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COMMISSION STAFF WORKING DOCUMENT

Agricultural commodity derivative markets: the way ahead

Accompanying document to the

**COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN
PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL
COMMITTEE AND THE COMMITTEE OF THE REGIONS**

A better functioning food supply chain in Europe

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Agricultural commodity derivative markets: the way ahead

1. INTRODUCTION

In the December 2008 Communication on food prices in Europe (1)¹, the Commission recommended "to continue monitoring the markets for agricultural commodities futures in the period ahead and investigate actively how excessive volatility and the build up of herd like speculative positions can best be avoided in view of the potential damage that these may cause". Under the heading "Examine measures to discourage speculation to the detriment of commercial operators in agricultural commodity markets", the Communication further stated that "the Commission will examine, together with the regulators of commodity markets and in close contact with other non-EU regulatory authorities (in particular the US, where the most important exchanges are located) what measures contributing to a reduction in price volatility in agricultural commodity markets could be taken".

As a follow-up of this Communication, this paper will focus on those **regulatory issues** and **policy initiatives** that most specifically relate to derivatives for agricultural commodity markets²:

- (1) **Transparency:** especially definition of traders, including appropriate disaggregation, reporting on traders' positions.
- (2) **Supervision:** especially, speculative position limits and hedge exemptions.
- (3) **Degree of regulation of Over-The-Counter activity** (e.g. more central clearing).
- (4) **Market structure/contracts** (e.g. lack of price convergence).
- (5) **Linkage** a) between regulated futures and related commodity markets; b) amongst different exchanges (especially EU-US).

Based on a review of recent developments as well as on a series of consultations with the main stakeholders (market participants, representatives of public authorities including regulating authorities), the present paper will provide background analysis and some recommendations on these issues.

2. BACKGROUND ANALYSIS

Futures markets are the most traditional form of derivatives for agricultural products. Activity related to options (on-exchange and off-exchange) has also increased. In addition, Over-The-Counter (OTC) products have developed over time in order to respond to an increasing demand for specific contracts. Commodities represent a small share of the overall OTC derivatives activity (an estimated 0.7% of the notional amounts) and agricultural commodities an even smaller part. Therefore, this section analyses available data for the main futures (and options) markets for agricultural commodities. Considering the linkage with the food chain, a few key

¹ Main sources for the review are indicated in the Appendix and referred to by their number in the text.

² Definitions can be found in the glossary.

commodities used for food/feed prices have been selected. The analysis focuses on the three issues addressed in the December 2008 Communication and the related Working Paper on speculation (2): increased volatility, growing and changing activity on futures markets, lack of price convergence observed on some US markets.

The main futures markets for agricultural commodities are located in the **US**. The Chicago Mercantile Exchange (CME)³ is the benchmark for several commodities - especially wheat and maize – that were selected for the purpose of this analysis.

Exchanges for agricultural commodities are less active in the **EU**. This can be explained by historical and policy developments. Futures markets in the EU are more recent than in the US. As regards policy, the successive reforms of the Common Agricultural Policy have significantly reduced guaranteed prices. As a result, commodity traders are today more prone to use futures markets for hedging and price discovery than they were before the reforms. This is one of the factors explaining the increased activity on European-based exchanges. The main agricultural contracts are traded on Euronext⁴ in London (cocoa, coffee, sugar, feed wheat) and Paris (milling wheat, rapeseed, maize). There are also futures markets in Germany (for hogs, piglets, potatoes) and in Spain (for olive oil).

2.1. Increased volatility

As stated in the December 2008 Communication on food prices in Europe, "the Commission is of the opinion that such a degree of volatility as the one observed during the recent months benefits neither producers nor consumers". This is the background against which "measures contributing to a reduction in price volatility in agricultural markets" are examined in this paper. A minimum degree of volatility is needed for futures markets to perform. However, too high volatility can destabilise markets. The wider and more unpredictable price changes are, the greater the possibility of realizing large gains by speculating on future price movements.

The related Commission Staff Working Document analysing whether there was "a speculative bubble in commodity markets" did not explore volatility as such. The document reviewed evidence for and against a speculative bubble and concluded that "the most likely explanation of price increases since the beginning of 2007 to mid-2008 seems to be a combination of economic fundamentals in particular and factors specific to the financial markets, which might have amplified price changes". The latter part of the conclusions points to volatility.

The Commission services have further analysed historical price volatility for selected markets (several cereals, soybeans and derived products on the CME, as well as for milling wheat and rapeseed on Euronext). A summary note on **historical volatility** is available on internet (3).

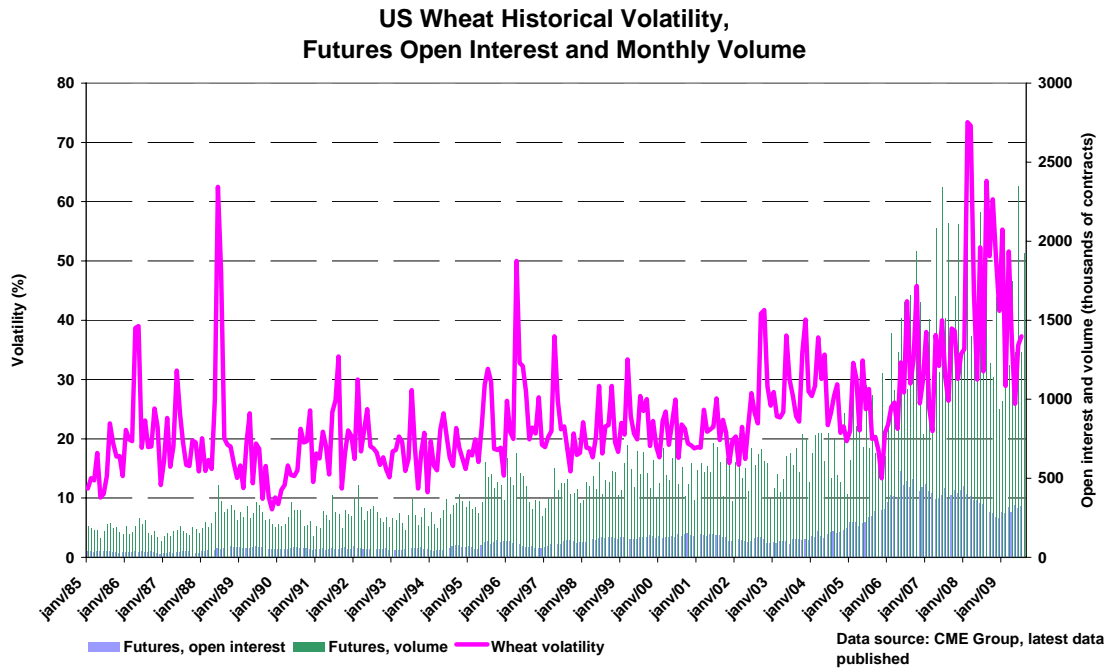
Historical volatility is the annualised standard deviation of the percentage change in daily settlement prices. Graph 1 shows historical price volatility against futures open interest and volume on the CME wheat contract starting in 1985. It appears that increases in open interest starting in July 2005 coincide with increases in volatility on

³ The Chicago Board of Trade was absorbed by the CME in 2007.

⁴ Euronext absorbed the former *Marché à Terme International de France (MATIF)* and well as the *London International Financial Futures and Options Exchange (Liffe)*. Formally *Liffe* is "the brand name of the derivatives business of Euronext". The *New York Stock Exchange (NYSE)* bought the pan-European Euronext exchange in 2006.

