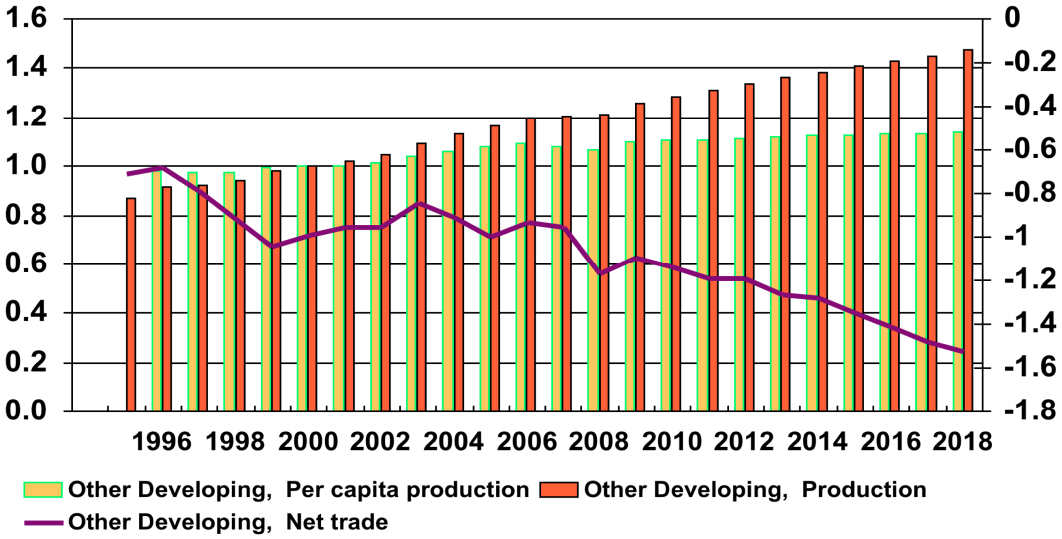
Figure 1. Medium term OECD-FAO projections of agricultural production and net trade for LDCs



(Base 1999-2001=1)

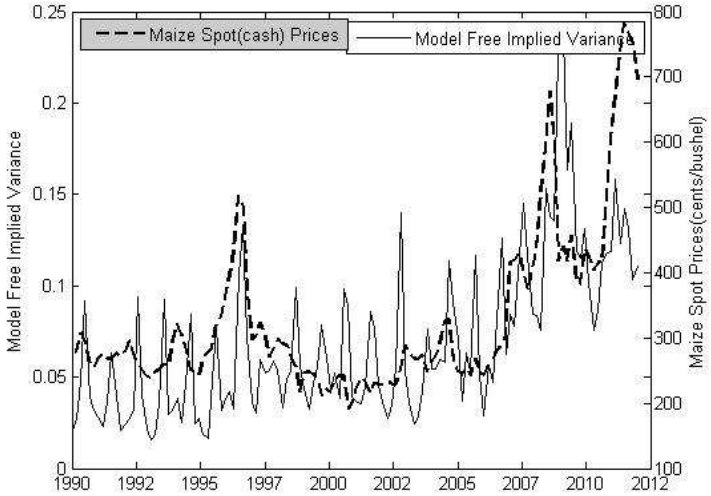
Source: FAO Secretariat

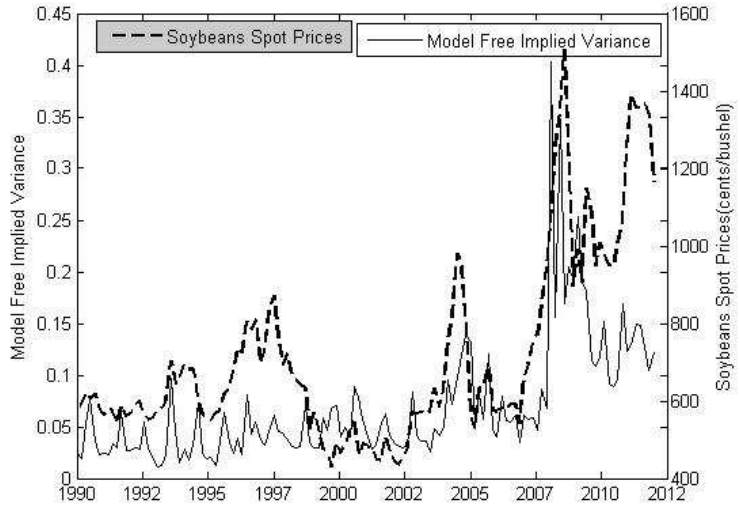
Figure 2. Medium term OECD-FAO projections of agricultural production and net trade for developing non-LDC non-BRIC countries (Base 1999-2001=1)

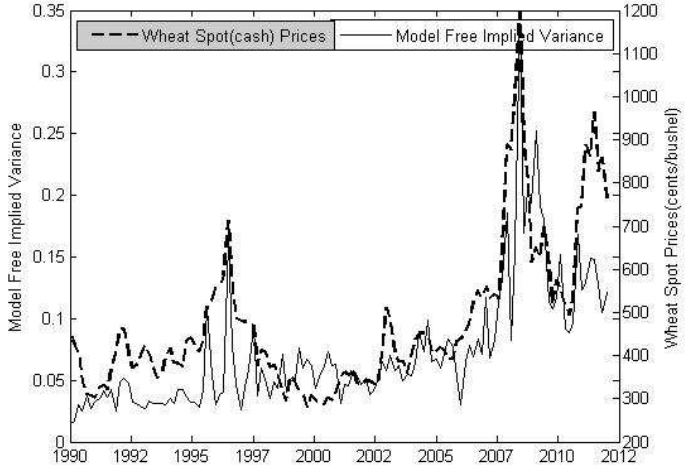


Source. FAO Secretariat

Figure 3. 2-month ahead model free implied conditional price variance, and corresponding spot prices for maize, wheat and soybeans from January 1990 to December 2011 (using option and spot price data from Chicago Mercantile Exchange).







Source: Triantafyllou, Dotsis, Sarris (2013)

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Pascal

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