

Feeding The Financial Hype

How Excessive Financial Investments Impact
Agricultural Derivatives Markets



Rens van Tilburg & Myriam Vander Stichele

November 2011

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Amsterdam, November 2011

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Glossary

Derivative: financial instrument, the price of which is directly dependent upon (i.e., "derived from") the value of one or more underlying asset.

Exchange: central marketplace with established rules and regulations where buyers and sellers meet to trade futures and options contracts or securities.

Future: a standardized contract between two parties to exchange a specified asset for a price agreed today (the futures price) with delivery occurring at a specified future date (the delivery date).

Hedger: A trader who enters in a futures market to minimize the risk of financial loss from an adverse price change.

Option: A contract that gives the buyer the right, but not the obligation, to buy or sell a specified quantity of a commodity or other instrument at a specific price within a specified period of time, regardless of the market price of that instrument.

Over-the-Counter (OTC): The trading of commodities, contracts, or other instruments not listed on any exchange (also referred to as 'Off-Exchange').

Speculator: "a trader who does not hedge, but who trades with the objective of achieving profits through the successful anticipation of price movements"¹

Swap: the exchange of one asset or liability for a similar asset or liability for the purpose of lengthening or shortening maturities, or otherwise shifting risks.

Excessive speculation: when speculation distorts rather than enhances the orderly working of markets, leading to "sudden or unreasonable fluctuations or unwarranted changes" in the price of commodities traded on an exchange².

¹ Website US Commodity Futures Trading Commission, CFTC Glossary

http://www.cftc.gov/ConsumerProtection/EducationCenter/CFTCGlossary/glossary_s.html

² Section 4a (a) of the Commodity Exchange Act (CEA) directs the regulator (CFTC) to establish limits on speculation in order to prevent this from happening.

Acronyms

ABP	Dutch pension fund for the public sector and education
AMIS	Agricultural Market Information System
BIS	Bank for International Settlements
BSE	Budapest Stock Exchange
CAP	Common Agricultural Policy
CBOT	Chicago Board of Trade
CEA	Commodity and Exchange Act
CEO	Chief Executive Officer
CFTC	Commodities Futures Trading Commission
CME	Chicago Mercantile Exchange
Copa-Cogeca	Association of farmers and their co-operatives in the European Union
CRD4/CRR 4	EU legislation on capital requirements
CSR	Corporate Social Responsibility
DJ UBS	Dow Jones UBS Commodity Index
EC	European Commission
ECB	European Central Bank
EMIR	European Market Infrastructure Regulation
EP	European Parliament
ESMA	European Securities and Market Authority
ETN/ETF	Exchange-Traded Notes or Funds
EU	European Union
FAO	UN Food and Agriculture Organisation
G20	Group of 20 major advanced and emerging economies
GATS	General Agreement on Trade and Services
(SP) GSCI	Standard & Poor's Goldman Sachs Commodity Index
HLTF	High-Level Task Force on the Global Food Security Crisis
ICE	InterContinental Exchange
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
IIF	Institute of International Finance
IMF	International Monetary Fund
ISDA	International Swaps and Derivatives Association
LCE	London Commodity Exchange
LIFFE	London International Financial Futures Exchange
MAD	Market Abuse Directive
MAR	Market Abuse Regulation
MATIF	Marchés A Terme d'Instruments Financiers
MiFID	Market in Financial Instruments Directive
MTF	Multilateral Trading Facilities
NGO	Non-Governmental Organisation

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OECD	Organization for Economic Cooperation and Development
OTC	Over-The-Counter derivatives
OTF	Organised Trading Facility
PFZW	Dutch pension fund for the health and care sector
SEC	US Securities and Exchange Commission
UCITS	Undertakings in Collective Investments in Tradable Securities
UN	United Nations
UNCTAD	United Nations Conference on Trade and Development
US	United States of America
WFP	World Food Programme
WTO	World Trade Organisation

Summary

Agricultural derivatives markets allow farmers and food processors (so-called 'commercial parties') to reduce their exposure to the risk of price fluctuations ('hedging'). This is an important function in agricultural markets, where prices can fluctuate heavily. Food derivatives markets also play an important role in 'price discovery': futures prices are used in determining the prices in the physical ('spot') market and in making investment decisions. For derivatives markets to work well, some financial speculation is often welcome to provide liquidity, making it easier for commercial parties to find a counterpart for their desired trade.

Over the last decade, however, purely financial speculation in commodity derivatives markets, including derivatives of food commodities, has increased dramatically. Total commodity assets, invested mostly through derivatives, have grown within a decade from a negligible amount to less than US\$100 billion in 2005 and more than US\$400 billion at the time of writing. As a result, financial speculators have become the dominant party in many agricultural derivatives markets, holding the majority of the contracts, whereas this was 10-20% before 2000.

In this period the price volatility in futures and spot markets has intensified unprecedentedly, with food prices reaching record levels in 2008 and 2011. As people in the poorest nations spend up to 80% of their income on food (compared to only 10% in developed countries), rising food prices directly increase poverty and undernourishment for millions of people. After declining for many decades, the number of undernourished people has in recent years started to rise again. Children can suffer the consequences of even temporary undernourishment for the rest of their lives. Increased volatility has also caused the cost of hedging to rise. Farmers and food processors therefore find themselves exposed to ever larger price risks. This means that farmers are less likely to increase the food supply in response to the incentive of higher food prices.

What role does the dramatically increased financial speculation play in this higher volatility? In recent years, world food markets have also been affected by other fundamental changes and shocks, such as the increased use of crops for energy production, extreme weather events and a strong rise in demand. The issue of food security is clearly not about commodity derivatives markets alone.

However, an increasing number of studies show that the increased financial investment in commodity derivatives is also contributing to the volatility in futures and spot markets, and hence to the recent price hikes. Thus the unprecedented financial speculation we are seeing today can be labeled 'excessive speculation', as defined in

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US law, undermining the orderly working of derivatives markets instead of contributing to it.

Weighing the evidence, we conclude that increased speculation does more harm than good. Financial speculation brings no clear advantages and high food prices have a devastating impact on the most vulnerable. With food prices on the rise again, governments must act decisively to prevent a recurrence of the situation in 2008.

The precautionary principle, as enshrined in the Lisbon Treaty of the European Union, states that public action is warranted when there is sound evidence that harm can be prevented, as is the case here with regard to the Universal Human Right to affordable food. Especially in this field with such little information on both the levels and kind of speculation going on and the real supply and demand, waiting for full clarity on causal relationships would be irresponsible.

The now excessive speculation should be brought back to the level where it was before 2000. This can be done through increasing not only the transparency of physical food markets and food derivatives markets, but also the capacity and expertise of regulators to process this information, as well as enforcing more stringent price- and position limits. A financial transaction tax would further reduce speculation.

The EU has a special responsibility here as it is lagging the US in terms of both transparency and regulation. The US has much experience in regulating food derivatives markets. It is also in the US that the most far-reaching regulation, with regard to the transparency of all commodity derivatives trade and to stricter position limits, have been introduced. A strong and knowledgeable regulator is wholly absent from the EU, and it seems to be as yet unwilling to impose the strict position limits introduced in the US.

The EU's delay and its potentially weaker regulation undermine the global effort to restore the normal functioning of commodity derivatives markets. The discussion of the MiFID regulation and directive in the European Parliament and European Council in the beginning of 2012 is an excellent opportunity for the EU to play its part in reforming this essential part of the global financial system.

1. Introduction

1.1. General overview

In 2007–8 world food prices increased dramatically, but with the outbreak of the financial crisis, food prices dropped sharply, temporarily ending the debate about the role of financial speculation in driving food prices up. But as food prices have once again reached record heights in 2011, inducing great suffering among the poorest, who spend up to 80% of their income on food³, the debate has re-emerged. Since 2008, many reports, both academic and policy papers, have been published on this subject. This report aims to give an overview of this literature in order to provide some clarity on the causes of rising food prices, and on whether anything should, or can, be done about it.

We will argue that there is now enough evidence that the dramatic increase in financial speculation does have a distorting effect on both food derivatives markets and spot markets for public policymakers to act. Although questions remain, a consensus is growing that financial speculation adds to the already high volatility in commodity markets. Alongside factors affecting real supply and demand, the dramatic increase in financial speculation in agricultural derivatives markets also drives prices to extremes. While historically some speculation has always been welcome, as it increased liquidity in agricultural futures markets and makes it easier for commercial parties to find a counterpart for their desired trade, nowadays financial speculators have become the dominant players in many markets. Rather than contributing to the efficient working of these markets, excessive financial speculation is disruptive, as it adds to volatility and disturbs price discovery. In this way, it increases the risks for farmers, food processors and consumers. It is for this reason that the policies proposed in recent years in the US, EU and G20 to curb this excessive speculation should be implemented swiftly and stringently.

For this report we greatly benefited from the discussions with Markus Henn (WEED) and other SOMO partners in the project 'Towards a Global Finance System at the Service of Sustainable Development'. We are grateful for the information exchange and discussions among the network of organisations that are active on financial reform, not in the least Murray Worthy and his colleagues at the World Development Movement, David Frenk and his colleagues at Better Markets, and Steve Suppan (IATP). We also benefitted from researchers at international institutions such as Jörg Mayer and his colleagues at UNCTAD. We thank Sander van Bennekom and his colleagues of Oxfam International for their input on an early draft. All mistakes and omissions are entirely ours.

³ IMF, World Economic Outlook: Financial Stress, Downturns and Recoveries, October 2008, Figure 3.9

1.2. Structure of the report

This report is organised in the following way. Chapter 2 describes how the agricultural derivatives markets are structured and the dramatic changes they have undergone in recent years. We start with the history and function of agricultural derivatives markets, and then outline the drivers of change in recent years, the financial innovation to which these changes have given rise, and the structure of agricultural derivatives market as it is today.

Chapter 3 discusses what these developments have meant for the market, namely the changes in food prices and its effect on consumers, farmers, food processors and investors. It then discusses the role of financial speculation, and asks whether increased financial speculation influences futures prices, and whether higher futures prices translate into higher spot-market prices. The chapter concludes that there is a case for public policymakers to act and curb the now 'excessive' financial speculation in commodity markets.

Chapter 4 considers the policy options to improve the functioning of agricultural derivatives markets. It discusses the differences in regulation and supervision between the US and EU, and specifically the options to strengthen the regulatory framework in the EU through the so called MiFID, which will be discussed in the European Parliament and Council in the coming months.

2. Agricultural derivatives markets in change

This chapter opens with the history and function of agricultural derivatives markets, and their general structure. We then focus on the dramatic changes that occurred after 2000, the drivers of this change, the financial innovation to which these changes have given rise, and the altered structure of today's agricultural derivatives market.

2.1. Function, history and structure of agricultural derivatives markets

2.1.1. History and function

Agricultural derivatives markets are by no means a new phenomenon. The first financial derivatives were designed for agricultural markets and have been found written on clay tablets from Mesopotamia dated 1750 BCE. Aristotle mentioned an option on the use of olive oil presses in his *Politics* some 2,500 years ago.

Agriculture has several characteristics that make derivatives markets useful. In the first place, supply and demand are both relatively unpredictable (think of the influence of the weather) and inelastic (there are not many readily available substitutes to many food commodities, and adjustment of supply often takes at least a season). Farmers and food processors need to reduce this uncertainty. Derivatives markets can cater to this need to 'buy' security about prices and volumes. Trading futures and options on exchanges are also used to 'discover' prices, and hence to set prices on which to base investment decisions.

The importance of futures contracts in food has varied very much historically.⁴ In times of increasing international trade, such as in the 17th and late 19th centuries, they have risen to prominence. After the First World War and the Great Depression, international trade in food declined and markets were strongly regulated. The trade in commodity futures was more strictly regulated, especially in the US, where in 1936 the Commodity and Exchange Act (CEA) provided federal regulation of all commodities and futures trading activities and required all futures and commodity options to be traded on organised exchanges. The regulator was mandated to fight 'excessive speculation' that caused "sudden and unreasonable fluctuation and unwarranted changes"⁵.

⁴ A. Berg, "The rise of commodity speculation: from villainous to venerable", in A. Prakash (ed.), *Safeguarding Food Security in Volatile Global Markets*, FAO, 2011, p. 242.