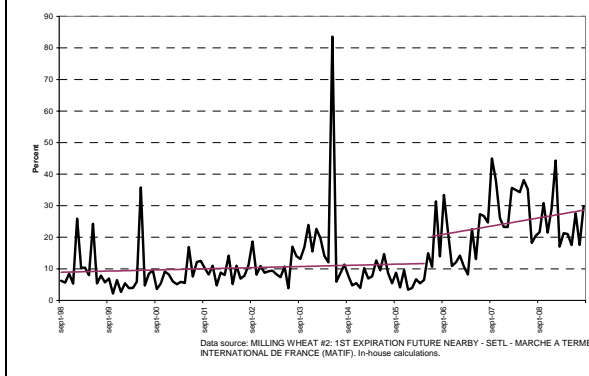
average. It seems that changes in volatility became sharper on a month-to-month basis. Similarly, the fall in open interests and volume in the second half of 2008 coexists with an overall decline in volatility.

Graph 1 US Wheat, CME

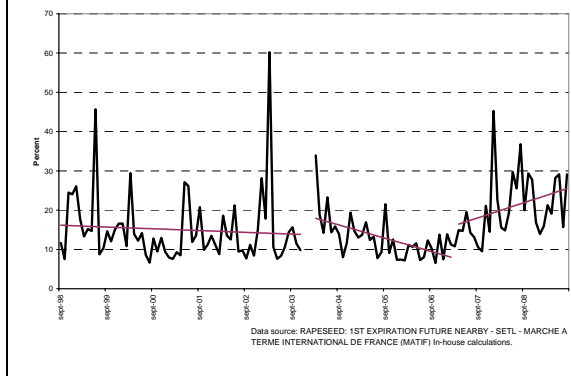


Commodities traded on European exchanges, although smaller in terms of volume, were not shielded from increased volatility. Graph 2 and 3 show the development of historical volatility for milling wheat and rapeseed on Euronext.

Graph 2 Milling Wheat – Euronext, Paris



Graph 3 Rapeseed – Euronext, Paris



Ignoring the peak of May 2004, milling wheat experienced the highest volatility in September 2007 and January 2009 when it reached around 44%. However, in between those peaks, the volatility was as low as 18%, and since February 2009 it has fluctuated between 17 and 30%. The yearly average was at its highest in 2008. Although experiencing peaks, wheat volatility was relatively stable between 1998 and mid-2006 when it started increasing. Intra-day price volatility also increased. While it was usually lower than 1% (with some exceptions) for wheat, it has moved around an average 3% since mid-2007 and even came close to 10% at some points.

The rapeseed contract dates back only to November 1998 and thus the data might not be sufficient to conclude whether or not volatility increased. However, results indicate that in 2008 volatility stayed above 30% longer than in the past. Trend lines fitted to subsets of data show varying patterns although after 2007 we observe an increasing slope.

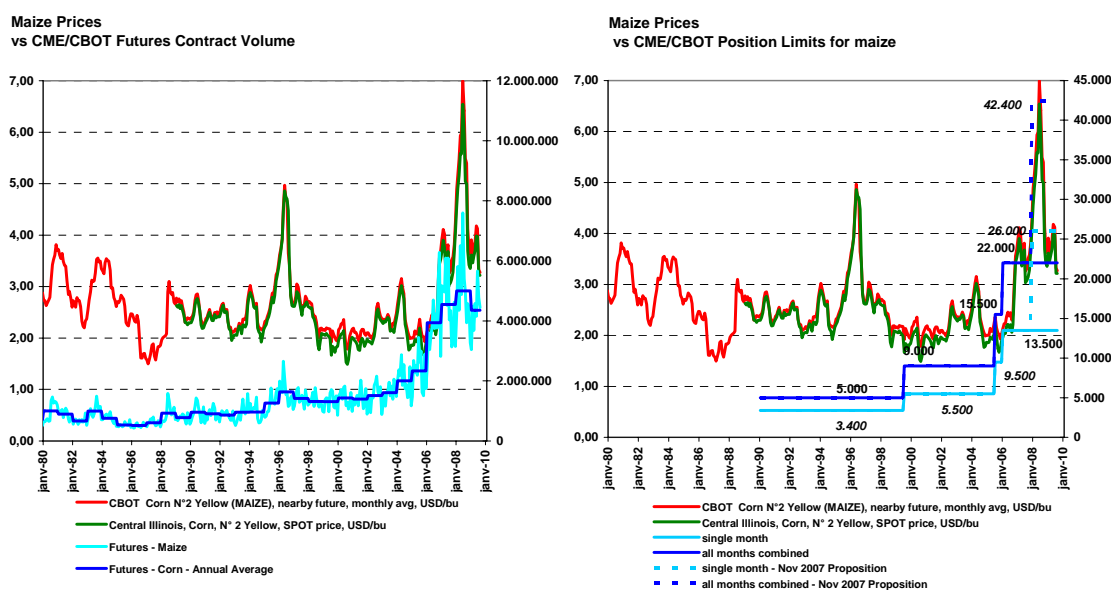
The note concludes that "volatility has increased at least in some commodity markets. (...) There seems to be an overlap between periods of high prices and increased volatility. (...) While other factors and fundamentals are at play and have to be considered, there is some time overlap between increased volatility and increase in open interest on the commodity markets".

2.2. Activity on futures markets

The **increase** in the number of contracts traded on the CME futures for wheat could be seen in graph 1. In May 2006, a record-high number of more than 546 thousands contracts were traded. This was nearly four times higher than the average for 2000-2005. When further comparing monthly traded volumes (VT= contracts settled) and open interest (OI = contracts remaining open at the end of the month), it appears that the ratio OI/VT has reached unusually high levels in 2006 and 2007 when prices were rising.

Graph 4 shows developments for maize on the CME futures markets.

Graph 4 CME Maize: prices, contract volume and position limits

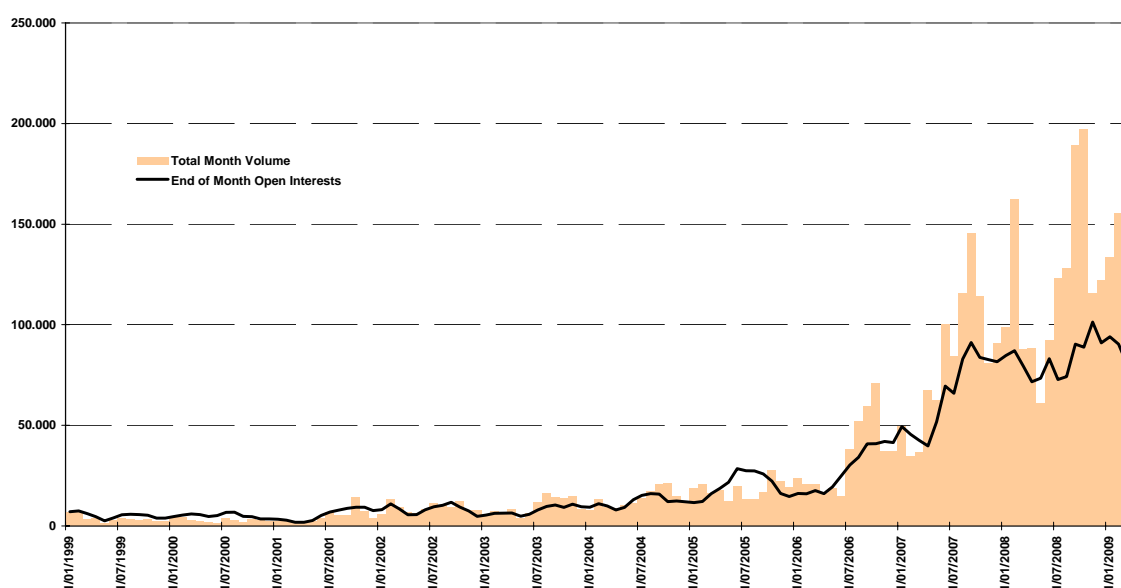


The volume of contracts seems to **move in line with prices**: it increased up to June 2008 and has globally declined since then. In addition to the drop in prices, the financial crisis can explain part of the reduction in open interest (e.g. hedge funds liquidating their positions). Speculative position limits applying for the number of maize contracts are also shown: they were increased in July 1999, July 2005 and December 2005. Further increases were considered in December 2007, but they were not implemented following the debate on their possible impact on activity and prices. The causality link between the increments in speculative position limits implemented

