

# Food Commodities Speculation and Food Price Crises

## Regulation to reduce the risks of price volatility

### SUMMARY

In this briefing note, the UN Special Rapporteur on the right to food examines the impact of speculation on the volatility of the prices of basic food commodities, and he identifies possible solutions forward. The global food price crisis that occurred between 2007 and 2008, and which affects many developing countries to this day, had a number of causes. The initial causes related to market fundamentals, including the supply and demand for food commodities, transportation and storage costs, and an increase in the price of agricultural inputs. However, a significant portion of the increases in price and volatility of essential food commodities can only be explained by the emergence of a speculative bubble.

In particular, there is a reason to believe that a significant role was played by the entry into markets for derivatives based on food commodities of large, powerful institutional investors such as hedge funds, pension funds and investment banks, all of which are generally unconcerned with agricultural market fundamentals. Such entry was made possible

because of deregulation in important commodity derivatives markets beginning in 2000. These factors have yet to be comprehensively addressed, and to that extent, are still capable of fuelling price rises beyond those levels which would be justified by movements in supply and demand fundamentals. Therefore, fundamental reform of the broader global financial sector is urgently required in order to avert another food price crisis. Previously unregulated Over the Counter (OTC) derivatives must be subject to rules requiring registration and clearing on public exchanges, and exemptions to these rules must be highly restricted. As regards commodity derivatives trading in particular, States should ensure that dealing with food commodity derivatives is restricted as far as possible to qualified and knowledgeable investors who deal with such instruments on the basis of expectations regarding market fundamentals, rather than mainly or only by speculative motives. These measures would enable States to fulfill their legal obligations arising under the human right to food.

## THE FOOD PRICE CRISIS OF 2008

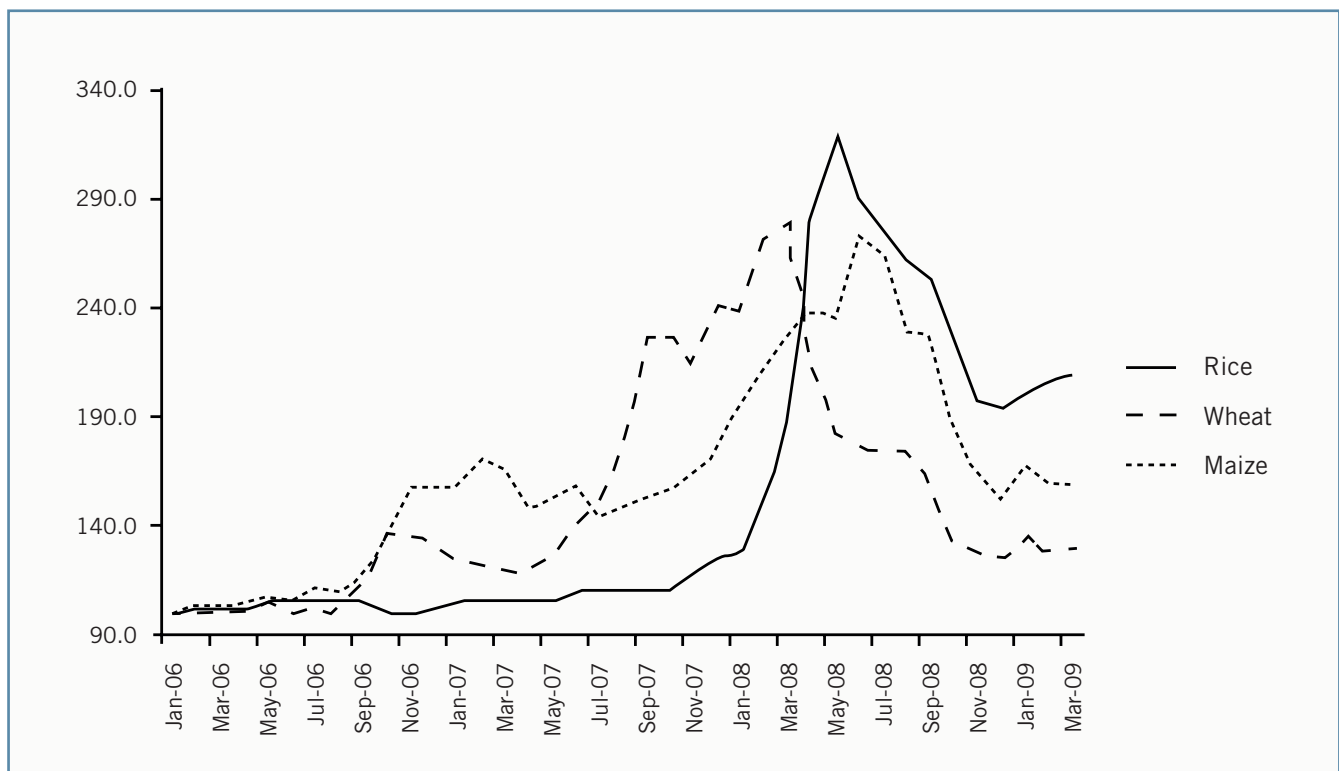
As a result of the increases in prices of basic food commodities and oil in 2007-2008, the number of people in extreme poverty rose by 130 to 150 million, according to an estimate of the World Bank<sup>1</sup>. At least 40 million people around the world were driven into hunger and deprivation as a result of the 2008 food price crisis, raising the total number of people living in hunger to 963 million in 2008<sup>2</sup>. As is nearly always the case, the brunt of the food price spike was borne by people in the Low Income Food Deficit Countries (LIFDCs), or the poorest developing countries<sup>3</sup>. In these countries, of special concern are the urban and rural poor who even at the best of times must spend up to four-fifths of their income on food<sup>4</sup>. The food price crisis undermined this already meagre ability to meet essential food needs<sup>5</sup>. This should not be allowed to recur. This note seeks to explain the role that speculation on the commodities markets may play in increasing volatility of prices, and what can be done about it in order to better protect the right to adequate food.

Beginning around 2005, markets for numerous agricultural commodities started to witness price increases and higher levels of volatility (see **Figure 1**). According to a document circulated under the auspices

of the UN Conference on Trade and Development (UNCTAD), food prices rose by 83% between 2005 and 2008<sup>6</sup>, with maize prices nearly tripling, wheat prices increasing by 127%, and rice prices by 170% between January 2005 and June 2008<sup>7</sup>. Moreover, the June 2010 issue of *Food Outlook* published by the UN Food and Agriculture Organization (FAO) finds that implied volatility<sup>8</sup> in wheat and soy rose steadily from 2005 to 2008, and that the rise in implied volatility for maize continued, albeit at a much lower rate, until 2009<sup>9</sup>.

At present, there is a lively debate as to whether these developments were the result of factors adversely affecting food supply, or whether they were caused by excessive speculation in food commodities derivatives (see page 9). Advocates of the first position maintain that the price spikes were attributable to factors such as a decline in the rate of growth of food production<sup>10</sup>, climate change and water depletion<sup>11</sup>, and the growth of biofuels<sup>12</sup>. For instance, Wright and Bobenrieth argue that the roots of the food price crisis lie in the fact that between 2007 and 2008, stocks of world wheat, maize and rice were low<sup>13</sup>. Wheat production, they note, was lower than expected because of a severe drought in Australia, and (according to the IMF<sup>14</sup>) consumers in China and India developed a taste for meat which drove up grain prices<sup>15</sup>.

**Figure 1 - Index numbers of world trade prices**



**Source:** Jayati Ghosh, "The unnatural coupling: Food and Global Finance" (2010), at 76. Using data accessed on 29 March 2009, from: <http://faostat.fao.org/>.