⁵ Section 4a (a) of the Commodity Exchange Act (CEA) directs the regulator (CFTC) to establish limits on

The low levels of trading in agricultural derivatives lasted until the early 1970s, when trade in food commodities was liberalised, as were international financial markets. What followed was a spurt of financial innovations such as financial futures to hedge against changes in interest and exchange rates. Trade in food futures also picked up again. New exchanges for futures and options trading were created in Europe in the 1980s, starting with the London International Financial Futures Exchange (LIFFE) in 1982 (which in 1996 merged with the London Commodity Exchange – LCE), followed in 1986 by Paris's Marchés A Terme d'Instruments Financiers (MATIF) and Frankfurt's Deutsche Börse in 1990. Advances in financial theory and information technology enabled the market for derivatives traded not on the public exchange but directly between financial parties 'over-the-counter' (OTC) to take off in the 1980s.⁶

2.1.2. Food derivatives markets structure

Agricultural commodity derivatives are only a small part of the larger derivatives markets, whose main business is interest rate, foreign exchange and credit derivatives.⁷ There are agricultural commodity derivatives markets for almost all major agricultural commodities, with some exceptions (e.g. tea). The agricultural commodity derivatives consist of both futures and options traded on exchanges, and all kind of derivatives traded OTC (e.g. agricultural swaps). These two different markets, exchanges and OTC, are discussed below.

Agricultural derivatives on exchanges

Futures and options trading on exchanges is relatively transparent, compared to OTC trading. Exchanges provide constant information about the prices at which the futures or options are being traded. The US regulator, the Commodities Futures Trading Commission (CFTC), provides weekly public reports on the commitment of traders on various commodity futures markets according to category of trader (e.g. producer/end-user, swap dealer). The EU so far has no similar reports, which makes the European markets less transparent.

Futures contracts traded on an exchange are 'cleared': this means that for each contract a clearing house is counter-party to the seller as well as to the buyer. This automatic clearing by exchanges provides security for payments even in the event of default by the counter-party. To this end a collateral is demanded ('margin', an insurance premium or collateral against default) which can be adjusted on a daily basis. This adds to the cost of trading, but makes it more secure as well. The clearing house of an exchange can belong to the same company as the exchange or belong

speculation in order to prevent this from happening.

⁶ G. J. Schinasi, Modern banking and OTC derivatives markets, IMF, 2000, p. 63.

⁷ BIS, 2011, table 19, table 22A, <http://www.bis.org/statistics>: during the first half of 2011, the OTC non precious metal commodity derivatives (forwards, swaps and options) amounted to 2,585 bn \$ notional amounts outstanding, or 0.36% of all OTC derivatives in notional amounts outstanding.

to another financial company, such as an investment bank. In recent years a marked process of consolidation has taken place among derivatives exchanges, with probably more to come. Most exchange conglomerates nowadays are active in both the exchange trade and the clearing and processing of OTC derivatives.

The most important price benchmark for agricultural spot prices worldwide (including in Europe) remains the Chicago Board of Trade (CBOT), the oldest futures exchange. Many European producers' futures are traded on that US exchange, or refer to it. Currently, the CBOT is part of the CME Group, a listed company that hosts the largest derivatives exchange in the world,⁸ the result of mergers of different exchanges. The Chicago Mercantile Exchange (CME) has the largest number of options and open contracts of any futures exchange.⁹ The CME group has been building partnerships with exchanges in developing countries, such as Malaysia, South Africa (JSE), South Korea and Brazil.¹⁰ The US- based InterContinental Exchange (ICE) was created in 2000,¹¹ and operates internet-based marketplaces which trade futures and OTC energy and commodity contracts, as well as derivative-based financial products. After mergers, it now also offers futures trading on exchange in agricultural commodities in the US but not in Europe.

In Europe, agricultural commodity derivatives are mainly traded on exchanges in London, Paris and Frankfurt. The commodity exchanges in London and Paris are part of the NYSE Euronext group, a listed company that is the result of the merger between the New York Stock Exchange and Euronext.liffe in 2007. The latter was the result of the merged (2000) exchanges of Brussels, Paris and Amsterdam (Euronext), and Lisbon (2002), which had merged in 2001 with LIFFE.¹² In Frankfurt-am-Main resides the Eurex Group,¹³ owned by Deutsche Börse AG,¹⁴ and SIX Swiss Exchange AG.¹⁵ The Budapest Stock Exchange (BSE) grain futures and options market plays an important role in Central Europe.¹⁶

The European agricultural commodity derivatives exchange markets are small compared with the US markets, owing among other things to the price stability that the Common Agricultural Policy (CAP) has brought. Once the CAP is further reformed

⁸ C. Garner, A Trader's first book on commodities – an introduction to the world's fastest growing market, 2010, p. 17.

⁹ Ibidem.

¹⁰ CME Group, <http://www.cmegroup.com/international/global-relationship.html>. NYMEX is part of CME group, and currently houses energy futures trading. It merged in 1994 with the Commodity Exchange (COMEX), which trades in precious metals (now COMEX division).

¹¹ C. Garner, A Trader's first book on commodities – an introduction to the world's fastest growing market, 2010, p. 18.

¹² LIFFE traded soft commodities after it merged with the London Commodity Exchange (LCE) in 1996.

¹³ http://www.eurexgroup.com/about/groups_de.html

¹⁴ http://deutsche-boerse.com/dbag/dispatch/en/kit/qdb_navigation/about_us

¹⁵ http://www.eurexchange.com/trading/products/COM/AGR/products_en.html

¹⁶ BSE, Budapest Stock Exchange at a glance, at: http://www.bse.hu/data/cms105194/commodities_0325.pdf

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and becomes more market-oriented, with more price instability, and if EU derivatives regulation remains less stringent than that in the US, the EU (commodity) derivatives markets may become much more important.¹⁷

Table 1 provides an overview of the most important markets and the kind of agricultural derivatives traded on them.

Table 1: Leading exchanges for oil and agricultural commodity derivatives

Exchange	Relevant derivatives	Relative importance
Chicago Board of Trade (CBOT) – part of CME Group	Maize, soft red winter wheat – futures, options wheat-maize inter-commodity spread options	Leading exchange for soft red winter wheat and maize
Dalian Commodity Exchange (DCE, China)	Maize – futures	Most important exchange for maize in Asia
Intercontinental Exchange (ICE)	United States: cocoa, raw sugar (no.11) – futures and options Europe: Brent, WTI – futures and options Canada: barley – futures and options OTC: crude oil (various) – swaps	Leading exchange for raw sugar and cocoa futures (ICE Futures United States) and Brent Crude oil futures (ICE Futures Europe)
Kansas City Board of Trade (KCBT)	Hard red winter- futures and options	Specialized exchange for wheat
Minneapolis Grain Exchange (MGEX)	Hard Red Spring Wheat Index (HRSI), Hard Red Winter Wheat Index (HRWI), Soft Red Winter Wheat Index (SRWI), National Corn Index (NCI) – futures and options	Leading exchange for hard red spring wheat
Multi Commodity Exchange of India (MCX)	Brent crude oil, crude oil, barley, wheat, feed maize, white sugar	Among leading exchanges for crude oil
New York Mercantile Exchange (NYMEX) – part of CME Group	Cocoa, raw sugar (No.11) – futures (settlement financial) WTI, Brent, others – futures and options	Leading exchange for light, sweet crude oil futures; Among leading exchanges for other commodities
NYSE LIFFE	London: white sugar, cocoa, feed wheat - futures and options Paris: milling wheat, malting barley, maize – futures and options	European exchange for agricultural commodities
Zhengzhou Commodity Exchange (ZCE, China)	Hard white wheat, strong gluten wheat, white sugar - futures	Largest number of contracts for white sugar, but contract size is 20 per cent of that at NYSE LIFFE

Source: UNCTAD, 2011

¹⁷ US regulators and authorities have warned against a race to the bottom, as less stringent EU regulation will attract derivatives trade from the US to the EU: Remarks by Treasury Secretary Tim Geithner to the International Monetary Conference, 6 June 2011, Atlanta, Georgia, <http://www.treasury.gov/press-center/press-releases/Pages/tg1202.aspx>

Over-the-counter (OTC) agricultural commodity derivatives

Bilateral contracts between two different parties, which are not traded on an exchange, are called 'over-the-counter' (OTC) derivatives. Although overall OTC derivatives trading is in volume much larger than exchange-traded derivatives (90% of all derivatives trade is estimated to be OTC, although for agriculture derivatives this number is probably lower),¹⁸ it has remained largely unregulated and unreported, which makes OTC trade highly opaque until new transparency rules are implemented.

Most OTC contracts and services are offered by investment banks or banks with investment services.¹⁹ In the EU, the most important commodity derivatives players (both off and on exchange) are Barclays Capital, Deutsche Bank, Société Générale, Credit Suisse and UBS.²⁰ As well as hedge funds, large US investment banks such as Goldman Sachs and Morgan Stanley are also active in this field in the EU.

By far the largest class of OTC derivatives comprise the interest rate swaps and foreign exchange swaps that constitute 80% of the market.²¹ Estimations of the share of all OTC commodity derivatives range between 0.45% during the first half 2011 and the 1.9% at the exceptional peak period in June 2008.²² Given the enormous volume of total OTC trade, these small percentages still translate into an OTC commodity derivatives market of US\$3 trillion (first half 2011) to 13 trillion (June 2008) notional amounts outstanding (see Box 1).

Box 1: How to estimate the value of the OTC derivatives market?

The notional amounts outstanding refer to the value of the underlying contracts of the derivatives. Another way to value the market is "the gross market value of global OTC derivatives", which is "the total value of all derivative contracts globally if they had to be closed out and settled at market value on a specific date".²³ In June 2009, the gross market value of OTC derivatives was estimated to be US\$25.4 trillion.²⁴

¹⁸ Deutsche Bank Research, OTC derivatives – A new market infrastructure is taking shape, 28 April 2010, p. 4.

¹⁹ Idem, p. 5: "Of the USD 6.6 trillion market in equity-linked and commodity derivatives, transactions of non-financial firms comprise 10%, while dealer-to-dealer transactions amount to 40% and other financial institutions' transactions to 50% (BIS, 2009)." Note that separate figures for (agricultural) commodities derivatives are hard to find in aggregate overviews.

²⁰ B. Scott, *Barclays plc & agricultural commodity derivatives*, World Development Movement, March 2011, pp. 8–9. Barclays Capital is not only a dealer but also offered amongst others structured products in wheat, corn, soybean, palm oil, cocoa, coffee, cotton, orange juice, sugar, pulp and paper, and rubber.

²¹ Deutsche Bank Research, OTC derivatives – A new market infrastructure is taking shape, 28 April 2010, p. 5.

²² BIS, 2008, 2011, <http://www.bis.org/statistics> : own calculations.

²³ Deutsche Bank Research, OTC derivatives – A new market infrastructure is taking shape, 28 April 2010, p. 4.

²⁴ BIS, OTC derivatives market activity in the first half of 2009, November 2009, table 1, http://www.bis.org/publ/otc_hy0911.pdf

Most OTC derivatives trade takes place without clearing, as there is no clearing obligation. OTC derivatives are therefore mostly unprotected against default by the counterparty.

2.2. Developments after 2000

After 2000 several factors came together that resulted in a sharp rise in the activities of financial investors in food derivatives markets. We will describe these factors, the financial innovations they gave rise to, and how they have changed the market.

2.2.1. Drivers of change

Driving this strong growth in financial investments in (agricultural) commodities derivatives markets is a combination of:

- institutional investors discovering commodities as a means to diversify their non-fixed-income holdings, which, in the search for higher returns, had strongly increased in recent years;
- investment banks and fund managers eager to grasp the profit opportunity;
- a regulatory environment conducive to these developments.

Institutional investors' need for diversification

Institutional investors shifted their investments towards commodities for several reasons. In the 1990's pension funds invested an ever larger share of their portfolio in equities. In 2000 the dot.com bubble burst, leading to a sharp decline in stock-market returns. In a reaction to this, the central banks, especially the US Federal Bank, sharply reduced interest rates. Pension funds saw their reserves reduced and the returns on their fixed income (linked as they are to interest rates) sink to historic lows, while their payment obligations were maintained or even increased (pensioners living longer). Institutional investors reacted by further reducing their assets in fixed income and shifting towards more risk-bearing assets, such as equity, derivatives, hedge funds and private equity, in the belief that this would bring higher returns. At around that time, academic papers appeared arguing that commodities markets had been 'inversely correlated' to securities.²⁵ Commodities proved the ideal diversification for their increasing securities holdings. Also the fear of rising inflation due to the broad monetary policy of central banks, and the belief that investments in commodities would not be affected by this, made commodity investment look attractive.

Investment banks' great bargain

This interest on the part of institutional investors met with a strong appetite from the selling side, namely investment banks keen to use their financial innovations from

²⁵ See, for instance, G. B. Gorton and K. G. Rouwenhorst, "Facts and Fantasies about Commodity Futures", Yale ICF Working Paper No. 4-20, 28 February 2005.

other derivatives markets in the commodity markets. Attractive profit opportunities came from different derivatives services (from broker to counterparty and offering index funds) and from those trading on their own account (proprietary trading).²⁶

‘Light touch’ regulation

The appetite for investing in commodity derivatives met a ‘light touch’ philosophy dominating regulators in the early 2000s, as advocated by powerful lobbies such as the International Swaps and Derivatives Association (ISDA).