in 2005 and increased activity is not straightforward. According to a study by US researchers (Irwin et al, 11), the increase in position limits likely accommodated the growth in speculative interest in maize, soybean and wheat futures, but some of the increase would have occurred without the extension in limits, as new market participants received hedge exemptions (see section 3.2.).

Activity also increased on the Euronext futures markets, as illustrated by graph 5 in the case of milling wheat. The number of traded contracts rose by 50% between 2007 and 2008. The increase was even sharper (+150%) for options. The volume traded jumped and dropped in autumn 2008 (there could be a link with the financial crisis) but it resumed growth in the last part of the year.

Graph 5 Euronext milling wheat: monthly volume, end of month open interest



Another issue relating to activity on futures markets is the change in the relative importance of different categories of traders. The US Commodity Futures Trading Commission (CFTC)⁵ publishes weekly reports breaking down open interest by position (long and short) and categories of traders (Commercial⁶, non-Commercial). A supplementary report further distinguishes commodity index traders (CIT) and graph 6 on wheat was computed on this basis. To summarise, commercial players were mainly on the short side, index traders mostly on the long side and other non-commercials⁷ on both sides. In 2007 the share of commercials in short positions went below 50% and further declined to 30% in November 2008. Since then, it has fluctuated between 30 and 40%. When considering index traders and other non-

⁵ The Commodity Futures Trading Commission (CFTC) was created in 1974 as an independent agency with the mandate to regulate commodity futures and option markets in the United States.

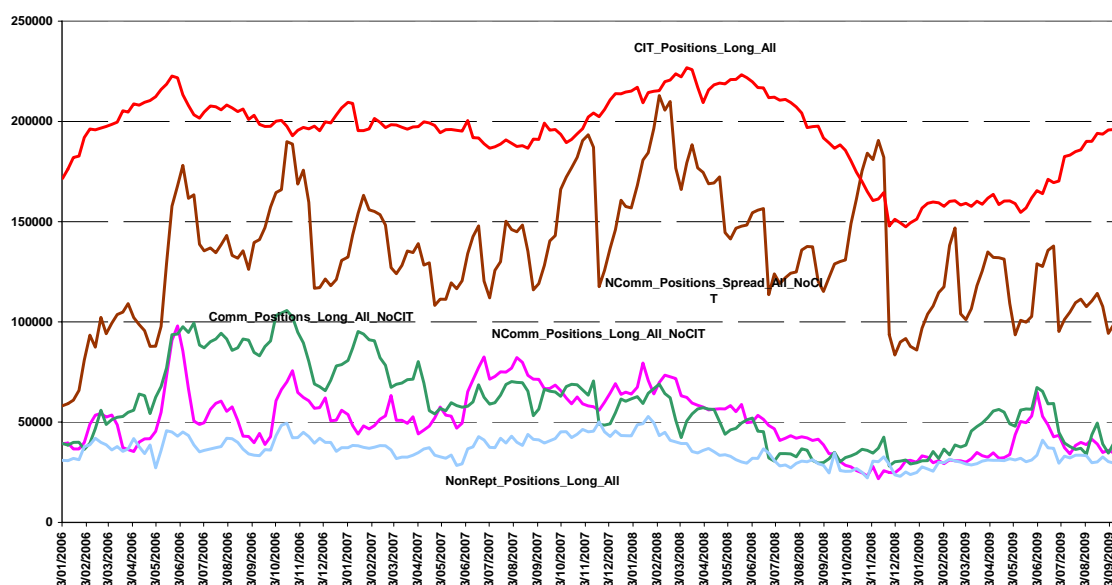
⁶ "All of a trader's reported futures positions is classified as commercial if the trader uses futures contracts in that particular commodity for hedging", as defined by the CFTC.

⁷ For non-commercials, the report indicates the "spreading". For instance, if a non-commercial holds 2000 contracts long and 1500 short, 500 contracts will appear under long and 1500 under spreading. In other words, the "spreading" category needs to be considered both on the short and on the long sides.

commercials together (respectively CIT and NComm in graph 6), their share in long positions went beyond 80% between 2007 and 2009. Index traders alone accounted on average for 40% of long positions in 2007. Their share came close to 50% in the first part of 2008, but declined in the wake of the financial crisis. In recent months, the number of contracts held by Index traders on the long side has resumed growth and their share reached again 50% of all long positions in September 2009. This may suggest that this category of traders is predominantly on one side of the market (buying contracts).

Graph 6 CME Wheat: Open interest by type of traders, options and futures combined

CFTC - COT Supplemental report - Long positions



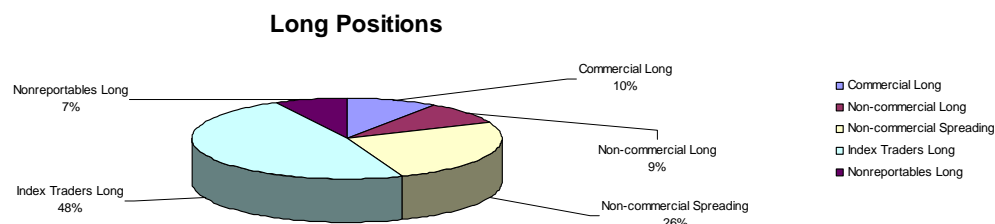
Alongside enhanced activity on the futures markets, new products are also traded, especially in relation to Commodity Indices. The most common related instrument is a commodity swap. Swap dealers, usually affiliated with a bank or other large financial institution, act as counterparties to both commercial firms seeking to hedge their price risks and speculators seeking to gain price exposure in commodity markets. Exchange traded funds and notes are other new tools related to indices.

Since September 2009, the CFTC has published an additional report entitled "disaggregated Commitments of Traders". This report provides data on traders positions based on a new disaggregation: 1) Producer/Merchant/Processor/User; 2) Swap Dealers; 3) Managed Money; 4) Other Reportables. Detailed definitions are specified in the glossary.

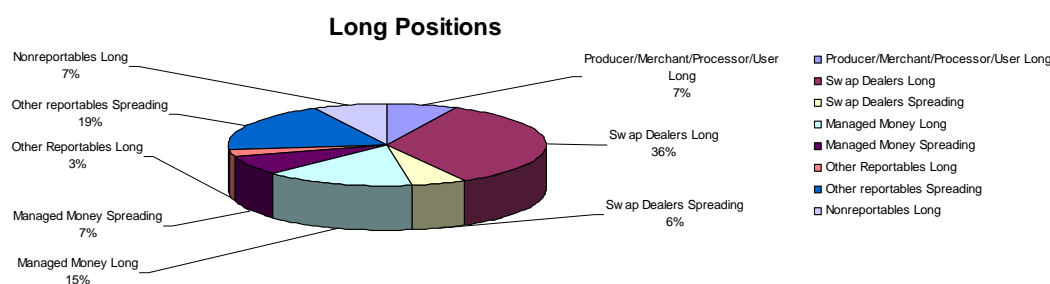
Graph 7 provides a comparison of data provided under the supplemental report (distinguishing CIT) and under the new disaggregated report. Data for the new report is not yet available prior to September 2009.