## Insufficient explanations

Certainly, supply and demand fundamentals played an important role in the creation of the food crisis. However, closer examination reveals that the abovementioned arguments of supply and demand are insufficient to explain the full extent of the increases and volatility in food prices. For instance, the price of rice rose by 165% between April 2007 and April 2008<sup>16</sup> - a magnitude difficult to explain by reference to market fundamentals. In fact, Wright and Bobenrieth acknowledge that “rice stocks were not unusually low in 2007/2008” and that even though maize stocks were low, production remained high<sup>17</sup>. Nor, as Wahl observes, is it likely that a group of people suddenly developed a taste for consuming vast quantities of dairy products, driving its price up by 157% between 2006 and November 2007, only to lose it starting from July 2008, allowing prices to start falling again<sup>18</sup>.

It is also difficult to accept the IMF's thesis that the food price increases were the result of *per capita* income growth in China, India, and other emerging economies which fed demand for meat and related animal feeds such as grains, soybeans, and edible oils. That interpretation is not corroborated by data collected by the FAO for the period concerned: that data shows variously, that the supply and utilization of wheat and coarse grain increased at roughly uniform rates, that end of season stocks for grains had generally increased significantly, and that China and India exhibited falling aggregate and *per capita* food grain consumption<sup>19</sup>.

## The speculative bubble effect

Instead, a number of signs indicate that a significant portion of the price spike was due to the emergence of a speculative bubble. Prices for a number of commodities fluctuated too wildly within such limited time-frames for such price behaviour to have been a result of movements in supply and demand: wheat prices, for instance, rose by 46% between January 10 and February 26, 2008, fell back almost completely by May 19, increased again by 21% until early June, and began falling again from August<sup>20</sup>. The 2008 food price crisis was unique in that it was possibly the first price crisis that occurred in an economic environment characterized by massive amounts of novel forms of speculation in commodity derivative markets.

The particular area of concern is speculation in derivatives based on food commodities. A study conducted by Lehman Brothers just before its bankruptcy revealed that the volume of index fund speculation increased by 1,900% between 2003 and March 2008<sup>21</sup>. Morgan Stanley estimated that the number of outstanding contracts in maize futures increased from 500,000 in 2003 to almost 2.5 million in 2008<sup>22</sup>. Holdings in commodity index funds ballooned from US\$ 13 billion in 2003 to US\$ 317 billion by 2008<sup>23</sup>. In the light of such

developments, the UNCTAD Trade and Development Report 2009 found that “the trend towards greater financialisation of commodity trading is likely to have increased the number and relative size of price changes that are unrelated to market fundamentals”<sup>24</sup>. In other words, the changes in food prices reflected not so much movements in the supply and/or demand of food, but were driven to a significant extent by speculation that greatly exceeded the liquidity needs of commodity markets to execute the trades of commodity users, such as food processors and agricultural commodity importers.

In fact, while the food price crisis may have been sparked off the abovementioned developments affecting demand and supply, its effects were exacerbated by excessive and insufficiently regulated speculation in commodity derivatives. The promotion of biofuels and other supply shocks were relatively minor catalysts, but they set off a giant speculative bubble in a strained and desperate global financial environment. These factors were then blown out of all proportion by large institutional investors who, faced with the drying up of other financial markets, entered commodity futures markets on a massive scale. Therefore, the policy solutions that are needed to avert another crisis must address both the problems affecting underlying financial market fundamentals, and the conditions under which speculation is allowed to take place in essential food commodities, thereby exacerbating the effects of those movements in market fundamentals.

## SPECULATION IN AGRICULTURE

Speculation in agricultural derivatives has an ancient history. One of the earliest descriptions of derivatives is to be found in Aristotle's *Politics*<sup>25</sup>. Aristotle tells of Thales the Milesian, a professional philosopher who began to tire of being mocked for his poverty. His meteorological expertise led him to anticipate a bumper olive harvest that year, so he hired all the oil presses in Chios and Miletus for the relevant period. The owners of the oil presses were glad to sell him those rights in exchange for cash up front. When the bumper harvest materialized as Thales correctly predicted, he exercised his “option” and became a very rich man, thus demonstrating that “philosophers might be rich if they pleased, but that riches were not the object of their pursuit”<sup>26</sup>.

### Traditional speculation

Traditional speculation in agricultural commodities markets is based on *market fundamentals* – above all on the demand and supply for any particular commodity. Thales purchased his option on the oil presses because he expected the supply of olives to increase. The farmers sold him the option because they were hedging against the risk of a poor olive harvest. This form of speculation is generally considered necessary and useful in the market: it facilitates commercial hedging against risk, and it allows for price discovery, assisting farmers and

buyers in discovering the reasonable price for a particular commodity in individual trades and on spot markets<sup>27</sup>. If the buyer is willing to offer a higher price for a future than before, it means that she expects the eventual price of the commodity to increase further. As such, if the price of commodity futures goes up, it signals to sellers on spot markets to raise their prices. Indeed, the grain futures prices quoted by the Chicago Mercantile Exchange<sup>28</sup> tend to be incorporated directly into grain trade contracts the world over. Moreover, it is conventionally thought that such speculation reduces price volatility, because speculators provide a market for hedgers, and because they buy when the price is low and sell when the price is high, thus evening out extremes of prices<sup>29</sup>.

Of course, such speculation is not an unalloyed blessing: it can have significant price effects without adding anything of economic value<sup>30</sup>. A speculator, unlike other investors in agriculture, does not create new capital such as barns or tractors. If that speculator goes bankrupt, her creditors will have nothing they may satisfy their debts upon<sup>31</sup>. It can also be extremely dangerous – the terrible Bengal famine of 1943 in which 3 million people died, occurred to a large extent because grain traders hoarded essential food grains in anticipation of future higher prices<sup>32</sup>. Such hoarding exacerbated the price spike, thus denying the poorest sections of society access to food.

### Momentum-based speculation

Another form of speculation is *based simply on market momentum*. This has been described as “herding behaviour in times of strong (usually upward) price trends, which *in developed and easily accessible markets* can result in the emergence of speculative bubbles...”<sup>33</sup>. Far from providing a stabilizing hand, such speculation tends to increase price volatility<sup>34</sup>. Such momentum-based speculation may have been the main cause of the food price crisis in 2007-2008.

The particular derivative instruments that require our special attention are the *commodity indexes*. A *commodity index*, put simply, is a mathematical value largely based on the returns of a particular selection of commodity futures. The most famous of these is the S&P GSCI, formerly known as the Goldman Sachs Commodities Index, which was set up by Goldman Sachs in 1991. Others include the Dow Jones-AIG Index and the Rogers International Commodities Index. The composition of the basket of commodity futures varies according to the index, but agricultural commodities normally do not account for the majority of the commodities included in the “basket”. For instance, agricultural commodities only make up 12.2% of the value of the S&P GSCI<sup>35</sup>. Commodity indexes themselves form the basis for a number of instruments such as commodities index funds, commodity exchange traded funds (ETFs), and commodity index swaps. For instance, a commodity index fund is a large sum of money managed by a “sophisticated” manager, who uses that money to buy the

futures that comprise the basket of futures that make up any particular commodity index.