In the US two far reaching laws were implemented. In 1999 the Gramm-Leach-Bliley Act (or Financial Services Modernization Act)²⁷ took away the barriers that existed between investment and commercial banking, securities and insurance companies. In 2000 the US Commodity Futures Modernization Act²⁸ allowed for the exemption from CFTC oversight of trading in energy derivatives and of OTC swaps and derivatives.

At the level of the exchanges deregulation was also the norm. With the approval of the CFTC, the CBOT had since the early 1990s been steadily increasing the speculative position limits in its agricultural markets. These limits, which had existed for decades at 600 contracts per commodity would grow by 2005 to 22,000, 10,000 and 6,500 for maize, soya and wheat, respectively.²⁹

In 2004 the US Securities and Exchange Commission (SEC) relaxed equity capital rules, as requested by US investment banks, allowing them to use more leverage and therefore further expand their activities in commodity derivatives markets.³⁰

In the EU, futures and options exchanges are regulated by the Market in Financial Instruments Directive (MiFID), which has no particular elements to deal with commodity exchanges. Nor does the EU have a specialised institution such as the CFTC in the US to deal with commodity exchanges. The new European regulator, ESMA, lacks the capacity, the knowledge and the mandate for this. The Market Abuse Directive (MAD) covers market manipulation, and does have a separate description of inside information for the commodity derivative markets. Moreover, the MAD applies only to financial instruments traded on exchanges, and not to OTC derivatives nor to automated electronic trading practices. Until the financial crisis of 2008, the EU did not regulate OTC derivatives, or important players on the OTC markets such as hedge funds, or ancillary services such as clearing houses.

²⁶ A. Berg, “The rise of commodity speculation: from villainous to venerable” in A. Prakash (ed.), *Safeguarding food security in volatile global markets*, FAO, 2011.

²⁷ Pub.L. 106-102, 113 Stat. 1338, enacted November 12, 1999

²⁸ Commodity Futures Modernization Act of 2000 (Pub. L. 106–554, Sec. 1(a)(5) [H.R. 5660], 21 December 2000, 114 Stat. 2763, 2763A–365).

²⁹ A. Berg, “The rise of commodity speculation: from villainous to venerable”, in A. Prakash (ed.), *Safeguarding food security in volatile global markets*, FAO, 2011.

³⁰ For further details see <http://www.gao.gov/decisions/majrule/d04896r.pdf>

2.2.2. Financial innovation in commodity derivatives markets

The financial instruments used to gain exposure to commodity derivatives have evolved swiftly over recent years. Below we discuss first the commodity index funds that were the main channel through which funds from institutional investors flowed into commodity markets after 2000. In recent years, more active trading strategies have risen to prominence.³¹ So-called exchange-traded notes or funds (ETNs or ETFs) have also grown considerably. As these can be bought on public exchanges, they are also available to individual investors. Buy-and-sell decisions are made increasingly through automated trading, by computers that can buy and sell in split seconds.

Commodity index funds

A commodity index fund replicates the price movements of a certain index, a basket of different commodities. Managers of commodity index funds buy the derivatives of a range of agricultural and non-agricultural commodities, according to the composition of the particular index. Regarding agricultural commodities, the index-fund managers mostly buy futures contracts on exchanges, thus increasing the demand for agricultural commodity futures contracts on these exchanges. Commodity index funds are offered to institutional investors.

It is through these funds (mostly following the Standard & Poor GSCI, which Goldman Sachs started in 1991, or the Dow Jones UBS Commodity Index) that the bulk of the new investments have been channeled into commodities futures markets.

The share of agriculture commodities is much higher in the UBS index than in the GSCI (see Table 2). Maize, with 3.6% of the fund, is the largest agricultural commodity in the Goldman Sachs index, while the UBS index's largest is soya, with 7.4%, followed by maize with 6.9% and live cattle with 4.1% (Goldman Sachs – 1.6%). Both commodity indexes follow largely the same futures markets, either the US-based exchanges CME or ICE.

Table 2. Composition of main commodity indexes in percentages

	SP GSCI	DJ UBS
Energy	58	39.6
Agriculture	14.4	34.9
Metals	4.3	15.2

Whereas commodity index fund managers originally took only 'long' positions (speculating on rising prices), and renewed these (selling the expiring future and buying a new one with a later realization date), in order not to have to actually buy the physical commodity at fixed dates ('rolling over'), the index fund management has recently adopted a different strategy. So-called second-generation (or 'enhanced') indices became more active in the futures periods, holding contracts at more

³¹ UNCTAD, Price Formation in Financialized Commodity Markets, 2011, paragraph 4.1.

favourable points of the futures curve. To reduce the risks of unequal commodity performances, so-called third-generation ('active' or 'dynamic') commodity indices adjust the weighting of different commodities in the basket according to analysts' research.³²

Exchange-traded products

Like commodity index funds, the increasingly popular commodity exchange-traded funds (ETFs) are investment instruments that replicate the return of a single commodity or of a certain basket of commodities (an index). They are constructed in such a way that the value of the ETF shares reflects the value of the commodity index upon which they are based.

Synthetic commodity ETFs provide investors with the profits or losses equal to the underlying commodity products. However, the money of the investor can be invested by the fund sponsor (e.g. investment bank) in other securities than these underlying commodities. The ETFs are also (and supposedly increasingly) actively managed. This means they buy and sell agricultural derivatives, often using ICT for so called 'high-frequency trading'.

Retail investors can buy and sell ETF shares, as opposed to index funds, which are accessible only to institutional investors. In the US, retail investors hold 50% of ETFs; in Europe, however, 80% of ETFs are held by institutional investors. For institutional investors ETFs provide a way to gain exposure to agricultural commodity markets in more specific and diversified ways. Whereas there is only a limited number of index funds, there are at present more than 2,500 ETFs (not only commodity!).³³

Six so-called sponsors control more than 80% of the ETF market. These are large fund managers such as State Street, Vanguard, Blackrock or Deutsche Bank.³⁴ ETFs make it possible to go short (speculating on price decreases) and in general to profit from volatility through short-term transactions (momentum-trading).

2.2.3. Financial investors taking over

Because of the new financial instruments of commodity index funds and ETFs, investments in commodity derivatives have grown dramatically in recent years, and still continue to grow. Whereas in 2005 less than 100 billion was invested in commodity assets, and much less a few years before that, in March 2011 Barclays Capital reported that commodity assets under management rose to a record US\$412 billion. The increase was led by 'the biggest ever jump for agriculture products'.

³² See World Countries News website, 15 June 2011, Goldman Sachs, Clive Capital to Launch New Commodity Index, <http://world-countries.net/archives/123387>

³³ Blackrock, "ETF landscape", 2011, cited in S. Ramaswamy, "Market structures and systemic risks of exchange-traded funds", BIS Working Papers No. 343, April 2011.

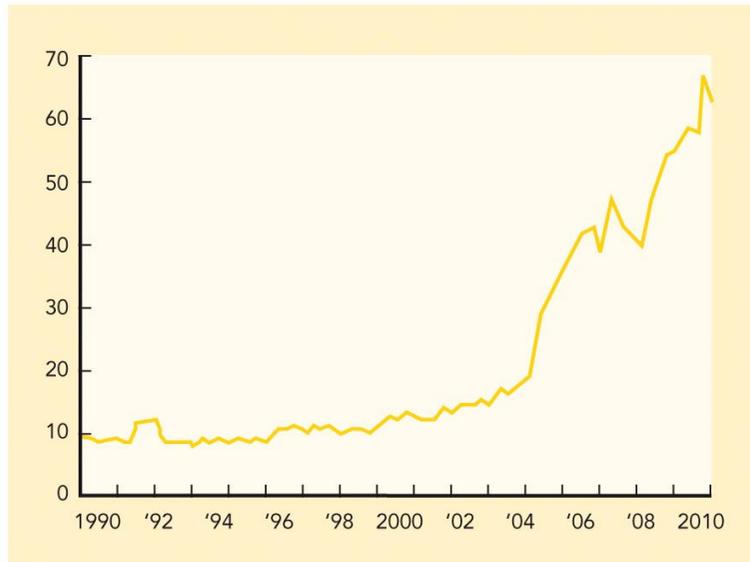
³⁴ Idem.

Feeding the Financial Hype

Investment flows into raw materials for the first quarter of 2011 totaled US\$16.8 billion, with US\$7.1 billion added to agriculture and US\$6.8 billion to energy.³⁵ These figures do not include the commodity assets held by hedge funds. They are estimated at an additional US\$60–100 billion.³⁶ Market participants estimate that hedge funds now control about 36% of gold and 27% of silver markets, and around 24% of the maize market.³⁷

In general, a shift from passive index funds towards active investments is visible. UNCTAD refers to a recent report from Barclays, which says that only 7% of commodity investors expect to invest using index swaps, while 43% will engage more active management.³⁸

Figure 1. Futures and Options contracts outstanding on Commodity Exchanges, 1993–2010 (number of contracts, millions)



Source: BIS, Quarterly review March 2011, table 23B

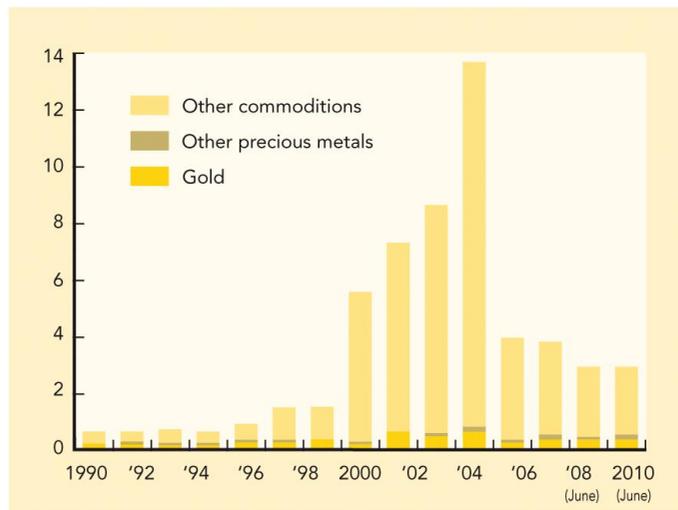
³⁵ C. Carpenter, “Commodity Assets at Record \$412 Billion in March, Barclays Says”, Bloomberg, April 20 2011, <http://www.bloomberg.com/news/2011-04-20/commodity-assets-at-record-412-billion-in-march-barclays-capital-says.html>

³⁶ I. Knoepfel, Responsible investment in commodities: the issue at stake and potential role for institutional investors, Zurich, onValues, 2011.

³⁷ E. Moya, “Field of dreams: hedge funds put faith in grain”, *Guardian*, 19 October 2010.

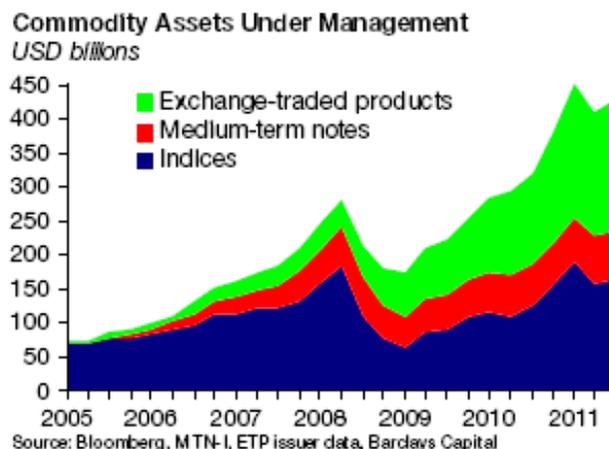
³⁸ UNCTAD, Price Formation in Financialized Commodity Markets: the Role of Information, New York/Geneva, June 2011, p. 15.

Figure 2. Notional amount outstanding OTC commodity derivatives, 1998–2010 (US\$ trillion)



Source: BIS, Quarterly review, March 2011, table 22A

Figure 3. Commodity assets under management worldwide, 2005–2011 (US\$ billions)



Source: Bloomberg, MTN-I, ETP Issuer Data, Barclays Capital

Source: IIF, 2011

As a result of the copious inflow of purely financial speculative capital, the structure of commodity markets has changed dramatically. Whereas earlier commercial players in the market (farmers and food processors), who use the derivatives market for hedging, used to be dominant, that role has now been taken by purely financial parties such as institutional investors interested in the market for reasons of speculation. While there is no clear-cut point at which useful speculation, which adds

to the liquidity of the market, changes into excessive speculation, which distorts the market, the dramatic changes that have taken place in a very short time raise questions about their effect on the way the market functions.