Graph 7 Breakdown of positions, options and futures combined on 15 September 2009

Provided in the supplemental (CIT) report



Provided in the new "disaggregated" report



The new category "Producer/Merchant/Processor/User" can be considered as roughly equivalent to the commercials in the "supplemental" report. They have the lowest share in long positions (7%). Index traders have the highest share in long positions (48%) when considering the supplemental report, which introduced a specific category for these traders. Based on the new report, swap dealers hold the highest share of long positions (42%), while "money managers" and other non commercials each hold an equivalent share (22%).

When considering similar charts for the short side, the disaggregated report shows that commercials hold the highest share of contracts (27%), followed by money managers and non commercials (around 25%) each.

2.3. Futures and spot prices

The fundamental link between the prices of the futures contract and the underlying cash market is the "cost of carry" until the expiration of the contract (e.g. storage plus insurance). As long as the relationship holds, supply and demand factors affecting prices in cash markets should be transmitted to the futures markets and futures and spots converge at the end of the settlement period.

Although convergence has not always been perfect, historically the relationship between the cash and futures markets has been fairly constant with predictable seasonal variation. However, the difference between the future and spot prices has increased lately with futures prices at the expiration period being well above spot prices.

This issue was already identified in the above-mentioned Staff Working Document on speculation (2): "since 2006, a **lack of convergence** between futures and spot prices has been observed for contracts based in the United States. This mainly

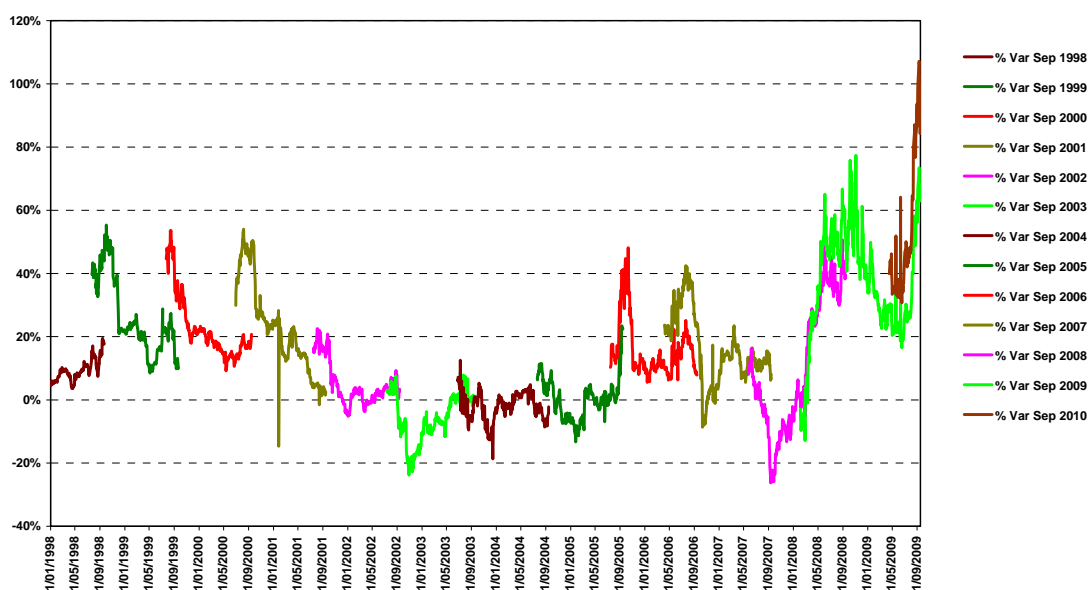
concerns wheat, as well as soybeans and to a lesser extent, maize (...). The lack of convergence may well have made it more difficult for commercial operators to use futures markets for traditional hedging activities, raising questions about the efficiency of the markets in achieving price discovery and hedging activities".

The Commission services updated in-house analysis on the lack of convergence. Several comparisons were carried out, considering historical developments in prices, the gap between futures and corresponding spot prices in absolute and percent terms, at a given point in time and over the duration of a contract.

Graph 8 focuses on the CME contract for wheat, for which persistent lack of convergence is observed.

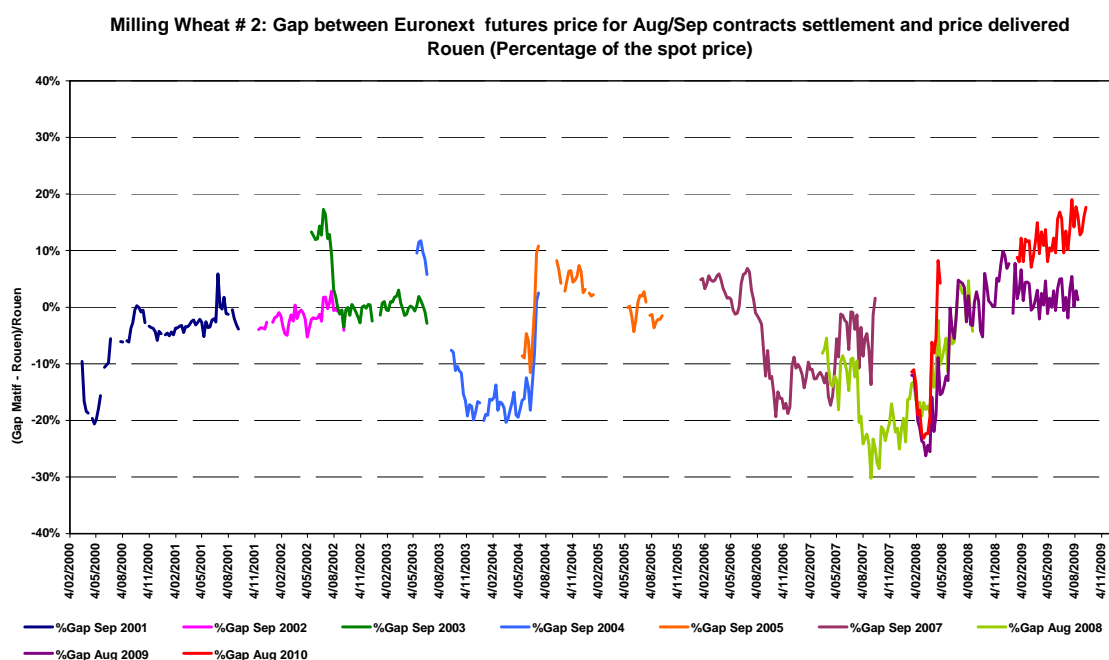
Graph 8 Gap between CME futures and spot prices for US wheat

Soft Red Winter wheat: Price gap(%) between CME September Futures Settlement to N° 2 ST LOUIS SPOT price



The difference between the futures and the spot prices has widened since 2006 and has not come close to zero at the time of settlement. For the September 2008 contract, the price gap first dropped to minus 25% and ended at plus 50%. The gap then came close to 80% for the September 2009 contract, before declining to 20% and ending at 70%. As the price gap at the maturity of the contract has widened, the lack of convergence has become a growing problem. The causes and solutions to the lack of convergence are actively examined and debated in the US (see part 3.4). Market participants or experts consulted on the issue indicated several possible causes. In particular, they pointed at weaknesses in the delivery process. One problem in this respect is the competition between wheat, maize and soybeans in storage facilities. Experts also outlined a more generic problem: the CME wheat contract is established for a class of US wheat (soft red winter) but used as a benchmark for the world wheat market.