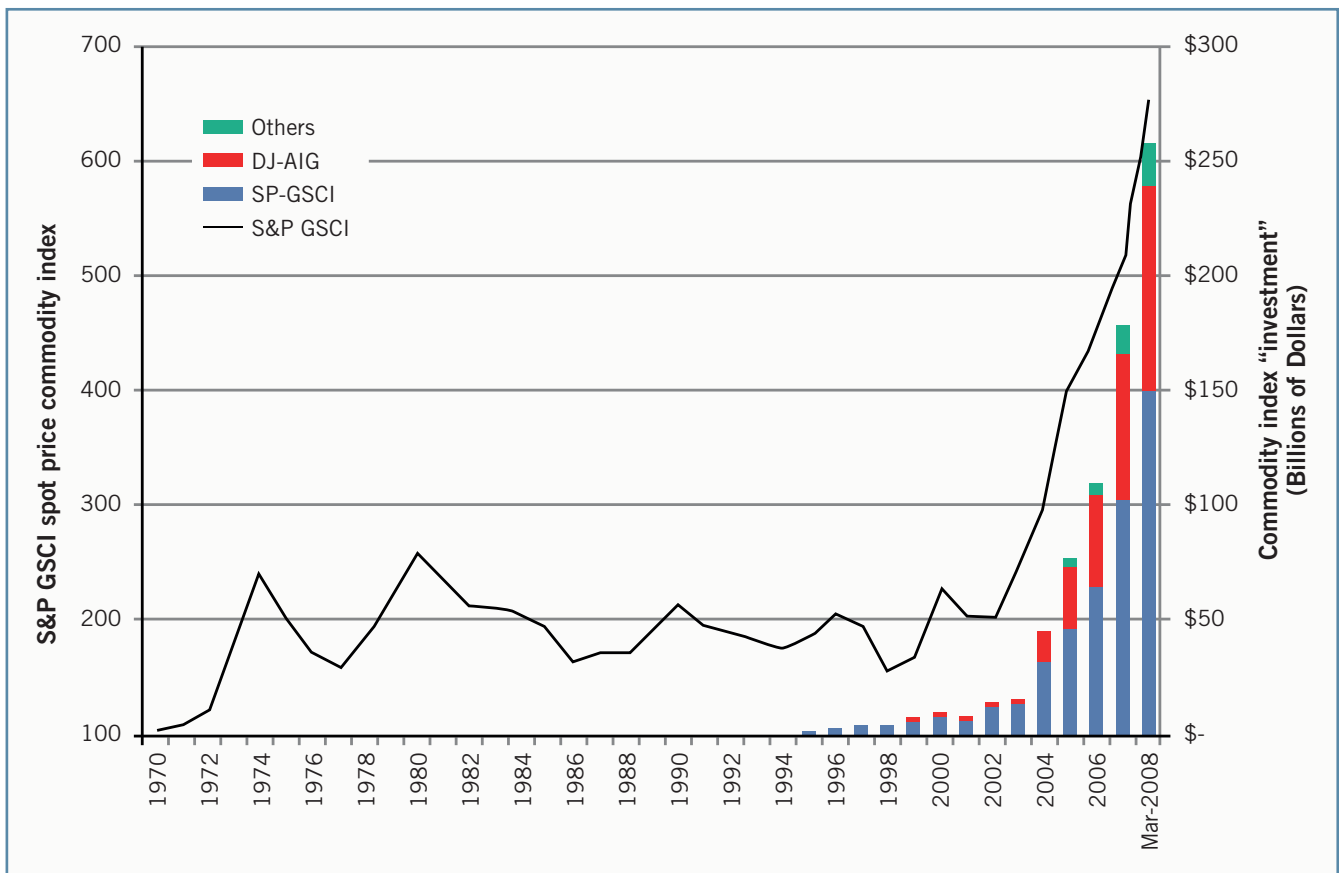
Even though they were advertised to institutional investors as ideal mechanisms for hedging against adverse movements in other financial markets<sup>36</sup>, it could be said that the animating principle behind the commodities index funds was momentum. The strategy evolved by the Goldman Sachs managers who ran the GSCI was to have nothing but “long” positions, to keep on acquiring them, and to “roll” them over as they expired, no matter how high the price of those futures climbed. As Kaufman puts it, the purpose was to accumulate “an everlasting, ever-growing long position, unremittingly regenerated”<sup>37</sup>.

As mentioned above in the section on speculation based on market fundamentals, speculation can be useful because it helps farmers and buyers determine prices. As such, ordinarily, futures prices are lower than spot prices, and this ordinary situation is known as “normal backwardation”<sup>38</sup>. However, the effect of the commodities index funds appears to have been to throw the commodities futures markets into “contango”<sup>39</sup>, producing a vicious circle of prices spiraling upward: the increased prices for futures initially led to small price increases on spot markets; sellers delayed sales in anticipation of more price increases; and buyers increased their purchases to put in stock for fear of even greater future price increases<sup>40</sup>. As is demonstrated by **Figure 2**, when the spot prices increased, this fed an increase in futures prices, which attracted even more speculation, thus setting the whole process into motion once again. Indeed, the whole structure of commodity index speculation was premised upon contango. Commodity index speculation was the gift that was designed to keep on giving.

It is difficult to imagine creatures more different from Thales than the index speculator and the manager of a commodities index fund. The index speculator and the fund manager, far from being acquainted with crop production cycles and patterns, will never see a grain of wheat in their professional lives. Nevertheless, the index speculator and the fund manager have one thing in common with the traditional speculator: whereas the traditional speculator may drive up the price of a commodity by hoarding the physical commodity, the index speculator and the fund manager accomplish the same by hoarding futures contracts for those commodities<sup>41</sup>. However, the index speculator and fund manager are spared the bother of maintaining a warehouse: their hoarding is entirely virtual.

It is important to note that different kinds of speculation in different markets combined to create the food price crisis, and that no one category of market conduct was singly responsible. For instance, market momentum-based speculation in oil contributed to the food price crisis, by affecting fundamental conditions of supply of an essential agricultural input. Petrol is an integral component of modern food supply chains,

Figure 2 - Commodity index investment compared to S&amp;P GSCI spot price commodity index



Source: Jan Kregel, "The impact of changing financial flows on trade and production in developing countries" (August 6–7, 2008) Presentation to Seminar on "*Estructura productiva y dinámica de precios: efectos macro-micro y respuestas de política*" Escuela de Verano de Economías Latinoamericanas, CEPAL, Santiago, Chile.

being used for fertilizers, food processing and transportation, and the rise of bioenergy leads to an increased merger of the food and energy markets<sup>42</sup>. Moreover, small changes in market fundamentals such as oil price increases, the growth of agrofuels, and underinvestment in agriculture can act as a catalyst for momentum-based speculation. The fact that market-momentum based speculation may have been the main contributing cause of the food price increases is no reason to lower one's guard against other factors which also cause food prices to rise. Indeed, we should be ever more vigilant, because momentum-based speculation may magnify the effects of changes in market fundamentals.

## THE LARGER FINANCIAL MARKET

The sudden massive entry of index funds into commodities should be placed against the background of developments in the broader financial markets. Following the passage of the U.S. Commodity Futures Modernization Act in 2000, Over The Counter (OTC)<sup>43</sup> derivatives were exempted from the oversight of the U.S. Commodity Futures Trading Commission (CFTC). As a result of the Commodity Futures Modernization Act and the decisions of the CFTC, such trading was allowed to take place without any position limits, disclosure requirements,

or regulatory oversight<sup>44</sup>. Moreover, the Act permitted for the first time OTC derivatives contracts where neither party was hedging against a pre-existing risk; i.e. where both parties were speculating. Also, it enabled to hedge against those risks by taking positions on exchanges.