The Washington based NGO Better Markets has compared the positions of hedgers and speculators for several agricultural commodities at the CBOT. They find that where, historically, physical hedgers have constituted about 70% of the market, nowadays speculators account for about 70% or more of these markets.³⁹ In the CBOT wheat market, for instance, the share of speculators⁴⁰ grew from 12% in 1996 to 65% in 2008.

Figure 4. Market share of hedgers and speculators in the Chicago wheat futures market



Source: WDM, 2011, based on Better Markets 2011 and CFTC 2011.

Another measure of purely financial speculation is the so called T-index, as developed by the late Holbrook Working, professor of economics and statistics at Stanford University's Food Research Institute.⁴¹ This index measures the activity of non-commercials (speculators) and commercials (hedgers). The historical balance between financial speculators and hedgers has been within the range of 1.1 and 1.3, with 1.15 being considered as the minimum required to absorb hedging needs. Where historically a T-index of 1.4 has occurred only on rare occasions, it has become common since the introduction of index funds for the T-Index to rise above 1.6, occasionally breaching 2.0. These are historically unprecedented levels.⁴²

³⁹ Better Markets, Letter to the CFTC on Position Limits for Derivatives, Washington DC, 28 March 2011, p. 2.

⁴⁰ Defined as trading by non-commercial parties – in recent definitions of CFTC a combination of CIT (commodity index traders) and 'Non-commercial no CIT' (see Better Markets, 2011, p. 12, footnote 5).

⁴¹ H. Working, Speculation on hedging markets, Food Research Institute Studies Vol. 1, No. 2, 1960.

⁴² Better Markets, Letter to the CFTC on Position Limits for Derivatives, Washington DC, 28 March 2011, p. 23.

3. Changing market outcomes and role of financial speculation

In the previous chapter we saw that in the last decade agricultural derivatives markets underwent profound changes in both size and structure, with financial investors becoming the dominant players. In this chapter we will first discuss the impact of these changes: what happened to price levels and fluctuation? What did this mean for those involved: farmers, food processors, consumers and investors? We will then discuss the role that financial speculators have played in this: has increased financial speculation added to volatility, and did higher futures prices translate into higher spot-market prices? We will end by examining what this means for public policy and the responsibility of investors: is there a case for reducing financial speculation because it is 'excessive'? Does it inhibit rather than enhance the functioning of the market?

3.1. Agricultural markets outcomes

Real (physical or spot) agricultural markets, like the related futures markets, have in recent years experienced unprecedented price changes. Prices rose sharply in 2006 and 2007, peaking in the second half of 2007 for some products and in the first half of 2008 for others. For some products the rise between 2005 and the peak was several hundred per cent. Prices then fell sharply in the second half of 2008, although in virtually all cases they remained at or above the levels they had been at just before the price rises began. By early 2011, the FAO's food price index was again at the level reached at the peak of the crisis in 2008.

Figure 5. FAO index of world food prices



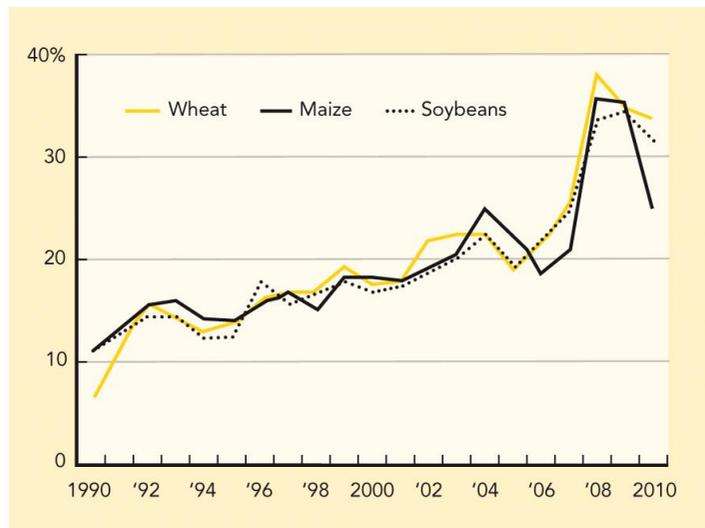
Source: FAO, 2011

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In a recent joint report on food and agricultural markets, a large number of international organizations⁴³ conclude: “there is no doubt that the period since 2006 has been one of extraordinary volatility”. To put this volatility in historical perspective: in the years following 2005 the energy commodities markets experienced volatility greater than that caused by the 1973 oil embargo, the 1979 Iranian revolution or the 1990–91 Gulf War.⁴⁴

The expectations of market participants on how volatile prices will be, as measured by the so-called ‘implied volatility’,⁴⁵ shows (see Figure 6) a steady rise in the last two decades, with marked acceleration after 2006. This shows that in the period of growing financial speculation uncertainty for traders and other market participants has grown substantially.

Figure 6. Implied volatilities (annual), 1990–2010



Source: FAO, Food outlook, November 2010

⁴³ In reaction to a request by G20 leaders at their summit meeting in November 2010, a report was published in May 2011 by FAO (coordination), IFAD, IMF, OECD (coordination), UNCTAD, WFP, the World Bank, the WTO, IFPRI and the UN HLTF, Price Volatility in Food and Agricultural Markets: Policy Responses, 3 May 2011.

⁴⁴ See Babak, “What Can Possibly Explain the Price of Oil?”, website seeking alpha, 8 June 2008, quoted in Better Markets, 2011 <http://seekingalpha.com/article/80487-what-can-possibly-explain-the-price-of-oil>

⁴⁵ Measured as a percentage of the deviation in the futures price (six months ahead) from underlying expected value. See FAO et al., Price Volatility in Food and Agricultural Markets: Policy Responses, May 2011.

3.2. Impact on consumers, farmers, food processors and investors

What has been the effect of all this on the people who in the end actually produce, trade and consume food? And how have the investors themselves done financially?

3.2.1. Consumers

Much Western media attention in has been paid to the effects, especially on the US public, of sharply rising gasoline prices in tough economic times. In the words of US Senator Cantwell: “American consumers are getting gouged at the pump while speculation on Wall Street runs rampant. Today, the CFTC must implement these long-overdue position limits to crack down on excessive speculation and provide relief to American consumers.”⁴⁶ The idea that speculation raises the price of physical products bought by consumers is shared by CFTC commissioner Bart Chilton: “When folks pull up to gas pumps, they usually have a choice: regular, premium or super premium gasoline. Regardless of the gas grade, however, everyone at the pump is actually paying premium – a Wall Street speculative premium.”⁴⁷

Because the futures prices on exchanges are benchmarks for food producers, traders, and consumers worldwide and determine the prices at which food is imported, the people most painfully affected by rising food prices are the poorest, especially those in importing countries living in urban areas without any food production of their own. Even though developing countries have a much higher percentage of their workforce employed in agriculture than more developed, industrialised countries, still two-thirds of developing countries are net importers of basic food commodities. Furthermore, relative household expenditure on food is much higher in developing countries, and even many small farmers have to buy food. Up to 80% of income is spent on food, compared with approximately 10% in the EU.⁴⁸ As the price of food in developing countries does not include a large sum spent on marketing and distribution, it is clear that rising food commodity prices translate directly into undernourishment in these countries. This affects children especially, who may suffer the consequences for the rest of their lives. Economists estimate that every child whose physical and mental development is stunted by hunger and malnutrition stands to lose 5-10 percent in lifetime earnings.⁴⁹ The World Food Programme estimates that the combination of rising food prices and low incomes due to the global economic slowdown led to an increase in chronically malnourished people of 115 million in 2007–08.

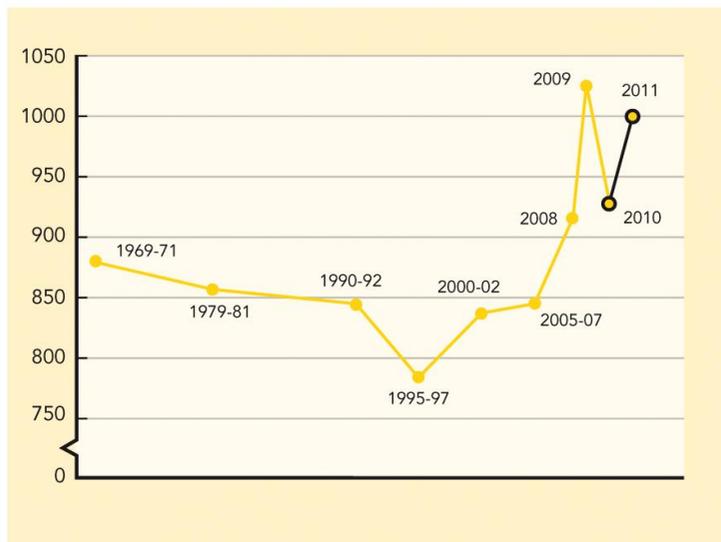
⁴⁶ M. Cantwell et al., 17 Senators Call on Federal Regulators to Immediately Crack Down on Excessive Crude Oil Speculation, Press Release, Washington DC, 11 May 2011.

⁴⁷ B. Chilton, “Avoidable”, Speech at the University of Chicago, Chicago, IL, 5 May 2011, <http://www.cftc.gov/PressRoom/SpeechesTestimony/opachilton-46.html>

⁴⁸ IMF, World Economic Outlook: Financial Stress, Downturns and Recoveries, October 2008, Figure 3.9

⁴⁹ FAO website <http://www.wfp.org/hunger/>

Figure 7. Hungry people in the world, 1969–2010 (2011 estimate) (millions)



Source: FAO, 2011

The World Bank February 2011 found that rising food prices have driven an estimated 44 million people into poverty in developing countries since June 2010.⁵⁰ In a joint report the FAO and several other UN agencies concluded in mid-2011 that “There are serious risks to food security”.⁵¹ High food prices result not only in poor people eating less food, but also in families being forced to alter the way they live. They must:

- change to less varied diets (less fruit, vegetables, dairy and meat in order to afford staple foods such as wheat);
- run down any savings, take out loans or sell off assets vital to future income, such as land or cattle;
- reduce spending on other necessities, such as healthcare, education or family planning;
- force family members, especially women, to increase income through taking on insecure and risky employment, such as becoming domestic workers, mail-order brides or sex workers.⁵²

3.2.2. Farmers and food processors

Farmers are another affected group. Although rising food prices are in general, of course, a good thing for them, the recent volatility brings them not just high prices, but

⁵⁰ World Bank, Food Price Hike Drives 44 Million People into Poverty, Washington D.C., February 15, 2011

⁵¹ FAO et al., Price Volatility in Food and Agricultural Markets: Policy Responses, May 2011

⁵² M. Worthy, Broken markets: how financial market regulation can help prevent another global food crisis, World Development Movement, September 2011.

also great insecurity about these prices, making it difficult to base a production and investment strategy on them. Small farmers in developing countries, who have limited capacity to absorb price shocks, have the greatest difficulty dealing with increased volatility. In 2008, when prices of essential inputs such as gasoline, electricity and fertilizers also increased, small-scale farmers, being the weakest link in the production chain, profited least from the rise in food prices. Apart from speculators, it is larger intermediaries, retailers and bigger farmers that reaped most of the profits.⁵³

Moreover, farmers in developed countries also have to bear the cost of an unpredictable environment. At the same time, greater volatility has made it more expensive to use the derivatives markets for hedging (larger margins to be paid to clearing houses), and this, in turn, has led to a decline in the percentage of production for which hedging is used as an insurance against price volatility⁵⁴. Farmers therefore have to face an increasingly insecure environment with less insurance to protect them from it.

3.2.3. Investors

We have seen that, according to the latest figures, the appetite of investors for commodities derivatives has not diminished. The developments in market outcomes, however, should worry not only consumers, farmers and producers, but also investors. The fact that commodity derivatives markets have started to move more in line with other financial markets diminishes the diversification that can be achieved through investing in commodities.

Also the returns of commodity investments have been disappointing in many cases. For instance, the biggest US public pension fund, The Californian Public Employees' Retirement System, lost almost 15% of its US\$842-million investment in commodity futures between 2007 and 2010.⁵⁵ In 2008 the two biggest pension funds of the Netherlands (ABP and PFZW) lost both half of their commodity derivative investments⁵⁶.

Since the end of 2006 the GSCI has been significantly outperformed by the commodity-related equity index. This means that investing in the actual production of commodities would have yielded a substantially higher return. The absolute return on commodity investment in recent years has actually been negative.⁵⁷

⁵³ H. Höffler and B. Owuor Ochieng, High Food Prices – Who gets the Money?; A Case Study of the Impact of High Food Prices on Kenyan Farmers, Heinrich Böll Stiftung, 23 February 2009.

⁵⁴ Better Markets, Letter to the CFTC on Position Limits for Derivatives, Washington DC, 28 March 2011.