Graph 9 Gap between Euronext Futures and spot prices for French wheat



Similar analysis carried out on the Euronext contract for milling wheat (graph 9) does not show a problem of lack of convergence at settlement. Although the gap has widened, at the time of maturity future and spot prices converge. **Generally, no problems of lack of convergence were reported for Euronext contracts on agricultural commodities.**

3. REVIEW OF MAIN ISSUES

Most of the available documents on issues related to speculation on commodities markets focus on US. The US Congress as well as the CFTC have organised several hearings on "excessive speculation"⁸ on commodity markets. Issues discussed in this context can be relevant for the follow up to the Communication on food prices in Europe, although there has been less concern about "excessive speculation" in the EU and no problem of convergence has been observed on European futures markets for food commodities. Nevertheless, some concerns have been expressed in the EU that such problems may one day arise if no preventative measures are taken in the EU. It is therefore useful to look at how the discussion has evolved in the US. Furthermore prices for US agricultural commodities are often used as a benchmark for other markets. This is the case in Europe for many crops used for feed or food purposes (wheat, maize and to a lesser extent soybeans, rice and sugar).

3.1. Categories of traders

Contrary to the EU – where no obligation to publish information by category of traders exists – the CFTC collects market data and position information on a daily basis. The information is then published each week for the major commodity derivatives (futures and options).

⁸ Based on the US Commodity Exchange Act, "excessive speculation" can be defined as "causing sudden or unreasonable fluctuations or unwarranted changes in the price of a contract commodity".

The so-called "Commitments of Traders" (COT) report provides data broken down between Commercial and Non-commercial holdings According to the US CFTC: "All of a trader's reported futures positions in a commodity are classified as commercial if the trader uses futures contracts in that particular commodity for hedging". The CFTC currently examines whether redefining allowable hedging activity is needed. The CFTC explains the definition of non-commercials as "not involved in the production, processing merchandising or other activity in the traded commodity".

Since end 2006 a supplemental report indicates in a separate category the positions of commodity index traders (CIT) for 12 agricultural futures markets. In the COT report, CIT are both in the non-commercial (e.g. managed funds, pension funds and other investors seeking exposure to broad commodity index) and commercial (swap dealers) categories. In other words, the classification is not water-tight.

In September 2008, the CFTC released a staff report on "commodity swap dealers and index traders" (8) to "better identify the amount and impact of Index trading on the energy and agricultural markets". The CFTC estimated that over-the-counter (limited) and on-exchange index investment activities for the 12 agricultural commodities increased to reach an estimated value (notional) close to 60 billion USD by June 2008. Detailed results are presented for 3 agricultural commodities for which the index trading activity represented significant shares of total notional values: 47% for wheat, 23% for cotton, 18% for maize. Recommendations issued by the US CFTC included the following points: 1) to remove swap dealers from commercial category and create new swap dealer classification for reporting purposes; 2) develop "long form" reporting for certain large traders; 3) review whether to eliminate bona fide hedge exemptions for swap dealers and create new limited risk management exemptions (see below).

Accordingly, the CFTC has taken initiatives to improve **transparency**. Data on commodity index investment (as in the above-mentioned report) is released on a quarterly basis. According to the latest report, the notional value of index investment for the 12 agricultural commodities was estimated at 32 billion USD in June 2009, nearly half of the value of June 2008. Two main factors explain this drop: the contraction of investment activity on commodity markets in the wake of the financial crisis and the reduction in commodity prices. From September 2009 onwards, an additional weekly report is available for 22 agricultural commodity markets. The "Disaggregated Commitments of Traders" report provides data broken down by new categories: 1) Producer/Merchant/Processor/User; 2) Swap Dealers; 3) Managed Money; 4) Other Reportables. Detailed definitions are specified in the glossary. To summarise categories 1) and 2) are considered as commercials in the COT report, while categories 3) and 4) are considered as non-commercials⁹. The CFTC will review whether to replace the commercial/non commercial breakdown by the more disaggregated one or to keep publishing both types of reports.

The CME also commissioned an "evaluation of the influence of large reporting traders on futures markets performance" (9). The study found some positive correlation between index trader and/or money manager participation and increased volatility for maize, wheat and cotton. This could be linked to the long only strategy

⁹ As explained earlier, the classification commercials/non commercials is different in the supplemental report (that introduced the commodity index traders category).

of index traders (followed by money managers) when the market was bullish. However, statistical analysis "held little evidence that any group has a sustained influence on prices".

In June 2009, a US **Senate** sub-committee published a long report on "excessive speculation in the wheat market" and later organised hearings on this issue (10). The report singles out the impact of commodity index traders. According to the findings, index traders "increased futures prices, impeded price convergence and contributed to unreasonable fluctuations" due to the "large number of contracts" they purchased on the CME futures markets.

3.2. Position limits

The US CFTC establishes speculative position limits for agricultural contracts that are traded on specifically identified markets. The CFTC Regulation simply sets forth how many contracts a "speculator" may hold, long or short, in each of these contract markets for futures and options combined. There are "spot month" speculative position limits for contracts in the delivery cycle, based on the amount of physical commodity that is deliverable. There are also "single month" and "all months combined" limits, linked to open interests for the most recent calendar year. The "all month limits" establish the maximum number of positions a "speculator" can hold in all trading months including the spot month. Commodity-specific limits were last increased in December 2005.

However, participants who can demonstrate that their futures positions are "bona fide" hedging transactions may apply to the CFTC and to the exchange to receive an exemption and on this basis, may hold positions in excess of these limits. The hedging exemption explains why position limits theoretically apply to "speculators". Still, there are traditional and non-traditional hedge exemptions. One condition for the non-traditional hedge exemption is that "the positions may not be carried out into the delivery month". Hedging exemptions are not always linked to the actual use of a commodity. The CFTC granted hedge exemption to swap dealers (for their OTC exposure to a commodity index) as well as to index traders.

In its September 2008 report (8), the CFTC found out cases of main clients of swap dealers for which the combined on-exchange and OTC equivalent positions were above the speculative position limits (7 in the wheat markets, 3 in the soybeans market, 1 in maize, 6 in sugar). Most of these traders were non-commercial (hedge and pension funds, exchange traded funds). This does not mean that the law was not observed, as these cases were covered by exemptions. The CFTC is currently reviewing hedging exemptions, as recommended in the report. In March 2009, it published a concept release on whether to eliminate the bona fide hedge exemption for certain swap dealers. In August 2009, the CFTC withdrew exemptions granted to two traders for the soybeans, maize and wheat contracts.

In the EU, while some rules applicable to the Euronext derivative markets are harmonised within the EU Directive for Market in Financial Instruments (MiFID), others are applicable only in the location concerned. This is the case for position limits. Limits are implemented in the Paris-based contracts. Delivery limits are set by the clearing house for agricultural commodity contracts. They are published 80 days before the last trading day and are applicable for 12 days before the last trading day of the delivery month. Such limits do not apply for the London-based contracts.