At this point, it is crucial to observe the difference between investment in commodities futures and investment in commodity index funds. Commodities futures, being standardized contracts, are traded on exchanges, so investment in them is not OTC. Participation in a commodities index fund, however, is mostly OTC<sup>45</sup>. Institutional investors such as pension funds, typically enter into agreements with fund managers whereby in addition to the investor paying an annual management fee to the manager, it also pays the fund manager the 3-month Treasury Bill rate. In exchange, the fund manager pays the total return on the futures included in the commodities index. Such agreements to exchange streams of income, or "swaps" are almost always traded on an OTC basis<sup>46</sup>. The lack of regulation of such derivatives greatly facilitated the entry of institutional investors into commodities index funds.

To summarise, deregulation in the US allowed purely speculative OTC derivatives to be hedged on exchanges, and

institutional investors participated in commodity index funds by arranging OTC swaps. Understandably, the number of futures and options traded globally on commodity exchanges increased by more than five times between 2002 and 2008<sup>47</sup>. The value of outstanding OTC commodity derivatives grew from 0.44 trillion in 1998, to 0.77 trillion in 2002, to more than US\$ 7.5 trillion in June 2007<sup>48</sup>.

Beginning at the end of 2001, food commodities derivatives markets, and commodities indexes in particular began to see an influx of non-traditional investors, such as pension funds, hedge funds, sovereign wealth funds, and large banks that packaged and dealt the commodity index instruments mentioned above<sup>49</sup>. The reason for this was simply because other markets dried up one by one: the dotcoms vanished at the end of 2001, the stock market soon after, and the U.S. housing market in August 2007. As each bubble burst, these large institutional investors moved into other markets, each traditionally considered more stable than the last. Strong similarities can be seen between the price behaviour of food commodities and other refuge values, such as gold. As the European Commission notes, the prices of both had been largely stable, began to rise slowly in 2005, and accelerated sharply in August 2007, when the subprime crisis hit<sup>50</sup>. Similar behaviour obtained in oil markets, which hit the \$100 per barrel mark in February 2008 and peaked in June 2008, only to fall back subsequently.

In none of these markets was there any restriction of supply or expansion in demand even remotely sufficient to explain the full extent of price increases. The reasons for such movement were twofold. First, because it was thought that markets for food and oil would be profitable because they could not possibly dry up: people may lose interest in asset-backed securitization, but they will always have to eat<sup>51</sup>. Second, as mentioned earlier<sup>52</sup>, a portfolio diversification practice appears to have emerged of spreading out risk in any investment portfolio by balancing out investments in securities or bonds with investments in markets that display unrelated or opposite behaviour, such as food and oil. Indeed, total index-fund investment in corn, soybeans, wheat, cattle and hogs increased from US\$ 10 billion in 2006 to more than US\$ 47 billion in 2007<sup>53</sup>.

But these price increases in commodities futures were possible only if the permanent long positions in them could be funded. Previously, this had been made possible by the low margins that traders had to put up front in order to trade on commodities exchanges. The remainder of the funds could be invested in other financial instruments. The food price bubble burst when the giant non-traditional speculators lost the ability to carry on, as a result of their investments in other markets crashing. When they fell, the upward food price spiral also ended.

## POLICY RESPONSES

The 2008 food price crisis arose because a deeply flawed global financial system exacerbated the impacts of supply and demand movements in food commodities. Reforming the global financial system should therefore be seen as part of the agenda to achieve food security, particularly within poor net food-importing countries.

### US & EU initiatives

The recent Dodd-Frank Act<sup>54</sup> on financial reform passed by the U.S. Congress is encouraging in this regard. With specific relation to agricultural commodities, the Dodd-Frank Act sets out a new Section 4a(c) of the Commodity Exchange Act (CEA), which requires the CFTC to establish, within 270 days of the passage of the Act, limits on the number of agricultural commodities that can be held by any one trader, as well as on energy related commodities and futures. It also requires the CFTC to establish limits on the aggregate number or amount of positions in certain contracts based upon the same underlying commodity that may be held by any one person, including any group or class of traders, for each month. It is to be hoped that the CFTC does not set those limits so high as to be meaningless. On the other hand, the Dodd-Frank Act has not brought about the structural changes in the financial markets many had hoped for; in particular, the “Volcker rule” announced by President Obama in January 2010, which was intended to prevent banks from using taxpayer-backed funds to speculate on financial markets and give up their stakes in hedge funds and private equity funds<sup>55</sup>, has been severely watered down in the Act<sup>56</sup>.

In the European Union, Michel Barnier, the EU Commissioner for the Internal Market and Services, announced on 15 September 2010 a Proposed Regulation on OTC derivatives, central counterparties and trade repositories<sup>57</sup>. This proposed regulation imposes mandatory reporting and clearing (where possible) of OTC derivatives, and stipulates that “non-financial actors” will be subject to the same rules as “financial actors” if they meet certain thresholds. More specifically, an *information* threshold is proposed, which will allow financial authorities to identify non-financial actors that have accumulated significant positions in OTC derivatives, and a *clearing* threshold, which, if exceeded, will render a non-financial actor subject to the clearing obligation<sup>58</sup>. Moreover, the proposal draws a distinction between commercial and financial actors by stipulating that “in calculating the positions for the clearing threshold, derivatives contracts should not be taken into account if they have been entered into to cover the risks from an objectively measurable commercial activity.”<sup>59</sup>

The proposed regulation will place obstacles in the path of index speculators’ participation in commodity index funds. However, these obstacles do not appear to be insurmountable: the CME group, for instance, has already

successfully developed cleared commodity index swaps<sup>60</sup>. Moreover, there may be a difference between the “position limits” imposed by the Section 737 of the Dodd-Frank Act, and the “concentration limits” imposed by Article 44 of the proposed regulation. The former provision sets out clear restrictions, while the latter appears to set out more variable, individualized limits that could be subject to dispute<sup>61</sup>. The goal of commodity derivatives reform is not to inconvenience financial speculation in commodities, but to limit, control, or even prohibit it outright. As such, it cannot be said that the proposed regulation tackles the subject of speculation in commodities directly.

In general, the EU has yet to act as boldly as the US with specific regard to speculation in food commodities, although the consequences of inaction are equally considerable: London is the world’s largest agricultural commodities market outside the US<sup>62</sup>. Despite various calls denouncing the impact of speculation in foodstuffs<sup>63</sup>, such as the demarche by the French government to the European Commission<sup>64</sup>, European regulation of commodities trading remains insufficient. In July 2010, Andrew Ward, the manager of Armajaro, a London-based hedge fund, purchased US\$ 1 billion (€770 million) worth of futures contracts for 241,000 tons of cocoa. This represented about 7% of the world’s annual output of cocoa, and is enough to supply Germany for an entire year. Even more amazingly, the contracts were for delivery, which means that Armajaro owned almost all the cocoa beans sitting in warehouses all over Europe. Although the announcement of good harvests ensured that the spot prices did not rise as Armajaro had hoped, that such hoarding is permitted in this day and age stretches belief.

### Possible improvements

In general, certain steps could be taken to prevent improper speculation in the commodities derivatives markets.

- Certain important regulatory bodies comprise too few experts in commodity markets<sup>65</sup>: a first improvement could be simply to begin remedying this imbalance.
- Next, all regulators should distinguish between traders hedging against genuine commercial risks from non-traditional, market momentum-based speculators interested simply in making gains on price changes. Whereas the U.S. CFTC does this<sup>66</sup>, others, such as the U.K. Financial Services Authority (FSA), do not. For instance, the FSA does not “consider activity by financial participants to be de facto manipulative”<sup>67</sup>. As such, it does not “therefore consider that there should necessarily be a distinction made between ‘large speculative’ and ‘large non-speculative’ positions for the purposes of combating manipulation – the focus should be on combating ‘large positions that lead to manipulation’ *irrespective of whether they are held by financial participants or not*”<sup>68</sup>. Yet, in the view of the Special Rapporteur, the question of whether or

not the trader is financial or commercial could at least be indicative of whether or not the transactions being carried out are likely to be manipulative.