⁵⁵ Bloomberg Businessweek, July 26-August 1, p. 52-57.

⁵⁶ ABP and PFZW Annual Reports 2008.

⁵⁷ D. Kane, Letter to Christopher J. Ailman, CIO, California State Teachers' Retirement System, Maryknoll Office for Global Concerns, October 21, 2010, p. 9.

Disappointing yields have also been a problem for ETFs. For instance, the US Oil Fund – the biggest oil ETF – lost half its value between its beginning in 2006 and 2010, a period in which crude oil prices rose by 11%.⁵⁸

These disappointing returns and the public discussion about the possible effects that increased financial speculation has on food security have been a reason for at least one pension fund to decide against investing in commodities. The US's second biggest pension fund, the California State Teachers' Retirement Fund (CalSTRS) decided in November 2010, in response to concerns of civil society organizations, to reject a proposal from the investment committee to raise its investments in commodities to US\$2.5 billion.⁵⁹

Overall however, as the figures cited in chapter 2 showed, there has been no sign of a slowdown in investors' appetite for commodity markets.

Where does the money go?

The real profits seem to be made not by the investors, but rather by the investment banks through which the investments in commodity derivatives have been made. Goldman Sachs earned 5 billion dollars from trading commodity derivatives in 2009⁶⁰, JP Morgan expects to earn 1,2 billion US\$ in 2011⁶¹. In 2011 Barclays Capital is estimated to have made profits of around £340 million from its commodity trading.⁶² A leading banking analyst for Nomura Securities put the total annual bank profit from commodity trading at 9 to 14 billion US\$⁶³.

3.3. Role of financial speculation

Up to now, widely differing views have been held as to the exact role played by the various contributory factors in rising food prices. Quite apart from the unprecedented increase in financial speculation, there have also been dramatic changes in real supply and demand factors. Several of the factors known to have contributed to the 2007–8 crisis are also present today, and will probably exert upward pressure on food prices in years to come. These include growing population and income in emerging and developing countries, weather-related crop losses, export restrictions, high oil prices, a depreciating US dollar, and demand for food and feed crops for the production of biofuels.⁶⁴

⁵⁸ Bloomberg Businessweek, July 26-August 1, p. 52-57.

⁵⁹ D. Kane, "CalSTRS responds to public pressure, reduces commodity investments", website Stop Gambling on Hunger, November 2010, <http://stopgamblingonhunger.com/?p=829>

⁶⁰ Goldman Sachs, Annual Report 2009, New York

⁶¹ Wall Street Journal, "Big Banks Cash in on Commodities", 2 June 2011, cited in foodwatch, The Hungermakers, October 2011

⁶² Ibidem.

⁶³ Financial Times, "Volatile oil markets lift profits on Wall Street", 3 May 2011, cited in foodwatch, The Hungermakers, October 2011

⁶⁴ FAO et al., Price Volatility in Food and Agricultural Markets: Policy Responses, May 2011.

However, there is a growing consensus that increased financial speculation in agricultural commodities markets has contributed to volatility and higher prices. In their joint study published in May 2011, the FAO, IMF, World Bank, OECD and others conclude that:

While analysts argue about whether financial speculation has been a major factor, most agree that increased participation by non-commercial actors such as index funds, swap dealers and money managers in financial markets probably acted to amplify short term price swings and could have contributed to the formation of price bubbles in some situations.

It is the latest in a series of recognitions from official bodies of the influence of financial speculation on food prices. Earlier a World Bank study,⁶⁵ the FAO,⁶⁶ and the UN Special rapporteur on the right to food, Olivier De Schutter,⁶⁷ found financial speculation to be “amongst the main factors”, to play “a key role”, and the only explanation for a “significant portion” of the global food price rises of 2007 and 2008. Similarly, an investigation by the US Senate took the view that the price of US futures had been influenced by excessive speculation.⁶⁸

But how does financial speculation contribute to volatility in agricultural common markets? How can excessive financial speculation induce price increases in both derivatives and physical markets? We will ask whether and how increased financial speculation influences futures prices, and then look at how higher futures prices may translate into higher spot-market prices.

Does increased financial speculation influence futures prices?

Can increased financial speculation move prices in derivatives markets to levels that are unwarranted when looking at real supply-and-demand factors? Is there such a thing as ‘excessive speculation’: speculation that does not add to the efficiency of the market through increasing liquidity, but rather distorts the price signaling that the market is intended to provide? Some economists claim that the amount of trading in futures is irrelevant to the real price, because it is always a ‘zero-sum game’ between traders. In other words, for every position that bets on a rising price (‘long position’), there is a counterparty that bets on a falling price (‘short position’).⁶⁹ However this does not rule out the possibility that such ‘bets’ are being made at levels unrelated to real factors affecting supply and demand, especially as financial speculators are trading among themselves instead of only with commercial parties. It is certainly

⁶⁵ J. Baffes and T. Haniotis, Placing the 2006/08 Commodity Price Boom into Perspective, World Bank Research Working Paper 5371, Washington DC, 2010.

⁶⁶ FAO, Final report of the committee on commodity problems, 2010.

⁶⁷ O. De Schutter, “Food commodities speculation and food price crises: Regulation to reduce the risks of financial volatility”, UN Special Rapporteur on the Right to Food, 2010.

⁶⁸ US Senate Permanent Subcommittee on Investigations, Excessive Speculation in the Wheat Market, Washington DC, 2009.

⁶⁹ S. Irwin and D. Sanders, The Impact of Index and Swap Funds on Commodity Futures Markets, OECD, 2010.

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possible that market prices may be drifting away from equilibrium prices, especially as a growing number of traders base their trading strategy on something other than real supply-and-demand developments. This is exactly what has happened in agricultural derivatives markets.

In 2009 UNCTAD concluded: “There are an increasing number of market participants, sometimes with very large positions, that do not trade based on fundamental supply and demand relationships in commodity markets, but who nonetheless influence commodity price developments.”⁷⁰ CFTC commissioner Chilton speaks of “massive passives” that have a “price-insensitive trading strategy”.⁷¹

The first-generation index funds wanted to buy exclusively long positions, speculating on rising prices. Other investors may very well be willing to accommodate these funds by agreeing to sell futures at ever higher prices. As long as fresh money is flowing into the market, as has been the case until now, rising prices for futures can be sustained. Financial portfolio considerations then drive prices, rather than any real factors affecting supply and demand.

As we now see a shift from passive to actively managed commodity funds, these investors may be looking more to financial data, which they are used to dealing with, than to real developments in the physical agricultural markets. These financial-market participants may also be less able to interpret (and therefore debunk) misleading rumours about certain supply-and-demand developments. This increases the possibility of herd behavior, not only when prices rise, but also when they decline.

The efficient-market hypothesis predicts that when prices deviate from their equilibrium level, market participants will buy and sell in a way that brings these prices back to a level that balances real supply and demand. However, we know that markets can deviate in the short and medium term from their real levels. Think of the internet bubble in the late 1990s, or more recent real-estate bubbles.

The reason for this is that investors often move in herds, trying to profit from the momentum of price developments, pushing these further, whatever their direction, to an extent irrespective of the underlying factors. Herd behavior can take various forms, and may be rooted in both rational (‘intentional herding’) and irrational behaviour (‘noise trading’).⁷² In both cases the market fails, in the sense that prices give the wrong signals to market participants and hence lead to, for example, misguided investment decisions.

⁷⁰ UNCTAD, Trade and Development Report, 2009.

⁷¹ Chilton, ‘Avoidable’, speech at the University of Chicago, 5 May 2011, <http://www.cftc.gov/PressRoom/SpeechesTestimony/opachilton-46.html>

⁷² For a discussion of the recent literature on the topic of herding, see UNCTAD, ‘Price formation in financialized commodity markets: the role of information, 2011, pp. 20–24.

It may be rational for investors to go with the herd rather than take positions against it, even when one thinks that prices are not moving in the right direction, owing to the so called 'limits to arbitrage'. To explain, investors cannot always profit from mispricing, because of the cost of capital needed for this.⁷³ More explicitly, although mispriced assets offer potential returns through arbitrage, investment managers may not try to reap these benefits out of fear that the potential gain will fail to materialise before they run out of (borrowed and costly) capital.⁷⁴

In the end, financial prices have to come back to 'real' levels, as dictated by physical supply and demand. But since both derivatives and physical markets are highly opaque, and it takes time to adjust supply and demand levels, mismatches between supply and demand can remain unnoticed for a considerable time. Since, as we shall shortly discuss, spot-market prices largely follow futures prices, it becomes possible for futures prices to stay at other than equilibrium prices for quite a long period.

Several empirical studies have also found that, in the last decade, futures prices became ever more detached from real factors and started to move in line with positions held by financial speculators and with developments in other financial markets. They find a growing interdependence in commodity markets, both between the markets themselves and with financial markets. To give two examples:

- Since the early 2000s, futures prices of non-energy commodities in the US have become increasingly correlated with oil. This trend has been significantly more pronounced for commodities in the two popular SP GSCI and DJ UBS commodity indices. This trend was already evident and significant before the bankruptcy of Lehman Brothers in September 2008, and intensified further after this.⁷⁵
- A study of the correlation between commodity futures and financial assets from 1990 to 2009 found across the period "higher and more variable correlations between commodity futures and stock returns."⁷⁶

These findings undermine not only the prime reason why institutional investors started investing in commodities in the first place, which was because historically they had been uncorrelated with stock returns, but also they chose to do so through index funds containing several different (supposedly less correlated) commodities.

Other studies find financial speculators' positions to be important variables explaining price developments:

⁷³ A. Shleifer and R. Vishny, Equilibrium short horizons of investors and firms, in: *The New Theory of the Firm*, vol. 80 no. 2, 1990, p. 148-153.

⁷⁴ A. Shleifer and R. Vishny, *The Limits of Arbitrage*, *Journal of Finance* 52, 1997, p.35-55.

⁷⁵ K. Tang and W. Xiong, *Index Investment and the Financialization of Commodities*, 2010.

⁷⁶ A. Silvennoinen and S. Thorp, *Financialization, Crisis and Commodity Correlation Dynamics*, 2010.

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- A study of the coffee market finds that, between 2005 and 2008, fundamental developments had a lower impact on futures markets, and that the influx of index investments does indeed explain the price developments observed.⁷⁷
- A recent study of 2008 oil prices presents “new evidence that there was an economically and statistically significant effect of investor flows on futures prices.... The intermediate-term growth rates of index positions and managed-money spread positions had the largest impacts on futures prices.”⁷⁸
- A study by UNCTAD found that, between July 2009 and February 2011, “there has been a fairly close correlation between price changes and changes in money managers’ positions.”⁷⁹

Studies modeling food prices and several other factors found speculation to cause commodity prices increases:

- “The dominant cause of price increases are investor speculation and ethanol conversion. Models that just treat supply and demand are not consistent with the actual price dynamics. The two sharp peaks in 2007/2008 and 2010/2011 are specifically due to investor speculation.”⁸⁰
- “By investing across the entire range of commodity futures, index-based investors appear to have inflated food commodity prices.”⁸¹

These findings are not undisputed.⁸² Irwin and Sanders, for example, argue that, according to their empirical research, index funds did not cause a bubble⁸³. Criticism has been voiced concerning the statistical test used for the available data⁸⁴. Ghosh and Pollin concluded, after their overview of the existing research, that ‘overall’ it supports the idea that speculation led to increased spot prices. Of the many contradictory findings in the field, they state: “mixed results from econometric testing

⁷⁷ M. van der Molen and J. Bos, *Speculators Invading the Commodity Markets: a Case Study of Coffee*, 2009.

⁷⁸ K.J. Singleton, ‘Investor Flows and the 2008 Boom/Bust Cycle in Oil Prices’, mimeo, Stanford University, 2011.

⁷⁹ UNCTAD, *Price Formation in Financialized Commodity Markets*, 2011, p. 28.

⁸⁰ M. Lagi, Y. Bar-Yam, K. Z. Bertrand and Y. Bar-Yam, *The Food Crises: A quantitative model of food prices including speculators and ethanol conversion*, New England Complex Systems Institute, September 2011.

⁸¹ C.L. Gilbert, *How to Understand High Food Prices*, *Journal of Agricultural Economics*, Vol.61, No. 2, 2010

⁸² See also FTI, *The Impact of Speculative Trading in Commodity Markets- a Review of the Evidence*, September 2011 a study commissioned by the Futures and Options Association (FOA), the Institute of International Finance, *Financial Investment in Commodities Markets: Potential Impact on Commodity Prices and Volatility* (IIF Commodities Task Force Submission to the G20, September 2011) and the comments of NGO’s (amongst which SOMO) arguing the IIF report contains ‘fundamental flaws’ http://www2.weed-online.org/uploads/letter_iif_sep_2011.pdf.