3.3. Over the counter

Detailed data on OTC activity in agricultural commodities is not publicly available. As explained in the Commission Staff Working Paper on derivatives markets (4), "While exchange-traded derivatives leave a transparent trail in terms of positions, prices and exposures, in the mostly OTC market for derivatives, information available to market participants and supervisors is limited."

3.4. Lack of convergence

As indicated above, the lack of convergence between futures and spot prices may make it more difficult for commercial operators to use futures markets for traditional hedging activities and price discovery.

Such an issue is widely debated in the US. Many documents are available on the subject: testimonies in US Congress and related reports, CFTC initiatives, actions taken by the exchanges, research by Universities (selected references are specified in Annex II).

In a 2007 study, a team of **researchers** of the University of Illinois at Urbana – Champaign (11) already noted a failure to accomplish one of the fundamental tasks of futures market for wheat. For maize and soybeans a weakness (but not a failure of convergence) occurred. These authors came back to the issue in 2008 and discussed four solutions: 1) encourage longs to liquidate; 2) cash index rather than certificates market; 3) limiting hedge exemptions; 4) expanding delivery capacity. In March 2009, the team concluded that changes implemented in the meantime by the CME (see below) appear to have been sufficient to address problems in the maize and soybean markets, but that these markets should nevertheless be closely monitored. For wheat however, the researchers consider that "a major change in delivery terms is needed in order to address the underlying structural problems in the contract".

Similar conclusions were reached by the **USDA** (12) considering that evidence does show that the link between futures and cash prices has weakened, but market participants continue to use futures markets as a price discovery mechanism.

The **CME** introduced several changes in their contracts to address the lack of convergence: 1) limiting the number of delivery certificates that can be held for non-commercial purposes for the wheat, maize and soybeans contracts (implemented since February 2009); 2) adding delivery locations, 3) increasing storage rates (went into effect in July 2009 for wheat); 4) adjusting the quality to convert the contract from feed to human consumption grade (to be implemented gradually starting in September 2009). Although it has been suggested¹⁰ that some of these changes (increasing storage rates) may have improved the performance for some of the March 2009 contracts (soybean and maize), it is too early to draw conclusions on the actual effectiveness of such changes.

The lack of convergence was also addressed in the report of the **Senate** sub-committee on "excessive speculation in the wheat market" and in the related hearings. The report concludes that "index traders impeded price convergence" and "contributed to unreasonable fluctuations and unwarranted price changes". By contrast, the CME/Informa study on large traders (9) recalled that "index traders and

¹⁰ Irwin et al. (2009b).

money managers had a small presence in the days leading to expiration. This necessarily limits their influence on convergence".

In his testimony (13) before the Senate, the **CFTC** Chairman stated that the "continued lack of convergence has significantly diminished the usefulness of the wheat futures market for commercial hedgers" and was "unacceptable". He outlined "three factors believed by many market participants to be involved: First, the relative sizes and scale of the participants in the wheat market. Secondly, the design of the wheat futures contract. Third, the large "carry," or additional price paid for successive futures contracts". As regards the participants, the Chairman indicated that "index investors, through futures contracts, were invested in the equivalent of three years of production of soft red winter wheat¹¹". Large carry means that "it has been profitable for traders to keep grain in storage, as prices for out dated futures are greater than near dated futures". The CFTC also organised several consultations on the lack of convergence and established a specific sub-committee on the issue.

The debate on the causes and consequences of the lack of convergence goes on.

4. CURRENT LEGISLATION AND POLICY INITIATIVES

4.1. Regulatory issues, state of play

4.1.1. European Union

Investment services and activities including trading in **financial instruments** are regulated in the EU by the Markets in Financial Instruments Directive (MiFID). Commodity derivatives are included in the list of financial instruments covered by the MiFID¹². Thus, both trading and investment services and activities concerning these instruments (including agricultural commodity derivatives) fall within the scope of MiFID. Commodities are defined in MiFID as any goods of a fungible nature that are capable of being delivered, including metals, agricultural products and energy¹³. The definition of commodity derivatives includes (1) commodity derivatives that must or may be settled in cash at the option of one of the parties, (2) commodity derivatives traded on regulated markets or multilateral trading facilities (MTFs), which can be physically settled, and (3) similar contracts traded over the counter which, however, are not spot contracts and possess the characteristics of financial instruments because they are standardised, or are cleared and settled through recognised clearing houses or are subject to the provision of margin¹⁴.

Investment services and activities covered by MiFID are listed in an exhaustive manner under Annex I of MiFID Directive.

MiFID established a comprehensive regulatory regime governing the **execution** of transactions in financial instruments irrespective of the trading methods used.

¹¹ The CME wheat contract is for soft red winter (SRW) that only constitutes 20% of the US production and 2% of the world wheat production. But the CME contract is considered as the global benchmark for wheat. The discrepancy between the "small" US base and the worldwide use has also been identified as a possible factor contributing to the lack of convergence.

¹² MiFID Annex I – List of Services and Financial Instruments, Section C – Financial Instruments

¹³ Regulation (EC) No 1287/2006 Article 2(1)

¹⁴ MiFID Annex I, Section C(5), (6) and (7). See also Regulation (EC) No 1287/2006 Article 38(1) and Recitals 21 and 25

There are three categories of **trading facilities** in MiFID:

- Exchanges / Regulated Markets
- Organised electronic trading facilities called "Multilateral Trading Facilities"¹⁵
- Banks or investment banks operating in a systematic way on their own account with multiple clients ("systemic internalisers" – "SI")

MiFID introduced rules for the licensing and operation of Regulated Markets (RM)¹⁶. MiFID treats Multilateral Trading Facilities (MTFs) in a similar manner to RM in many respects.

MiFID establishes pre-trade and post-trade transparency obligations imposed on operators of regulated markets, MTFs as well as systematic internalisers in respect of orders, quotes and completed trades concerning shares admitted to trading in a regulated market. **However, these trade transparency requirements do not cover derivatives.** Hence there are only relatively high-level transparency obligations with respect to exchanges listing commodity derivatives as part of their organisational requirements¹⁷. Member States do however have the option under Recital 46 of MiFID to extend transparency requirements to financial instruments other than shares.

The main EU Regulated Markets providing agricultural commodity futures and/ or options on various underlying are Euronext (UK, France), Risk Management Exchange Hanover (RMX) in Germany and MFAO (olive oil) in Spain. MTFs specialized in agricultural commodities derivatives are not known.

MiFID also provides an extensive framework governing the establishment (licensing), organisation and operation of **investment firms**¹⁸.

MiFID **exempts** from its scope firms dealing on their own account or providing investment services in commodity derivatives provided this is an ancillary activity to their main business¹⁹. Specialist commodity derivative firms may also be exempted from the scope of MiFID provided they are not subsidiaries of financial groups²⁰. These exemptions are primarily intended to apply to commercial users and producers of commodities.

Article 25 of MiFID requires investment firms to report all transactions in any financial instruments admitted to trading on a RM to the competent authority. This reporting obligation captures commodity derivatives if they are admitted to trading on a RM.

¹⁵ "Multilateral Trading facility means a multilateral system, operated by an investment firm or a market operator, which brings together multiple third-buying and selling interests in financial instruments – in the system and in accordance with non-discretionary rules – in a way that results in a contract in accordance with the provisions of Title II." – MiFID Article 4(1)(15)

¹⁶ MiFID Articles 36 and 39

¹⁷ MiFID Article 39(d)

¹⁸ MiFID Article 4(1)(1): "Investment firm means any legal person whose regular occupation or business is the provision of one or more investment services to third parties and/or the performance of one or more investment activities on a professional basis".