- Most importantly, regulators should recognize that there are fundamental conceptual differences between commodity derivatives and financial derivatives. They should not be treated as belonging to the same category of instruments. In order to ensure that such regulatory conflation does not occur, it may be appropriate to assign the task of commodity derivatives regulation to a separate institution staffed specifically with experts in commodity markets.
- Once the distinction is made, access to commodities derivatives markets could be restricted to traders and specialist brokers. A number of proposals could be considered, such as an outright ban on momentum-based speculation, and the compulsory registration of actors trading on commodity futures markets, in order for such exchanges to exclude financial traders<sup>69</sup>.
- In addition, certain regulatory steps could be taken to reduce the incentives for financial speculation. Among such measures are the establishment of spot platforms, as experimented by the Ethiopia Commodity Exchange<sup>70</sup>; the imposition of compulsory delivery, preventing traders from settling their obligations in cash; and, as proposed earlier by the Special Rapporteur, the imposition of higher margins (for instance, from 10 to 30 per cent as down payment), thus forcing speculators to make a larger down payment for their speculation<sup>71</sup>.
- Aside from these regulatory changes, strengthening of spot markets may be brought about by investing in better warehousing facilities, communications services and in transport infrastructure<sup>72</sup>. Such steps will not only reduce the influence of non-commercial commodity futures traders, and increase the participation of farmers on such markets, but will also improve the ability of commodity futures to act as price signals.

This is to be desired even if one rejects the speculation-based explanation for the food crisis. It may be noted that the Abhijit Sen Committee Report to the Indian Ministry of Consumer Affairs, Food & Public Distribution called for such strengthening of spot market<sup>73</sup>, even though it found that speculation in commodity futures did not fuel inflation in food prices<sup>74</sup>.

- At the same time, spot market regulation would be necessary in order to ensure that the delivery requirements do not result in hoarding<sup>75</sup>. As illustrated by the cornering of the cocoa market by Armajaro described above, our concern should encompass not just financial traders, but also speculation by commercial ones in the form of hoarding. The Special Rapporteur believes that spot markets should be made transparent, so that the holdings of any single trader are known to all, and that there should be more

transparency also about the strategic reserves held by States. Second, strict position limits should be placed on individual holdings, such that they are not manipulative.

## INTERNATIONAL COOPERATION

There is a role for international cooperation in this regard. The ability of individual countries to feed their populations could be bolstered by setting up food and grain reserves. The establishment of food reserves would at least assist in addressing the relatively small supply and demand movements or the impact on supply of events such as droughts or floods that speculators latch upon, thus reducing levels of price volatility<sup>76</sup>. The efficacy of such food reserves would be enhanced if they were established at regional and not just at national level, or if countries exchanged information about their food reserves and insured each other against price volatility by mutualizing such food reserves<sup>77</sup>. But improved regulation preventing large financial actors from influencing the commodity futures markets would also significantly limit volatility<sup>78</sup>.

Other initiatives presently extant at the international level are compensatory financing schemes such as the EU's STABEX and FLEX schemes<sup>79</sup>, the IMF's Compensatory Financing Facility (CFF) and Exogenous Shock Facility (ESF)<sup>80</sup>, and the Food Financing Facility (FFI) mooted in the Marrakech Decision and the WTO Ministerial Conference at Doha. They aim simply to help countries avoid the adverse impact on growth as a result of food price volatility, such as, for instance, by giving access to short-term loans. This however does not address the increased volatility itself, when it is caused by speculation. As such, the international community needs, as a matter of priority, to explore alternative methods by which the underlying speculation-based causes of food price spikes can be addressed.

## CONCLUSION

Action to address the dangers of speculation in basic foodstuffs is needed. Although considerable progress appears to have been achieved in this regard with respect to financial reform in the US, most other regions in the world, including the EU, still lag behind. The fundamental structure of global financial markets appears to be little different from before the food prices crisis of 2007-8, the lessons of which we have failed to learn. It is crucial that we do so, because we once again find ourselves in a situation where basic food commodities are undergoing supply shocks. World wheat futures and spot prices climbed steadily until the beginning of August 2010, when Russia, faced with massive wildfires that destroyed its wheat harvest, imposed an export ban on that commodity<sup>81</sup>. In addition, other markets such as sugar and oilseeds are witnessing significant price increases<sup>82</sup>.

Although the global stocks of grain are higher now than they were previous to the 2007-2008 food crisis, the financial drivers of that crisis remain largely unchanged. More still needs to be done to curb the negative effects of speculation on basic food commodities. This is an important source of vulnerability, particularly, for poor net food-importing countries, whose dependency on food imports has been increasing over the years, and who will in the future suffer more balance of payments problems if they are confronted with a new peak in prices over the coming weeks and months.

## Recommendations:

1. Given the numerous linkages between agriculture, oil, and other financial markets demonstrated above, **comprehensive reform of all derivatives trading is necessary**. The very first step would be to require registration, as well as clearing to the maximum extent possible of OTC derivatives, so that there is real time reporting of all transactions made, without information privileges for OTC traders, and in order to allow for effective supervision. The small minority of derivatives that cannot be cleared must nevertheless be reported without a time lag.
2. **Regulatory bodies should carefully study and acquire expertise in commodity markets**, instead of regulating commodity derivatives and financial derivatives as if they were the same class of assets. It may be appropriate to assign the task of regulating commodity derivatives to a specific institution staffed with experts in commodity regulation, rather than have a single body regulating both financial and commodity derivatives.
3. **Access to commodities futures markets should be restricted** as far as possible to qualified and knowledgeable investors and traders who are genuinely concerned about the underlying agricultural commodities. **A significant contributory cause of the price spike was speculation by institutional investors who did not have any expertise or interest in agricultural commodities, and who invested in commodities index funds because other financial markets had dried up, or in order to hedge speculative bets made on those markets.**
4. **Spot markets should be strengthened** in order to reduce the uncertainty about future prices that creates the need for speculation. However, these markets must also be regulated in order to prevent hoarding. Spot markets must be transparent, and holdings should be subject to strict limits in order to prevent market manipulation.
5. **Physical grain reserves should be established** for the purpose of countering extreme fluctuations in food price, managing risk in agricultural derivatives contracts, and discouraging excess speculation, as well as meeting emergency needs. Such measures and the abovementioned reform of commodity derivatives markets should be seen as complementary.



## DERIVATIVES AND THEIR USES

### What are derivatives?

A derivative is “a financial instrument whose value depends on (or derives from) the values of other, more basic underlying variables”<sup>83</sup>; it is therefore a financial instrument “which has a value determined by the price of something else”<sup>84</sup>. This “something else” can be almost anything: it can be assets or commodities such as oil or wheat, or financial instruments such as securities or indices.

To illustrate, a potato farmer and a buyer may enter into a contract for the sale and delivery of a quantity of potatoes well before a single potato comes into existence. The farmer will enter into this contract if he thinks that the price offered by the trader at that point in time is greater than what he will get when he sells the actual potatoes on the “spot” market. He has the security of a fixed price, and has transferred the risk of a fall in potato prices to the buyer. The buyer may enter into this contract perhaps because she expects the opposite behaviour on the spot market. Or, she may be under a contractual obligation to yet another person to produce a certain quantity of chips at a particular time, and therefore needs to be certain that she will have the necessary potatoes at hand. In any case, there is a difference in expectations: the farmer thinks prices may fall as a result of an oversupply of potatoes, and the buyer thinks the prices may rise as a result of undersupply.