⁸³ S. H. Irwin and D. R. Sanders, *The Impact of Index and Swap Funds on Commodity Futures Markets: Preliminary Results*, OECD Food, Agriculture and Fisheries Working Papers, No. 27, 2010

⁸⁴ D. Frank, *Review of Irwin and Sanders 2010 OECD Reports*, Better Markets, 30 June 2010

will almost always result when a research question is relatively new, and a variety of techniques and empirical specifications are being deployed.”⁸⁵ When we remember the relative opacity of both physical and derivatives commodity markets, it is no wonder that many questions around the precise mechanisms between increased financial speculation and higher prices at the pump and in the grocery store remain shrouded in mystery.

Despite these difficulties, however, a consensus is emerging that there is a relation between financial investments in futures markets and price developments. As the report of a recent investors’ conference, hosted by the UN Global Compact and UN Principles for Responsible Investment (UNPRI), states: “investors themselves clearly recognize that in the short term their actions impact prices and contribute to higher volatility”.⁸⁶

Do higher futures prices translate into higher spot-market prices?

The next question is whether the increased volatility and the consequent overpricing in futures markets can translate into higher prices paid in spot markets. There are two channels through which the developments in futures markets sketched above will translate into higher spot-market prices:

- Volatility in futures prices pushes up costs for hedging, which will raise prices for end-users;
- Physical prices are often directly linked to futures prices through contracts that take the futures exchange price as a benchmark.⁸⁷

Recent empirical work has indeed found a relation between futures prices and prices in the physical or ‘spot’ market. Looking at oil futures and spot prices between 2000 and 2010, researchers of the ECB found that:

“financial investors did cause oil prices to significantly diverge from the level justified by oil supply and demand at specific points in time. In general, inefficient financial activity in the futures market pushed oil prices about 15 per cent above the level justified by (current and expected) oil fundamentals over the period 2000–mid-2008, when the volume of crude oil derivatives traded on NYMEX quintupled. Particularly in 2007–2008, destabilizing financial shocks aggravated the volatility present in the oil market and caused

⁸⁵ J. Ghosh and R. Pollin, Response to the Public Consultation on the Review of the Markets in Financial Instruments Directive, requested by World Development Movement, 1 February 2011

⁸⁶ D. Imbert and I. Knoepfel, Agri-investing for the long term; The investment case for responsible investments in agriculture (Zurich, onValues, January 2011)
http://www.onvalues.ch/images/publications/agri-investing_meeting_report_2011.pdf

⁸⁷ Better Markets, letter to CFTC on Position Limits for Derivatives, 28 March 2011, p. 43-49 and International Energy Agency, Medium Term Oil Market report, 2009, p. 107

*oil prices to respectively over- and undershoot their fundamental values by significant amounts.*⁸⁸

The International Food Policy Research Institute (IFPRI) provides further evidence for this causal relation between futures and spot-market prices in agricultural commodity markets. Studying data on maize, hard wheat, soft wheat and soya, their researchers concluded that:

*“Price changes in futures markets lead price changes in spot markets more often than the reverse (...) These findings support then the price discovery role of futures markets. Compared with previous studies, the identified causal link also appears to be stronger and more persistent. This finding suggests that the information flow from futures to spot markets has intensified in the past 15 years, probably due to the increase in the relative importance of electronic trading of futures contracts over open auction trading, which results in more transparent and widely accessible prices.”*⁸⁹

3.4. Weighing the evidence: is there ‘excessive’ financial speculation?

The issue of food security clearly is not about financial derivatives markets alone. Generally speaking, there is upward pressure on prices from both the demand and the supply side. Food security therefore requires that these real challenges are faced.

However, a consensus is emerging that the increase in financial speculation in food derivatives markets does add to volatility, and hence pushes prices further up (and down). In this way such ‘excessive speculation’ undermines the prime function of derivatives markets, which is to reduce the price risk and discover future prices.

At present, academics do not agree on exact causes and effects. Moreover, given that the field of research is still young and the availability of data still limited, owing to the opaque nature of both physical and derivatives markets, no certainty can be expected in the near future either.

But we cannot afford to wait. Looking at the present situation, we see that all the factors that have led to the inflow of speculative money into food derivative markets are still in place. With extremely low interest rates, a shortage of other financial profit-making opportunities, fear of rising inflation, low reserves at pension funds, and the persistent lack of adequate oversight of commodity derivatives markets, there is every reason to expect funds invested in these markets to increase even further, as has been the case until the end of 2011. Most analysts expect growth in commodity

⁸⁸ M.J. Lombardi and I. Van Robays, Do Financial Investors Destabilize the Oil Price? ECB Working Paper 1346, June 2011, p. 6

⁸⁹ M. Hernandez and M. Torero, Examining the Dynamic Relationship between Spot and Future Prices of Agricultural Commodities, IFPRI Discussion paper, 2010.

derivatives to remain strong: “commodities investments are expected to grow considerably in the coming years. These figures could more than double in the coming years given that many asset owners and managers are now allocating up to 5% of their portfolios to commodities from previously very low levels.”⁹⁰

Whereas academic observers and international institutions are only now slowly starting to conclude that financial speculation distorts rather than enhances the orderly working of commodity derivatives markets, those active in and dependent on these markets, ranging from farmers to food processors to financiers, have been more outspoken before, as the box below shows.

Market talks

Roger Johnson (President of the US National Farmers’ Union): “(E)xcessive speculation led to the commodity price bubble. Unfortunately, as speculators created this market bubble, many farmers ended up locking in higher input and feed costs. Now, following the market collapse, farmers and ranchers are struggling to pay these higher costs and rural communities, in turn, are feeling the pinch.”⁹¹

Wallace Darneille (President of the Plains Cotton Cooperative Association): “The market is broken.... It no longer serves its purpose.”⁹²

Padraig Walshe (chair, European farmers’ association Copa-Cogeca): “Prices should reflect the economic reality, not the excesses of speculators. The extremes of the market should be regulated.”⁹³

Sir Richard Branson (Founder Virgin Group): “There is strong evidence that speculation exacerbated the last oil and food bubble. Speculation will fuel the next one too, unless meaningful speculative position limits are established.”⁹⁴

Howard Schultz (CEO Starbucks): “I’ve spoken to almost all of the people we buy coffee from in roughly 30 countries. Not one of them told me they had a supply problem -- but prices still kept going up.”⁹⁵

Paul Polman (CEO Unilever): “Speculation is pushing up food prices and threatening society’s long-term interests.”⁹⁶

George Soros, (former speculator): “Speculators create the bubble (...) which is especially true for commodities. It is like hoarding food in the midst of a famine, only to make a profit on rising prices.”⁹⁷

⁹⁰ I. Knoepfel, Responsible investment in commodities; the issue at stake and potential role for institutional investors, Zurich, onValues, 2011.

⁹¹ June 2009, quote from Better Markets, letter to CFTC on Position Limits for Derivatives, 28 March 2011.

⁹² Quoted in “Companies Hedge Bets at a Cost to Consumers”, *New York Times*, 5 May 2011.

⁹³ See AGD, “Copa-Cogeca wants to rein in speculation on derivatives markets”, 1 February 2011, p. 9.

⁹⁴ R. Branson, M. Masters and D. Frenk, “Swaps, spots and bubbles”, letter to *The Economist*, 29 July 2010.

⁹⁵ Spiegel online international, Interview with Starbucks CEO Howard Schultz, ‘We’re Going To Build a Multibillion Dollar Grocery Business’ 20 September 2011 <http://www.spiegel.de/international/business/0,1518,785996-2,00.html>

⁹⁶ Radio Netherlands Worldwide, Unilever: Stop food speculation, 16 January 2011, <http://www.rnw.nl/english/bulletin/unilever-stop-food-speculation>

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The fact that there are no clear advantages to the increased speculation, and that there are such potentially devastating drawbacks, leads us to the conclusion that the precautionary principle should be applied⁹⁸ as it is enshrined in the European (Lisbon) Treaty.⁹⁹ What is at stake here is the fundamental human right to “a standard of living adequate for the health and well-being of himself and of his family, including food”.¹⁰⁰ Regulators should curb the current excessive speculation, moving markets back to their state before 2000, when commercial parties held the majority of contracts. Due to financial innovations such as commodity index funds and the associated exchange traded funds, the existing regulatory framework has become increasingly obsolete. What can be done will be discussed in the next section of this paper.

⁹⁷ Interview in *Stern*, 2008, see also FT.com, “Soros blasts commodity bubble”, <http://www.ft.com/intl/cms/s/0/d9056350-3261-11dd-9b87-0000779fd2ac.html#axzz1f5HpCbWo>.

⁹⁸ The precautionary principle is a response to uncertainty when faced with serious risks to health and well-being. It triggers appropriate action to avoid potential serious or irreversible harm, despite lack of scientific certainty as to the likelihood, magnitude, or causation of that harm.

⁹⁹ Paragraph 2 of article 191 of the Lisbon Treaty states that "Union policy on the environment (...) shall be based on the precautionary principle and on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source and that the polluter should pay." The principle has come to inform much EU policy, including that in areas beyond that of environmental policy. It is implemented, for example, in the EU food law and also affects, among others, policies relating to consumer protection, trade and research, and technological development (Wikipedia, http://en.wikipedia.org/wiki/Precautionary_principle#European_Commission seen on 29 November 2011).

¹⁰⁰ Article 25 of the Universal Declaration of Human Rights

4. Policy options to improve the functioning of agricultural derivatives markets

This chapter discusses the policy measures currently on the table to curb excessive speculation in commodity derivatives markets internationally, with a focus on the EU. It will argue that existing proposals need to be strengthened and show how this can be done.

After the financial crisis there was a global call for reform of the financial markets. So far, however, decision-making has been slow and proposals often shallow. After food and oil prices declined at the end of 2008, tackling food and commodity speculation moved to the bottom of the political agenda, only to reappear when prices reached new highs in 2010 and 2011. When taking over the presidency of the G20 at the end of 2010, the French president Sarkozy declared to make tackling food speculation priority for the G20. In 2011, the US made progress on implementing the Dodd–Frank Act when the CFTC introduced new rules to reduce ‘excessive speculation’.

Reform progress has been slow in the EU, where commodity derivatives markets were less regulated than the US to start with. At EU level, there was no regulation at all for commodity derivative exchanges or OTC commodity trading. European commodity exchanges, such as London’s NYSE–Liffe, have less strict self-regulatory rules than US commodity exchanges. There is thus a danger of regulatory arbitrage: that is, that the EU attracts the financial speculators and speculative instruments that are no longer allowed on the US markets.

In the second half of 2010 has the EU started to discuss new rules and regulations that may reduce the harm from excessive speculation in agricultural derivatives markets. One important new piece of legislation is the European Market Infrastructure Regulation (EMIR). Its decision-making process had not yet been finalised by mid-November 2011.¹⁰¹ EMIR aims at making the OTC derivatives market more transparent and strictly regulating the companies that are instrumental to OTC trading, OTC trade reporting and clearing. Another important EU law is the Market in Financial Instruments Directive (MiFID) that regulates financial trading places, especially exchanges. So far, commodity exchanges were not covered by MiFID that also regulates trading practices, investment (advisory) services, and related financial

¹⁰¹ See SOMO, ‘EU falling behind US in REGULATING DERIVATIVES: first EP vote on EMIR’, Newsletter No. 7, July 2011, http://somo.nl/dossiers-en/sectors/financier/eu-financial-reforms/newsletter-items/issue-7-july-2011/eu-falling-behind-us-in-regulating-derivatives-first-ep-vote-on-emir/?portal_status_message=Edit%20cancelled

products (including derivatives), suppliers and marketing practices. The proposal to revise MiFID was published by the European Commission (EC) on 20 October 2011, and has two parts: (1) a new regulation (the Markets in Financial Instruments Regulation – MiFIR¹⁰²) that will be directly implemented and (2) a reviewed directive, MiFID II¹⁰³ that will be implemented after adoption by each national parliament of EU member states. How these new EU laws regulate agricultural commodity derivatives will be explained in more detail below. MiFID II and MiFIR extend the scope of the legislation to cover all (commodity) derivatives on trading platforms such as exchanges, multilateral trading facilities (MTFs) and new types of organised trading facilities (OTFs). The proposed MiFID review thus regulates food commodity derivatives but does not provide them with special treatment.

In general, the proposed EU legislation will not in its current form prevent excessive speculation, nor bring the EU's regulation and supervision to their levels in the US. EU legislation to deal with commodity derivatives trading is also very piecemeal, as it is divided among several legislations (in addition to EMIR and MiFIDII/MiFIR, there are new laws on short selling, and revision of existing EU legislation such as those on market abuse in financial markets (MAD), investment funds or 'Undertakings in Collective Investments in Tradable Securities' UCITS). Not only are many of the EU revisions of existing legislation far from decided upon, their effectiveness ultimately depends upon their incorporation into national law. The EU is therefore holding back global efforts to fight excessive speculation, as US legislation is backtracking on the Dodd-Frank act and other G20 countries wait until the EU and US have implemented derivatives legislation.