¹⁹ MiFID Article 2(1)(i)

²⁰ MiFID Article 2(1)(k)

MiFID lays out a conduct of business obligations on **investment firms** when providing investment services to **clients**. This includes criteria for client categorisation (retail, professional and eligible counterparties) and rules for client reporting. The level of protection offered to the clients will depend on their sophistication.

When dealing with commodity derivative markets it is important to mention the importance of the activity in the **OTC** market. OTC transactions between entities which are not regulated by MiFID, e.g. food companies benefiting from the exemptions in Articles 2(1)(i) and (k) of MiFID are not within the scope of MiFID. Transactions where one of the counterparties is an investment firm or exchange will be covered.

4.1.2. *United States*

Commodity derivatives markets in the United States are regulated primarily under the Commodity Exchange Act (CEA). The CEA was significantly revised in 2000 by the Commodity Futures Modernization Act (CFMA). These acts are administered by the Commodity Futures Trading Commission (CFTC).

The CFMA established a tiered-approach of regulatory oversight of commodity derivatives markets. Different types of markets are subject to varying degrees of regulatory oversight based on: (1) the sophistication of the markets participants; (2) the nature of the commodity (how susceptible to manipulation); (3) whether the market is intermediated; and (4) the trading mechanism (e.g. individually negotiated transactions vs. bids and offers open to multiple counterparties).

The CEA defines the following three types of **commodities**:

- "Excluded" commodities (financial products, including financial instruments, currencies, security products and economic indices)
- "Exempt" commodities (all underlying not covered by (1) and (3), primarily metals and energy products)
- "Agricultural" commodities

Unlike the MiFID, the US definition of commodity derivatives also comprises interest rate, equity and foreign exchange derivatives. But it does not cover forward contracts (any sale or any cash commodity for deferred shipment or delivery), while MiFID captures forward contracts when they are standardised or cleared and settled through recognised clearing houses or are subject to the provision of margin. Like MiFID the CEA does not cover spot or cash transactions.

For **trading facilities** the CEA distinguishes between three different tiers of regulation:

- Designated contract markets (DCMs)
- Derivatives transaction execution facilities (DTEFs): only open to a limited range of participants; and
- Exempt markets.

Traditional futures exchanges, described in the CEA as DCMs, are subject to the most comprehensive regulation, including authorization (registration). DCMs can allow access to all types of market participants, including retail customers; they can permit intermediation. All agricultural commodity futures and options on commodity futures are required by the CEA to be traded through a regulated exchange (DCMs or

DTEFs if granted a specific product authorisation). The exchanges providing agricultural commodity futures and/ or options are all designated as DCMs: the Chicago Mercantile Exchange (CME), the Chicago Board of Trade (CBOT)²¹, ICE Futures U.S.²², the Kansas City Board of Trade (KCBT), and the Minneapolis Grain Exchange (MGE).

They are currently no DTEFs registered with the CFTC.

Exempt markets are not allowed to list for trading futures or options on agricultural commodities²³.

The CFTC operates a system of collecting information on market participants as part of its market surveillance program. The Commission collects market data and position information on a daily basis from exchanges and various market participants. Aggregate data of reported positions by categories of traders are published by the CFTC in its weekly Commitments of Traders reports (COT reports). Please refer to paragraph 3.1. for a detailed description of the categories of traders.

To protect futures markets from excessive speculation that can cause unreasonable or unwarranted price fluctuations, the CEA authorizes the CFTC to impose limits on the size of speculative positions in futures markets. The CFTC has established strict position limits for agricultural contracts, while it has delegated this authority to exchanges for energy contracts. At present, **OTC** contracts do not fall under the jurisdiction of the CFTC, even though anti-fraud and anti-manipulation might apply in some cases. This means that for the OTC contracts speculative limits are not in place and market transparency is limited.

4.2. Review of recent policy initiatives

4.2.1. European Union

As indicated in the Communication on food prices, the results of the "on-going in-depth review of the supervisory and regulatory framework" should be taken into account, as appropriate. Some of the regulatory issues identified for food prices can be addressed in the proposals put forward in this framework:

- Communication "**European financial supervision**" (27 May 2009, 5): The Commission proposed to create a new European framework, including a European Systemic Risk Council for macro-prudential supervision and a European System of Financial Supervisors for micro-prudential supervision.
- Proposal for a Directive on Alternative Investment Fund Managers (29 April 2009, 6). The proposed Directive covers managers of all types of alternative

²¹ On 12 July 2007, the CME Group acquired the Chicago Board of Trade (CBOT) which ceased to exist as an independent entity.

²² ICE Futures US (ICE US) (formerly known as the New York Board of Trade (NYBOT)) became a wholly-owned subsidiary of ICE on January 12, 2007. ICE is a for-profit, publicly traded company that also owns ICE Futures Europe. ICE US offers soft commodity futures and options exchange trading, with markets for sugar, cotton, coffee, cocoa and orange juice.

²³ "Exempt commercial markets" (ECMs) may list for trading only exempt commodities. "Exempts boards of Trade" (EBOTs) may list for trading only futures or options for which the underlying commodity has: (1) a nearly inexhaustible deliverable supply; (2) a deliverable supply so large and a cash market so liquid as to be highly unlikely to be susceptible to manipulation; or (3) no cash market (e.g. weather indices).

investment fund (AIF), including **hedge funds**, private equity, **commodity funds**, real estate funds, infrastructure funds and other institutional funds. It seeks to strengthen the surveillance at European level of macro-prudential risks and establishes a harmonised and secured regulatory framework.

- Communication, report and consultation on **derivatives** (3 July 2009, 4). The documents focus on Over-The-Counter (OTC) derivatives. The latter are generally divided into five segments, in decreasing order of notional amount: interest rates, foreign exchange, credit, equities and commodities. The most urgent risks relating to Credit Default Swaps are currently addressed. The Commission will consider further measures to move ahead with increased standardisation and transparency of transactions, to ensure that moving to Central Counterparty (CCP) clearing becomes the norm for OTC and to channel further trade flows through transparent trading venues, wherever possible. Taking into account the outcome of the consultation, the Commission drew operational conclusions and outlined "future policy actions" in a new Communication (October 2009), in order to come forward with ambitious legislation to regulate derivatives in 2010.

4.2.2. *United States*

As in the EU, some of the issues related to agricultural commodity derivatives bear a linkage with the wider financial framework. In this respect, it is relevant to mention the **White paper of the US Treasury** "Financial Regulatory Reform: A New Foundation Rebuilding financial supervision and regulation" (17 June 2009, 14) and the related legislative proposal improving the regulation of OTC derivatives (August 2009)²⁴. The US proposes reforms to meet five key objectives: establish comprehensive supervision of both financial firms and markets, protect from financial abuse, provide governments with the tools to manage financial crises, raise international regulatory standards and improve international cooperation. As regards financial markets, the draft proposals include "requirements for all standardised OTC derivative transactions to be executed in regulated and transparent venues and cleared through regulated central counterparties (CCP)".

In addition, four **draft bills** aimed at addressing excessive speculation in energy and food **commodities** have been discussed in the Congress. They include provisions on speculative position limits, trading limits, index traders and swap dealers, OTC, requirements for foreign boards of trade in case of linkage with US persons/exchanges.