The variety of types derivatives is potentially infinite. However, most derivatives fall under, or are variants of one of the following three categories:

- 1. Forward Contracts and Futures:** The contractual arrangement described in the above paragraph is the kind of derivative known as a “forward contract”. Forward contracts whose terms are standardized sufficiently for them to be bought and sold on exchanges are known as “futures”. The means by which transactions between countless “farmers” and “buyers” is coordinated is by having all the “farmers” sell to a clearing house, and all the “buyers” buy from that same clearing house. That clearing house then owes corresponding obligations to the “farmers” and the “buyers”.
- 2. Options:** Imagine the same scenario between the potato farmer and the buyer, but with one difference: instead of purchasing the potatoes, the contract gives the buyer the choice whether or not to purchase the potatoes at a pre-determined price. If potato prices in the future spot market are higher than the price the buyer has negotiated with the farmer (to which the fee the buyer pays the farmer in exchange for the option should be added), the buyer will exercise the option. If the rise in prices does not materialize, then he will let the option lapse and will incur a loss on the option fee. An option to buy an asset is known as a “call” option, while an option to sell an asset is a “put” option.
- 3. Swaps:** To demonstrate this category of derivatives, imagine that the counterparties hold an asset that produces a stream of income over time. For example, counterparty *X* may hold a bond which bears a *fixed* rate of interest, while counterparty *Y* owns a similar security, but which pays a *floating* rate of interest pegged to the performance of a certain index. *X* may think that the stream of income coming from *Y*'s asset will be worth more in the future, because a rising rate of inflation will make the fixed interest payments of *X* less valuable. *Y* may think that *X*'s stream of income will be more valuable in future, because *Y* has reason to think that the value of the particular index her security is pegged to will crash shortly. Thus, they will “swap” the cash flows deriving from their assets with each other. It is possible to make a swap between two floating streams of income, because difference actors have a different relationship to risk and, based on the information they possess, have different anticipations about the future. The only swap that makes no sense, for obvious reasons, is one between two streams of income fixed at a certain rate in the same currency.

## How are derivatives used?

As can be seen in the example of the potato farmer and the buyer, derivatives can be used for two purposes. The farmer who enters into the forward contract in order to avert the risk of a fall in future potato prices, and the buyer who does the same in order to ensure a future supply of a quantity of potatoes or their money's worth are hedging against risks: both prefer the security of a predefined price to the risks of having to sell at a lower price (or of having to buy at a higher price). On the other hand, the buyer who enters into the forward contract simply because she thinks the price offered now is better than that which will obtain in future, is speculating in the hope of a profit. She is making a bet, pure and simple. The following suitable definition is provided by the European Commission: "a speculator is an investor... who purchases/sells (a derivative) in order to sell/purchase it later (usually before expiry) for the purpose of profiting from the intervening price changes"<sup>85</sup>.

However, it is extremely difficult in practice to know whether a particular trader is hedging or speculating, since the mediation of a clearing house, which, as mentioned above, is meant to standardize all contracts, necessarily has the effect of making background information about each individual trade opaque to public view. The best regulators can do is to train their focus upon the trader. One solution is to vet traders at the very outset: before they can trade on an exchange. The CFTC does this by separating commercial traders from non-commercial traders. Alternatively objective determination of the trader may be obtained by considering the *size* of the trades, as well as their *frequency*. Does she have sufficient other assets relative to the size of the position in order to give rise to the inference that she is protecting her investment in those other assets thereby? Or, judging by the trader's profile, does it look as if the contract is *itself* the trader's main interest? To illustrate, consider a man who buys an insurance policy on a house. If the house is worth \$50,000, and the policy is for about the same amount, then one can infer that he is *hedging* against the possibility that the house might burn down. If the policy is for \$100,000, then one can infer that he is positively *betting* that it will burn down.

A third reason traders have for finding derivatives attractive arises from the fact that they are much more liquid as investments than the underlying assets, commodities or instruments. For instance, taking the example of speculative buyer, we can assume that she has no interest in actually taking delivery of the tonnes of potatoes. She will have "evened up", i.e. negotiated a corresponding contract with another person who actually requires potatoes for some reason. The farmer will in practice deliver the potatoes to directly to this third person, but the payment obligations will nevertheless remain triangular. The buyer thus enjoys greater *trading efficiency*, because she merely makes (or loses) money without going through the trouble of receiving and storing any quantity of potatoes. Derivatives thus facilitate the "free trading of risk components"<sup>86</sup>. With regards to markets for agricultural food commodities markets, the FAO observes that only 2% of all futures contracts result in the delivery of the underlying physical commodity. This makes trading such futures attractive to investors who have no interest in the commodity, but only in making a speculative gain<sup>87</sup>.

### Notes

1. World Bank, *Global Economic Prospects. Commodities at the Crossroads*, 2009 (based on evidence available until 30 November 2008), 96. For an overview of the impacts of the crisis and of possible remedies, see Special Rapporteur on the right to food, Report to the 12<sup>th</sup> session of the Human Rights Council, *Crisis into opportunity: reinforcing multilateralism*, A/HRC/12/31 (21 July 2009)
2. FAO, *Number of Hungry People Rises to 963 Million*, (December 2008).
3. See I. Maros and W. Martin, "Implications of Higher Global Food Prices for Poverty in Low Income Countries" (2008) *World Bank Policy Research Paper No. WPS 4594*.
4. See T. Hertel, P. Preckel, J. Cranfield and I. Maros, "The Earnings Effects of Multilateral Trade Liberalization: Implications for Poverty" (2004) *The World Economic Review*, 18(2).
5. See generally UNCTAD, "The Least Developed Countries Report 2008" (2008).
6. A. Mittal, "The 2008 Food Price Crisis: Rethinking Food Security Policies", (June 2009) *G-24 Discussion Paper Series No. 56*, UNCTAD, 1.
7. *Id.*
8. Implied volatility refers to the market's expectations of the extent to which the price of a particular commodity will change in future. It is "implied" because such changes cannot be observed directly, being future events, but are implied from the prices of derivatives based those commodities.