In this chapter we discuss the most important new EU directives and regulations, which should be strengthened to combat 'excessive' speculation and volatility effectively and to ensure the proper functioning of commodity derivatives exchanges. We present the reform proposals that EU and US officials and civil society have made, and comment on what is needed. We focus on three ways to do this:

- increasing the transparency of both derivatives and physical agricultural markets;
- rules to curb excessive speculation;
- stronger supervision of markets.

The focus of this report is on the EU legislative proposals currently on the table - that is November 2011 - and how to improve them. The EU legislative process requires

¹⁰² European Commission, Proposal for a Regulation of the European Parliament and the Council on markets in financial instruments and amending Regulation [EMIR] on OTC derivatives, central counterparties and trade repositories COM(2011) 652/4, [20 October 2011].

¹⁰³ European Commission, Proposal for a Directive of the European Parliament and the Council on markets in financial instruments repealing Directive 2004/39/EC of the European Parliament and the Council (Recast), COM (2011)656/4, [20 October 2011]

that the European Commission (EC) first presents a legislative proposal. The European Parliament (EP) and the Council of Ministers of Finance have both co-decision making power whereby the EP and the Council first each decide on their own response to the EC proposal and then have to agree on a compromise text with the facilitation of the EC. The final text is then approved by the Council and the EC.

It is important to bear in mind, however, that measures could and should also be taken outside the derivatives markets to arrive at real food security, and to limit the volatility, and thus the attractiveness to speculators, of food markets. These measures, which are not discussed further here, include:

- ❑ decreasing leverage: e.g. banks should not lend to hedge funds and speculators in derivatives markets. This prohibition should be integrated in the current review of EU legislation on capital requirements (CRD4/CRR 4), especially under the part that regulates counterparty risk management. In case banks are not being prohibited from speculating on their own account and with their own capital, high capital requirements should be imposed on banks that engage in derivatives trading themselves. Also, banks' activities in derivatives markets should be split from their retail banking (and would thus have no access to cheap central bank money to speculate on commodity derivatives markets);
- ❑ setting up accessible strategic commodity stocks (public, or public–private) that prevent speculation on shortages and can be used to intervene in the market; developing other stock and price management instruments;
- ❑ exploring new agricultural policies that are less based on free markets;
- ❑ development and application of policies of corporate social responsibility (CSR) and codes of conduct on food speculation by banks, pension funds, insurance companies and asset managers;
- ❑ developing alternative insurance instruments for farmers against food price fluctuations, so that they need not resort to the derivatives markets;
- ❑ preventing the spread of commodity speculation through bilateral and regional free trade agreements and the WTO (GATS), which liberalise financial services such as OTC derivatives.

Once these kinds of proposals are implemented, it will be possible to ask the more fundamental question of whether we should move towards a policy of 'no speculation on food'. Commodity futures and other derivatives are by their nature speculative insurance instruments. The danger of excessive speculation is therefore ever present. Do the benefits of having these derivatives markets outweigh this danger? In preparing the EU reforms, no such cost–benefit analysis of derivatives markets has been made. This leaves unanswered essential but simple questions, such as: what is the value added of derivatives markets to society and the real economy? Would banning some derivatives be better than regulating? So far, no official proposal refers

to the principle of speculating on food, but public discussion of the matter is exerting some pressure on financial players to avoid such speculation.

4.1. Increasing the transparency of derivatives and physical agricultural markets

Lack of information has been a major problem hampering the ability of regulators, politicians – including parliamentarians – and supervisors, as well as academics, analysts, stakeholders and citizens, to assess the precise causality between different kinds of commodity trading and speculation. It is necessary to know how much is being traded by whom (e.g., producer, processor, bank, trader, investor, commodity fund manager), and for what reason (speculation or hedging). It is also important that sufficient and timely information is not only provided to supervisors but also publicly available in clear format and frequently, so that analysts, political decision makers – including parliamentarians – and stakeholders can make effective decisions.

These criteria, as a necessary first step towards regulator surveillance to ensure fair and orderly market, should be translated into legislation in the following way:

- ❑ All transactions in commodity derivatives should be reported, as soon as is technically possible after trading;
- ❑ Traders should be categorised by type of trading activity and not by only trading entity (e.g. producer, end-user of financial company). All commodity derivatives trading parties should themselves report the kind of activity they are undertaking – hedging or speculating – as is the case in the US;
- ❑ All OTC contracts should be registered;
- ❑ Reports of commodity trading OTC and on exchanges or other trading venues should be made publicly available, at least weekly (e.g., on long or short positions aggregated from across all existing exchanges, by class of derivative and trading activity);
- ❑ The vast majority of derivatives trade needs to be moved on to exchanges. This should result in there being only a tiny non-transparent and illiquid OTC market to be left where end-users with specific tailor made commodity derivatives contracts can meet financial investors;
- ❑ In order to gain good insight into the ‘fundamentals’ that influence commodity derivatives markets, information on food commodity harvests, stocks, transport and delivery should be compiled and published by an international organisation such as the FAO. Grain companies should be required to deliver this information, while the collecting entity could ensure the anonymity of the data.

At EU level, legislation is being prepared on new reporting obligations which do not meet all above criteria. The details of these reporting and public disclosure obligations

incorporated in different new EU laws will be worked out by the EU supervisory authority (ESMA – European Securities and Market Authority) and the EC, after the laws have been adopted by the European Parliament and the Council of Finance Ministers.

4.1.1. Reporting requirements in the draft European Market Infrastructure Regulation (EMIR) text¹⁰⁴

The European Parliament (EP) has added some particular reporting requirements to all OTC derivatives trading in the EMIR text as voted on in July 2011.

- ❑ All derivatives trade, i.e. OTC and non-OTC as well as cleared and non-cleared OTC derivatives, will need to be reported to a ‘trade repository’ (Art. 6);
- ❑ Trade repositories, which are commercial database services, will be strictly regulated by EMIR, so that authorities can always access the information;
- ❑ A trade repository shall regularly, and in an easily accessible way, publish aggregate positions by class of derivatives on the contracts reported to it The public needs to be informed by the trade repository in an aggregate way every week in a meaningful format regarding figures of volume, positions, prices and value, as well as trends, risks and other relevant information that increases the transparency of the OTC derivative markets. ESMA has the power to decide on the criteria for publication and who should best issue the publication (e.g. national or EU authorities) (Art. 67).

However, in the discussions between the EP and the Council to finalise the EMIR text, the detail requirements about the public disclosure might be abandoned.

The EU provisions are still less transparent than those in the US, where the Dodd–Frank act stipulates:

- ❑ Aggregate trading data to the public is made available daily. Trading venues are required to make aggregate data available daily on trading volume, amount of open contracts (‘open interest’) and pricing. Clearing houses are required to provide daily aggregate data on daily trading volume, open interest and settlement prices as valued on that day (‘mark-to-market’ prices);
- ❑ Regular reports are published by the CFTC on trading and clearing by swap categories, at least every six months;
- ❑ Daily valuation of swaps is provided to market participants; that is, swaps are ‘mark-to-market’ every day during the duration of the swaps contract.

¹⁰⁴ See SOMO, “EU falling behind US in regulating derivatives: first EP vote on EMIR”, Newsletter No. 7, July 2011, http://somo.nl/dossiers-en/sectors/financial/eu-financial-reforms/newsletter-items/issue-7-july-2011/eu-falling-behind-us-in-regulating-derivatives-first-ep-vote-on-emir/?portal_status_message=Edit%20cancelled

Overall, this means that the EMIR as currently drafted requires a less up-to-date reporting system than obtained in the US, except if ESMA and the EC will decide on the same system.

4.1.2. Proposals for reporting in the MiFID review

In the proposal to revise MiFID, called MiFID II/MiFIR as published by the EC on 20 October 2011, the reporting and public disclosure requirements regarding commodity derivatives and commodity related funds are as follows:

- that all exchanges, MTFs and OTFs report to authorities the complete breakdown of positions in commodity derivatives by all market participants, above a certain minimum, with information about long and short positions and the number of traders per category, amongst others (MiFID II, Art. 60);
- that pre- and post-trade transparency be improved through stricter rules, including regarding transactions by investment firms that relate to OTC transactions and exchange traded funds amongst others (MiFIR);
- that all exchanges, MTFs and OTFs publish a weekly public report with information about the number of commodity derivative contracts (positions), above a certain minimum. Traders who hold these contracts have to be classified according to their main business (investment firms, investment funds, financial institutions, commercial undertakings, and operators of emission allowance derivatives) (MiFID II, Art. 60).

There are some important loopholes in the proposal. For instance, the weekly publication obligation does not apply when the number of traders and their open positions in a given financial instrument fall below a minimum threshold. Also, the classification of traders is poorly or not (yet) defined (see also below).

MiFIR (Art. 24, 26) also promotes transparency by ensuring that ESMA identifies OTC derivatives that need to be traded on exchanges or other trading venues, which provide more publicly available information. The G-20 has agreed that more OTC derivatives should be traded on exchanges by the end of 2012, a deadline that the EU seems unlikely to achieve.

4.1.3. G20: The Agricultural Market Information System (AMIS)

By having transparency into the fundamentals of agricultural commodity supply and demand (production, storage and stocks, trade and consumption), authorities hope to reduce volatility. The G-20 Summit in November 2011 agreed an “Action Plan on food price volatility and agriculture”. This includes a proposal to create the AMIS and an international voluntary network of agricultural production monitoring based on geo-information, to be called the ‘Global Agricultural Geo-Monitoring Initiative’. The aim is to enhance the quality and reliability of information about the fundamentals of physical

commodity markets and to strengthen the collaboration between main producing, exporting and importing countries, commercial enterprises and international organisations.

It remains to be seen, however, whether all countries (for example, China after a long delay promised to report, but considers its reserves to be state secrets) and all companies (some, like Cargill and Louis Dreyfus, are still non-listed companies) will fully cooperate to provide all relevant information, and how this will be used by the financial markets.

4.2. Rules to curb excessive speculation

In order to prevent excessive volatility and speculation in the commodity derivatives market, reducing the number of financial speculators trading in (agricultural) commodity derivatives ('shrinking the market') is an important avenue that regulators are looking into, having not so far been very restrictive. Official proposals to achieve this are:

- ❑ Position limits;
- ❑ Increasing the costs of agricultural derivatives trading.

4.2.1. Position limits

The imposition of 'position limits' means that those who are active as financial speculators (traders, brokers, banks, investors, fund managers, and so on) are restricted as to how many commodity derivatives contracts, or positions, they can hold. There are many variations and much discussion as to how these position limits should be imposed (legally binding, by supervisors or regulators, by the exchanges), and how strict these should be. In order to have the desired effect the following measures would be needed:

- ❑ The introduction of a clear definition of excessive speculation and disorderly functioning of the markets, along the lines of the existing legislation in the US;
- ❑ Supervisors have the power to eliminate, diminish and prevent excessive speculation and disorderly functioning of the markets, based on the precautionary principle;
- ❑ The application of legally binding, ex-ante position limits – that is, limits written into law and before any problems occur– imposed on parties engaged in financial speculation. This does not mean the application of 'managed position limits', whereby supervisors decide how much and when traders should apply position limits. The limits should be introduced for each individual financial counterparty aggregated for all its affiliates and subsidiaries – that is not a position limit for each affiliate or subsidiary. Limits

should be applied in all months across all markets. In addition there should be a limit to the total share of financial speculation in a commodity market, which should be set in relation to the number of hedging activities;

- ❑ The addressing of the price-distorting effect of passive, long-only speculation by pension funds, commodity index funds and exchange-traded funds (so-called 'massive passives'), by creating limits or even a ban on passive speculation;
- ❑ The addressing of financial speculation by multinational commodity trading firms. In the US, these firms have to apply as swap dealers for at least parts of their business according to new legislation. Financial speculative activities that go beyond objectively measurable hedging of commercial commodity activities should be strictly regulated by EMIR and MiFID, including a revision of the exemptions for commodity firms;
- ❑ The prohibition of financial players, such as investment firms, from buying physical commodity-related companies (for example, producers, warehouses, trading houses).

The EU is currently legislating on commodity derivatives trading, as explained below. A major loophole in both the draft EMIR and the proposed revised MiFID is the definition of 'non-financial counterparties' used for producers or end-users (such as agricultural trading or food-processing companies), the problem being that non-financials can abuse their exemption to engage in financial speculation.