9. FAO, *Food Outlook*, (June 2010), 98.
10. Trostle estimates that whereas the production of grains and oilseeds grew on average 2.2% p.a. between 1970 and 1990, the rate of growth declined to 1.3% p.a. after 1990. Moreover, it is estimated that it will decline further to 1.2% p.a. between 2009 and 2017. See R. Trostle, "Global Agricultural Supply and Demand: Factors contributing to the Recent Increase in Food Commodity Prices", (2008) *WRS-0801, Economic Research Service, USDA*.
11. FAO, *Crop Prospects and Food Situation*, (February 2008); Mittal, *supra* note 6, 3.
12. See D. Mitchell, "A Note on Rising Food Prices" (July 2008) *World Bank, Development Prospects Group, Policy Research Working Paper 4682*: arguing that the large increase in biofuel production in the U.S. and the E.U. was the most important factor behind the food crisis.
13. B.D. Wright & E. Bobenrieth, "Special Feature: The Food Price Crisis of 2007/2008: Evidence and Implications" (December 2010) *FAO Food Outlook* 59, 62.
14. IMF, *World Economic Outlook* (2008).
15. Wright and Bobenrieth, *supra* note 13, 64.
16. P. Wahl, "Food Speculation as the Main Factor of the Price Bubble in 2008", (February 2009) Briefing Paper, *World Economy, Ecology & Development*, 6 – 7.
17. Wright & Bobenrieth, *supra* note 13, 64.
18. Wahl, *supra* note 16, 7.
19. See FAO Crop Prices and Food Situation (2008), "Table 2: Basic Facts of the World Cereal Situation", at: <http://www.fao.org/docrep/011/ai476e/ai476e04.htm>; J. Ghosh, "The Unnatural Coupling: Food and Global Finance" (2010) Vol. 10 *Journal of Agrarian Change*, 72, at 72, 81; and S. Schulmeister, "Asset Price Fluctuations, Financial Crises and the Stabilizing Effects of a General Transactions Tax" in M. Balling, J.M. Berk, & M. Strauss-Kahn eds., *The Quest for Stability: A View of Financial Institutions* (2010) (SUERF, Vienna), 99 – 130.
20. J. Ghosh, "The Commodity Price Roller Coaster" (2008), 4.
21. Wahl, *supra* note 16, 11.
22. T. Lines, "Speculation in food commodity markets", (April 2010) *World Development Movement*, 1.
23. F. Kaufman, "The Food Bubble: How Wall Street starved millions and got away with it" (July 2010) *Harper's Magazine*, 32.
24. UNCTAD, *Trade and Development Report* (2009).
25. Aristotle, *Politics*, Volume 2, Book I, trans. John Gillies, (London, 1813) 53 – 54.
26. *Id.*, 54.
27. EU Commission, "Is there a Speculative Bubble in Commodity Markets?", *Commission Staff Working Document, Task force on the role of speculation in agricultural commodities price movements*, SEC(2008)2971, 3, 1.
28. In 2007, the Chicago Mercantile Exchange acquired the Chicago Board of Trade, which was the world's first major exchange for derivatives trading.
29. See e.g. J.S. Mill, *Principles of Political Economy with Some of Their Applications to Social Philosophy* (1848) Charles C. Little & James Brown, Boston, Mass., 535.
30. Wahl, *supra* note 16, 9.
31. *Id.*, 10.
32. A.K. Sen, *Development as Freedom*, (1999) Oxford, 167.
33. EU Commission, "Is there a Speculative Bubble in Commodity Markets?", *supra* note 27, 1.
34. See S. Newman, "The New Price makers: An investigation into the impact of financial investment on coffee price behaviour" (2009) *NCCR Trade Working Paper No. 2009/7*. See also *Report of the Expert Committee to Study the Impact of Futures Trading on Agricultural Commodity Prices* ("Abhijit Sen Committee Report"), (2008) Ministry of Consumer Affairs, Food & Public Distribution, Government of India, ¶ 11.9: "A study of the functioning of existing futures markets and contracts suggests that although the volume of futures trading in India has increased phenomenally in recent years, its ability to provide instruments of risk management has not grown correspondingly, and has in fact been quite poor."
35. See the "Factsheet" downloadable from the S&P GSCI website at: <http://www.standardandpoors.com/indices/sp-gsci/en/us/?indexId=spgscirg--usd----sp----->.
36. F.S. Rose, "Futures Markets, Portfolio Diversification and Food Prices", (June 2010) FAO, *Food Outlook*, 52 – 56. A particularly important paper in this regard was G. Gorton & K. G. Rouwenhorst, "Fact and Fantasies about Commodity Futures", (2004) NBER Working Papers 10595: arguing that the returns from investment portfolios based on commodities display were negatively correlated to the returns from stocks and bonds, thus making them suitable for diversifying investments.
37. Kaufman, *supra* note 23, 30.
38. The CFTC defines "backwardation" as being the "(M)arket situation in which futures prices are progressively lower in the distant delivery months." See the CFTC's glossary at: [http://cftc.gov/ConsumerProtection/EducationCenter/CFTCGlossary/glossary\\_b.html#backwardation](http://cftc.gov/ConsumerProtection/EducationCenter/CFTCGlossary/glossary_b.html#backwardation).
39. The CFTC defines "contango" as being the "market situation in which prices in succeeding delivery months are progressively higher than in the nearest delivery month." See the CFTC's glossary at: [http://cftc.gov/ConsumerProtection/EducationCenter/CFTCGlossary/glossary\\_co.html](http://cftc.gov/ConsumerProtection/EducationCenter/CFTCGlossary/glossary_co.html).
40. Wahl, *supra* note 16, 12.
41. M.W. Masters & A.K. White, "How Institutional Investors Are Driving Up Food and Energy Prices" (July 31, 2008), 10. Available at: <http://accidentalhuntbrothers.com/index.php?s=%22How+institutional+investors+are+driving+up+food+and+energy+prices%22>.
42. See *Food and Energy Crisis: Time to Rethink Development Policy*, South Centre, (2008) Geneva.

43. OTC derivatives are those which are not traded on exchanges, but purely as bilateral contracts between private parties. For instance, contracts which are structures in a unique or particularly complicated fashion tend to be traded OTC. As a result, they can be completely hidden from outside view, and therefore unregulated.
44. Mittal, *supra* note 6, 21.
45. In early 2008, 85% to 90% of institutional investors seeking to invest in commodities did so by entering into OTC swaps with commodity index fund managers at Wall Street Banks: G. Epstein, "Commodities: Who's Behind the Boom?" (31 March 2008) *Barrons*.
46. Masters & White, *supra* note 41, 9.
47. T. Kerckhoffs, R. van Os, M. Vander Stichele, "Financing Food: Financialisation and Financial Actors in Agriculture Commodity Markets" (April 2010) *SOMO paper*, 7. UNCTAD, *The Global Economic Crisis: systemic failures and multilateral remedies* (New York and Geneva, 2009),.
48. Bank for International Settlements, "Semiannual OTC Derivatives statistics at end-June 2007" (2007); Newman, *supra* note 34, 8.
49. Kerckhoffs *et al*, *supra* note 47, 7. See also D. Domanski and A. Heath, "Financial Investors and Commodity Markets" (2007) *BIS Quarterly Review*, 53 – 68.
50. European Commission, "Is there a Speculative Bubble in Commodity Markets?", *supra* note 27, 7. See also Report of the Special Rapporteur on the Right to Food, *Building resilience: a human rights framework for world food and nutrition security*, (20 July 2009) *A/HRC/12/31*, ("Building resilience") ¶ 41, 20 – 21.
51. A study commissioned by PIMCO, the bond giant, had this to say: "... we believe commodities offer an inherent or natural return that is not conditioned on skill. Coupling this with the fact that commodities are the basic ingredients that build society, we believe commodities are a unique asset class and should be treated as such." Ibbotson Associates (commissioned by PIMCO), "Strategic Asset Allocation and Commodities" (27 March 2006), 4.
52. See *supra* note 36.
53. D. Kesmodel, L. Etter and A.O. Patrick, "Grain Companies Profits Soar As Global Food Crisis Mounts" (30 April 2008) *The Wall Street Journal*, A1 and A14.
54. *Dodd-Frank Wall Street Reform and Consumer Protection Act*, (Pub.L. 111-203, H.R. 4173). Signed into law by President B. Obama on July 21, 2010.
55. G. Meyer & J. Blas, "Commodity trading houses set to slip under Volcker net" (29 January 2010), *Financial Times*.
56. S. Nasiripour, "Financial Reform Bill Passes: Banks Keep Derivatives Units, Volcker Rules Softened; House-Senate Conference Passes Financial Reform Bill After Marathon Session", (25 June 2010) *Huffington Post*. Available at: [http://www.huffingtonpost.com/2010/06/25/financial-reform-bill-pas\\_n\\_625191.html](http://www.huffingtonpost.com/2010/06/25/financial-reform-bill-pas_n_625191.html).
57. European Commission, *Proposal for a Regulation of the European Parliament and of the Council on OTC derivatives, central counterparties and trade repositories*, SEC(2010) 1058, SEC(2010) 1059.
58. *Id.*, 8.
59. *Id.*
60. J. Bunge, "In OTC Battle, CME Sees Success in Commodity Index Swaps" (16 April 2010) *Dow Jones Newswires*. Available at: <http://www.nasdaq.com/aspx/company-news-story.aspx?storyid=201004161603dowjonesdjonline000741>.
61. Whereas the new Section 4a(c) of the Commodities Exchange Act provides that "the (CFTC) shall by rule, regulation, or order establish limits on the amount of positions, as appropriate..." , Article 44(4) of the proposed Regulation provides that "A CCP (Central Counterparty) shall take into account its overall credit risk exposures to individual obligors in making its investment decision and shall ensure that its overall risk exposure to any individual obligor remains within acceptable concentration limits."
62. S. Amann and A. Jung, "Speculators Rediscover Agricultural Commodities" (29 July 2010) *Spiegel: Online*. Available at: <http://www.spiegel.de/international/business/0,1518,708765,00.html>.
63. Michel Barnier, EU Commissioner for the Internal Market, made repeated statements to this effect. See European Parliament, News, (12 January 2010): [http://www.europarl.europa.eu/news/expert/infopress\\_page/008-67167-012-01-03-901-20100112IPR67166-12-01-2010-2010-false/default\\_en.htm](http://www.europarl.europa.eu/news/expert/infopress_page/008-67167-012-01-03-901-20100112IPR67166-12-01-2010-2010-false/default_en.htm) ; and Francine Lacqua and Helene Fouquet, "EU's Barnier Pledges Derivatives and Hedge Fund Regulations" (04 July 2010) *Bloomberg*. Available at: <http://www.businessweek.com/news/2010-07-04/eu-s-barnier-pledges-derivatives-and-hedge-fund-regulations.html>.
64. B. Hall, "France steps up tougher rules campaign" (31 August 2010) *Financial Times*.
65. T. Lines, "Regulating Speculation in Food Commodities", (April 2010) *World Development Movement*, 3.
66. The CFTC distinguishes between traditional "commercial" traders who hedge against genuine trade risks, and "non-commercial" traders, who are primarily interested in speculation or long-term investment.
67. Financial Services Authority and H.M. Treasury, *Reforming OTC Derivative Markets: A UK Perspective* (2009), ¶9.19.
68. *Id.* In ¶ 9.21, the paper states that "the majority of commentators have concluded that commodity price movements cannot be solely attributed to the activities of any one class of investor and are principally attributable to market wide factors. We agree with these conclusions." This argument fails to take into account the possibility that "one class of investor" can magnify the effects caused by others. See also Lines, "Regulating Speculation in Food Commodities", *supra* note 65, 2.
69. See Special Rapporteur on the right to food, *Crisis into Opportunity*, *supra* note 1, para. 38, 21.
70. The Ethiopia Commodity Exchange has "designed a set of spot contracts that are structured just like futures contracts but with a 100% margin for immediate delivery, with currently very little scope for speculation": Eleni Z. Gabre-Madhin, "Structured Commodity trade and Price Volatility: Are Commodity Exchanges the Solution, or the Problem?" (15 June 2010) *Presentation to FAO*, Rome, 4.
71. Special Rapporteur on the right to food, *Crisis into Opportunity*, *supra* note 1, ¶ 38, 21.
72. *Id.* ¶ 14, 9.
73. Abhijit Sen Committee Report, *supra* note 34, paras. 11.11 – 11.12.

74. *Id.*, para. 11.8.
75. Lines, "Regulating Speculation in Food Commodities", *supra* note 65, 8: "... some hedge funds, and others, are now taking delivery of physicals – and not just in gold."
76. Report of the Special Rapporteur on the Right to Food, *Mission to the World Trade Organisation*, (25 June 2008) A/HRC/10/5/Add.2, para. 42, 20.
77. The Special Rapporteur has also proposed the establishment of an emergency reserve allowing the World Food Program (WFP) to meet urgent humanitarian needs by distributing grain purchased at pre-crisis levels: see Special Rapporteur on the right to food, *Crisis into Opportunity*, *supra* note 1, para. 39, p. 22.
78. FAO, *Management of Wide International Commodity Price Movements – National and International Experiences and Policy Responses* (April 2010) Committee on Commodity Problems, 68<sup>th</sup> Session, 14 – 16<sup>th</sup> June 2010, Rome, CCP/04, ¶ 20, 8. See also UNCTAD/GDS/2009/1, 38; Special Rapporteur on the right to food, *Crisis into Opportunity*, *supra* note 1, ¶¶ 39, 21 – 22.
79. STABEX (*Système de stabilisation des recettes d'exportation*, or "Stabilization of Export Earnings Program") was introduced in 1975, and was open to African, Caribbean and Pacific countries. In order to be eligible for participation, there had to be a drop of 6.5% in export revenues from trade with the EU in the sector concerned, measured against a four-year average. Following the Cotonou Agreement in 2000, STABEX was replaced by FLEX (Fluctuations in Export Earnings Program), which imposed more onerous eligibility criteria and took into account a broader range of economic indicators.
80. The CFF has fallen into disuse since 2000 due to the stringent conditions it imposes for eligibility for financing. On the other hand, a number of countries adversely affected by the 2007-8 food crisis resorted to the ESF in order to address balance of payments and international reserve position issues. See FAO, *Management of Wide International Commodity Price Movements*, *supra* note 78, 8 – 9.
81. See FAO media release, *FAO cuts wheat production forecast but considers supplies adequate*, (4 August 2010). Available at: <http://www.fao.org/news/story/en/item/44570/icode/>.
82. FAO, "Global Cereal Supply and Demand Update" (1 September 2010), *FAO/GIEWS Global Watch*, 3.
83. J.C. Hull, *Options, Futures, and Other Derivatives*, (1999) Prentice Hall. *Op. cit.* G. Dhingra, "An Understanding of Financial Derivatives" (2004) *The Chartered Accountant* 976, 977.
84. R.L. McDonald, *Derivatives Markets*, (2003) Prentice Hall. *Op. cit.* Dhingra, *supra* note 83, 977.
85. European Commission, "Is there a speculative bubble in Commodity Markets", *supra* note 27, 3.
86. Dhingra, *supra* note 83, 977.
87. FAO, "Price surges in food markets: How should organized futures markets be regulated?" *Policy Brief No. 9, Economic and Social Perspectives* (June 2010), 1.

## Acknowledgments

The Special Rapporteur acknowledges the help of Aravind Ganesh in preparing this briefing note. In addition, he would like to thank David Frenk, Jayati Ghosh, Tom Lines, George Rapsomanikis, Steve Suppan, and Eric Tollens for their helpful comments upon earlier drafts of this note.



**Olivier De Schutter** was appointed the UN Special Rapporteur on the right to food in March 2008 by the United Nations Human Rights Council. He is independent from any government or organization, and he reports to the Human Rights Council and to the UN General Assembly. All reports are available on <http://www2.ohchr.org/english/issues/food/annual.htm>. See <http://www.srfood.org> for a thematic classification of all reports and statements of the Special Rapporteur. The Special Rapporteur can be contacted on [srfood@ohchr.org](mailto:srfood@ohchr.org)