4.2.2. No limits to OTC commodity derivatives in EMIR

EMIR does not impose limits on the number of OTC food commodity derivatives that can be traded per counterparty or per type of derivative, notwithstanding requests by civil society that it do so. This means that EMIR does not have special measures to prevent OTC agricultural derivatives being involved in food price speculation.

4.2.3. MiFID Review: not the expected position-limit legislation

According to MiFID II and MiFIR as proposed by the EC on 20 October 2011, limits on the number of contracts which any market participant can enter into must be imposed. However, these position limits are not applied in a fully regulated way, but 'managed', namely:

- ❑ National authorities have to ensure that commodity exchanges or other trading venues themselves are imposing and applying position limits on all market participants over a specified period of time (MiFID II, Art. 59.1) and are having all instruments to deal with the risks of their operations (MiFID II, Art. 50) and risky operators such as algorithmic traders;
- ❑ Position limits can be replaced by alternative arrangements with equivalent effect, such as 'position management with automatic review thresholds';

- The European Commission (EC) is given the power to define the position limits that trading venues need to impose under supervision of national authorities. The EC has to take into account the limits that have been set by trading venues;
- If national authorities want to impose higher position limits than defined by the EC, special justifications will be needed;
- The purpose of the position limits is to “support liquidity, prevent market abuse, and support orderly pricing and settlement conditions” (MiFID II, Art. 59.1);
- National supervisory authorities may temporarily prohibit certain financial products under define conditions (MiFIR, Art. 32) and are given the power:
 - to investigate the positions of (commodity) derivatives traders (MiFID II, Art. 71),
 - to suspend or remove a financial product from trading, including algorithmic trading and high-frequency trading, (MiFID II, Art. 72, (d) and (e)),
 - to request a person to reduce its positions (MiFID II, Art. 72 (f), and
 - to impose “non-discriminatory” derivatives trading limits on any person or class of persons (MiFID II, Art. 72.1.(g)).
- ESMA should coordinate interventions (MiFIR, Art. 33) and position limits (MiFIR Art. 34) imposed by national authorities and assess measures taken by authorities (MiFIR, Art. 33). ESMA also receives a role in publicly disclosing position limits imposed by member state authorities (MiFIR, Art. 34.2). ESMA has the power to temporarily prohibit the marketing, distribution or selling of certain financial instruments under well defined conditions (Art.31);
- ESMA can impose position limits for three months, after which it needs to be renewed. This would be the case if national authorities have not taken action and after ESMA has reviewed all the information on the positions of a trading person, this position is seen as a threat to the orderly functioning and integrity of financial markets “including in relation to delivery arrangements for physical commodities” (MiFIR, Art. 35).

There are several weaknesses in the EC proposal which the EP and the Council can rectify:

- The overall approach taken by the EC is that position limits should be managed by the supervisory authorities, and that there are no ex-ante binding position limits in the legislation itself. However, the EC may decide on position limits that trading platforms need to impose, with national supervisors enforcing them (MiFID, Art. 59). There is no guarantee that the EC will decide on position limits and how strict they will be after facing huge lobbying against position limits. Also, the EC’s mandate to define position limits can be withdrawn by the Council or the European Parliament (EP);

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- The position limits are vaguely defined for instance with no reference whether they would be applied per month and/or per year, and whether they would be aggregated across all trading venues (worldwide) per financial institute so that not each per affiliate or subsidiary can hold derivatives contracts up to position limits;
- The fact that position limits can be replaced by “alternative arrangements” would allow mechanisms to be used whose equivalency might not always be clear, or which are not sufficient to impose limits to trading (but automatically increase limits if trading volume rises);
- The proposed regulations regarding current new mechanisms that distort commodity derivatives markets, namely algorithmic trading and high frequency trading are dangerously weak (amounting to merely a little more risk and trading controls). However, in order to prevent large, quick price swings, the EC proposes that trading venues have mechanisms and ‘circuit breakers’ to halt trading if too erratic. The proposal does not include legal restrictions, let alone a ban, on this kind of trading in food commodity markets. A ban could be necessary, given the massive impact algorithmic trading and high frequency trading can have on prices owing to their swift movements and often highly speculative and destabilising trading (which exploits the smallest price differences in micro-seconds);
- The EC is introducing no special provision to prohibit or prevent speculation on food, nor proposes a mandate to stop and prevent ‘excessive speculation’, as the US authorities have. Instead, the EC uses the phrase “orderly functioning of the market”, which is not defined! Position limits need to support liquidity and “orderly pricing and settlement conditions”. There is insufficient emphasis that position limits imposed by the EC and national authorities should be used to prevent harm but rather mitigate harm already being caused. This EC approach does not use the precautionary principle nor a price limiting instrument, and excludes any consideration of impacts on society, such as people’s right to food;
- Overall, nothing is done to actually exclude – rather than merely limit – financial investors such as pension funds, over-leveraged hedge funds, exchange-traded funds or index tracking funds, which are clearly using derivatives exchanges only for speculative reasons and have distorting effects on the markets. The upcoming review of the UCITS directive, which already limits the inclusion of more than 10% derivatives in investment products, could be a way to further restrict or ban mutual funds or any other investment fund from investing in, and designing investment products based on, food commodity derivatives.

The loopholes and weaknesses in the draft EMIR and MiFID review text have already made the US financial industry put pressure on the CFTC not to impose strong

positions limits, as required in the Dodd–Frank Act. On 18 October 2011¹⁰⁵ the CFTC decided to set the position limits at a level so high that critics claimed them to be ineffective. In addition, the new position-limit rule fails to incorporate emergency reviews of position limits if they fail to prevent excessive speculation.

4.2.4. Increasing the cost of OTC trading

The G20 agreed that OTC derivative trading could be reduced by making it more expensive. This is being integrated into EU legislation in the following ways:

- As much as possible OTC trade will have to be cleared according to EMIR. Because collateral ('margin') will have to be paid by any financial counterparty when clearing, making OTC derivative trading more expensive, this will reduce the attractiveness of derivatives trade, where profitability is based on small amounts. As the collateral to be paid when clearing will be regulated, it could become much more expensive. If a derivative cannot be cleared, other measures will have to be taken to avoid the risk of default by paying collateral;
- In MiFIR (Articles 24, 26), the EC has proposed that more OTC derivatives, and especially those subject to clearing obligations, must be traded in exchanges or other trading venues. Supervisory authorities will identify those derivatives that must be traded on exchanges or other trading platforms. Parties trading on an exchange have to pay membership fees and fulfil certain financial criteria, which makes exchange trading more expensive than OTC trading. Moreover, by proposing to regulate 'organised trading facilities' (OTFs), the EC seeks to force more OTC trading that currently uses OTFs into regulated markets similar to exchanges. Because (investment) banks, which have been very active on the commodities market and operating OTFs, will not be allowed to continue to use their own capital in OTF trading with clients (MiFID II, Art. 20), trading will become more expensive for them.

The details of the rules to making clearing and the use of exchanges or other trading venues compulsory will need to be very clear in order to avoid circumvention – a strategy in which the financial industry has been very inventive, for example by using swaps. There is likely to be a huge problem if the clearing is confined to a few clearing houses, where all the risks will be concentrated, and if no measures against such concentration are taken. If high volatility causes clearing houses to call for high margins, farmers and end-users may tie up money in hedging rather than investing it in raising production, which might stabilise prices. In general, making food commodity derivatives more expensive as a way of reducing speculative commodity trading might in the end be counter-productive, as the extra costs might be passed on to the

¹⁰⁵ IATP, "Weak CFTC position-limit rule ineffective, unsound says IATP – Wall Street flexes muscles, excessive speculation to continue on agriculture commodity markets", press release, 18 October 2011.

final user of the commodity. Another way to make the transactions more expensive is to introduce a financial transaction tax, the level of which could be raised when speculation increases and when prices of basic foods become volatile.

4.3. Stronger supervision

Once regulation is in place, national supervisors play a major role in ensuring that the rules are followed. In the financial sector, supervisors are often called regulators, because they regulate the details of what is in the legislation. In the EU legislation (EMIR, MiFID II/ MiFIR, and so on), the European Securities and Market Authority (ESMA) has to draft many of the details of how to implement EU legislation, and the European Commission (EC) decides on the final versions. Both bodies conduct consultations with the industry which carries the danger that legislation will be weakened.

Because national authorities of EU member states want to retain power, supervision and micro-regulation in the EU is divided between ESMA and the national level. This can result in some differences between different member states, which derivatives traders may want to exploit, trading in the country with the weakest legislation. It is therefore important that ESMA has a strong mandate to force national authorities to implement the stricter new EU legislation and to coordinate supervision in member states.

Since commodity derivatives markets are complex and their dynamics change rapidly, the minimum requirements to ensure their strong supervision are:

- ❑ Well-resourced supervision, with enough experienced people and sufficient financial means;
- ❑ A mandate to intervene in the huge, complex commodity derivatives markets, to stop and prevent excessive speculation, and ban disruptive or harmful products and practices. This should include a mandate to impose effective sanctions and enforcement measures;
- ❑ Supervisors should also be allowed to intervene when agricultural derivatives trading and prices undermine either people's right to food or farmers' production. Not only the stability of the market but avoiding harm to the economy and society as a whole should be in the remit of supervisory powers;
- ❑ Supervisors and regulators of financial commodity markets should cooperate with those of physical commodity markets through close institutional links, or a special body such as the CFTC in the US;
- ❑ In order to ensure that no abuses or manipulation occur, strict definitions are required of 'end-users', 'commercial parties' or 'non-financial counterparties',

who are hedging for their commodity business, and of financial counterparties/participants who speculate;

- Supervisors should have access to all information regarding production, storage, transport, delivery and trading of physical food commodities;
- If supervisory budgets are too small for these tasks, owing to governmental budget cuts, commodity derivatives trading should be limited, and no OTC commodity derivatives trade allowed;
- Authorities of countries suffering the impact of commodity price volatility, and stakeholders in the EU and in developing countries, should have access to EU supervisory bodies.

4.3.1. Supervision in the new EU legislation

What has been achieved so far regarding stricter supervision through the EU legislative proposals that affect food derivatives OTC trading and trading venues is:

- The draft EMIR text (Art. 6, 67) agreed upon by the EP in July 2011 would allow national and European supervisors to have access to all OTC derivatives information as all derivatives need to be reported to trade repositories;
- As explained above, national supervisory authorities and ESMA are given the power to investigate, to suspend and remove, or ban, particular trading products and derivatives instruments from trading and to impose position limits, with special reference to protect the delivery arrangements for physical commodities. There are some particular limiting conditions attached which guarantee the protection of investors and traders against too strong interventions by supervisors;
- With the purpose of having a coordinated approach to the supervision of physical and financial commodity markets, the EC proposal to revise the market abuse directive (MAD) defines market abuse very broadly, with focus on insider trading and market manipulation. The EC proposed new Market Abuse Regulation (MAR, Art. 8) covers physical commodity markets so that manipulation in the spot market in order to influence prices in the financial market, or vice versa, will be sanctioned. Overall, MAR aims at providing better investigative and cooperation powers for European and national supervisors, and ensuring that effective sanctions are being applied across the EU in a more transparent way.

New legislation is providing European and national supervisors with more power to intervene, and even to ban harmful trades in commodity derivatives. In practice, the capacity of the supervisory authorities to deliver on all their responsibilities in the massive derivatives markets, and particularly in the commodity markets, is not guaranteed. ESMA is massively understaffed and under-resourced, compared with the CFTC in the US even though also the budget of the CFTC has been cut.

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Moreover, the EU has not introduced supervisory institute or a coordination unit – like the CFTC in the US – which deals particularly with the commodity derivatives markets, and has sound knowledge of and links with the physical commodity markets. Indeed, more and more financial counterparties buy companies related to physical commodity trading, and physical commodity traders have hired staff with financial commodity speculation expertise.

Supervisors' powers of intervention are centered on threats to orderly market functioning. Supervisors have no mandate, therefore, to intervene to protect those whose right to food is being undermined by price volatility, or by very high food commodity derivatives prices. In general, the supervisors still have no mandate beyond protecting the stability of the financial system in order to protect the economy and society from negative social, economic and environmental consequences from the financial market activities.

Feeding the Financial Hype

How Excessive Financial Investments Impact Agricultural Derivatives Markets

This report provides an overview of the on-going discussion on the impact of the financial investments in commodity derivatives markets. These investments have dramatically increased over the past decade, a period of sharp and sudden price swings in both futures and physical markets for commodities, including food commodities. Rising food prices are hurting the poorest people who spend up to 80% of their income on food.

An increasing number of studies find a relationship between the increased financial speculation and price developments that are unrelated to real supply and demand. According to the precautionary principle as enshrined in the EU Lisbon Treaty public action to curb this 'excessive speculation' is warranted. We present policy measures to do this, with a focus on the rules currently under discussion in the European Union.