Proposals included in these draft bills that are relevant for food prices can be summarised as follows:

- CFTC "no action relief" grants a **Foreign Board of Trade** (FBOT) the right to offer access to its services to US persons, based on it being subject to a comparable regulatory regime. Some of these FBOT's offers markets in contracts that cash settle against those listed on a US exchange. Two bills would require that a FBOT providing direct electronic access to its markets to U.S. persons trading in energy and agricultural contracts priced against a contract traded on a

²⁴ On 11 August 2009, the US Treasury Department released the "Over-the-Counter Derivatives Markets Act of 2009", legislation that would subject the OTC derivatives markets, OTC derivatives dealers, derivatives clearing organizations and agencies (i.e. central counterparties), swap repositories (i.e. central data repositories) and major non-dealer participants to comprehensive regulation.

U.S. exchange make public daily trading information comparable to that published by the U.S. exchange on which the related contract is traded. One of them also requires these FBOTs to adopt position limits for contracts in agricultural and energy commodities, to have the authority to require market participants to liquidate or reduce positions if necessary to protect against manipulation, and to notify the CFTC regarding position limits, position reductions, or any other area of interest to the CFTC.

- Another proposal of these bills is to define and classify separately **index traders** and **swap dealers** for data reporting purposes. They would require the CFTC to disaggregate certain index funds, and publish weekly the number of positions and total value of index funds in all energy and agricultural markets, as well as data regarding speculative positions relative to hedge positions.
- In addition one bill would strengthen conditions for granting of **hedge exemptions** in order to limit them to bona fide hedgers (largely commercial users of the underlying commodity). If the bill is approved it will be very difficult in the future for swap dealers to qualify for a hedge exemption.

4.3. Other initiatives (regulatory authorities, exchanges)

- The **US CFTC** announced various measures to improve market transparency: it released new reports on traders' activity (in particular: new disaggregation of traders, index investment data). The CFTC is also reviewing the exemptions from position limits for “bona fide hedging”.
- **US**: The **CME** introduced changes in its wheat contract to address the lack of convergence between spot and future prices. It is too early to say whether such changes have brought any benefits. There are still problems with convergence and the debate on causes and solutions goes on in the US. The CFTC set up a special committee to examine the lack of convergence. This issue is also debated in the US Congress.
- **EU-US**: Various clearing houses already offer the possibility to **clear OTC** trades in commodity derivatives, especially in the field of energy contracts. Some of them have recently extended their range of commodity products to offer clearing services in agricultural products, on a voluntary basis (changes already implemented by the CME, ICE, Euronext London – to be extended to Paris).
- **EU-US**: Following discussions between the UK FSA and the US CFTC about the “London loophole”, InterContinental Exchange (ICE) Futures Europe agreed to apply similar requirements as in the US for its oil contracts that bear a linkage with US regulated exchange (trading information, position limits, categories of traders).

5. POLICY CONCLUSIONS AND RECOMMENDATIONS

Some of the **regulatory issues** identified in follow up of the speculation part of the Communication on food price are already addressed in proposals put forward by the Commission and the US Treasury to strengthen financial **supervision** and **transparency** (see under 4.2)

Some issues are more specific to agricultural commodities and deserve additional consideration. For the good functioning of the food chain, it is important that commodity derivatives keep serving their initial purpose of price discovery and

hedging, as tools to cope with price volatility. The oversight and the overall transparency of agricultural commodity derivatives markets should be improved. Most of these issues could be addressed in the overall approach of the Commission on **derivatives** and in the upcoming **review** of the Markets in Financial Instruments Directive (**MiFID**).

(1) Transparency

- (a) The **transparency regime** included in MiFID does not currently cover derivatives and **transaction reporting** does not apply to financial instruments (including commodity derivatives) that are not admitted to trading on a regulated market. Appropriate trade transparency and transaction reporting requirements should be extended to cover all agricultural commodity derivatives, including those traded over-the-counter. Such a step could be considered in the overall approach of the Commission on OTC derivatives and in the framework of the MiFID review.
- (b) The next recommended step would be the introduction of **position reporting obligations by categories of traders**. Unlike the US, there is no position reporting obligation for commodity derivatives in the EU. In the absence of position reporting obligations and harmonised definition of traders, a full account of activities of different types of traders is not systematically available for EU commodity exchanges. It is recommended that a position reporting obligation by categories of traders is introduced and that aggregate positions by category of traders become publicly available. Definitions of traders would need to be developed at EU level. The Commission should examine whether it would be appropriate to introduce a similar disaggregation as in the US: commercials (producers/merchants/processors/users), OTC dealers, managed funds, other non-commercials. The requirement to collect the necessary information could be shared by infrastructures and investment firms. This is a matter of transparency but also the first step needed to enable regulators to assess the role of excessive concentration of speculative positions and the role of non-commercial market participants in these financial markets.

(6) **Supervision**

- (a) The MiFID review will also conclude the work on **exemptions** of certain commercial firms dealing in commodity derivatives. Such firms may be exempt from any MiFID provisions including authorisation, operational requirements, **reporting** and conduct of business rules. Findings from consultations²⁵ as well as recent developments will be taken into account when reaching conclusions.
- (b) Currently, in the EU, several matters are left to the exchanges (rather than to regulatory authorities). This is the case of the implementation

²⁵

See for example, advice of the Committee of European Banking Supervisors and Committee of European Securities Regulators (<http://www.cesr.eu/index.php?docid=5306>) and the European Securities Markets Expert Group (http://ec.europa.eu/internal_market/securities/docs/esme/commodity_derivatives_en.pdf)

of **speculative position limits**. The possibility of enabling regulators to set position limits to counter disproportionate price movements or concentrations of speculative positions²⁶ will be carefully assessed with a view to ensuring the efficient functioning of those markets.

(7) **Over-The-Counter activity:** although agricultural commodities account for a small share of OTC derivatives, there are concerns about the growing importance and complexity of OTC activity around agricultural commodities. Hence, in line with the July and October 2009 Communications on derivatives, measures for enhancing **transparency for OTC** are recommended. In particular imposing reporting requirements for OTC agricultural derivatives as mentioned under point (1) would contribute to enhance transparency.

(8) **Linkages**

(a) **between regulated futures and related commodity markets:** Among the recommendations made by a Task Force set up by the International Organisation of Securities Commissions (Appendix), one concerns improving the availability of information on cash commodity markets related to futures markets. Although the recommendations are not commodity-specific, the principal concern beyond them is the energy market. By contrast, information on agricultural commodity markets is widely available, including publicly.

(b) **amongst different exchanges:** To summarise, US exchanges for agricultural commodities seem more regulated than EU ones. Concerns are voiced about the risk of regulatory arbitrage. One of the 5 objectives of the US Treasury reform is raising international regulatory standards. The draft US bills discussed in the Congress include requirements for foreign boards of trade in case of linkage with US persons/exchanges. The Commission will keep following developments in the US relating to the regulatory issues identified in this paper.

²⁶ Speculative position limits are limits on how many open derivatives contracts specific categories of traders could hold.

GLOSSARY

Extract of the Commission Staff Working Paper {SEC(2009) 905 final} accompanying the Communication "Ensuring efficient, safe and sound derivatives markets"{COM(2009) 332 final}

Derivatives are financial instruments whose value is derived from the value of an underlying asset or market variable. The main types of derivatives are: forwards, futures, options and swaps. Derivative contracts can either be traded in a public venue, i.e. a derivatives **exchange**, or privately **over-the-counter (OTC)**, i.e. off-exchange.

A **forward** is a contract whereby two parties agree to exchange the underlying asset at a predetermined point in time in the future at fixed price. Therefore, the buyer agrees today to buy a certain asset in the future and the seller agrees to deliver that asset at that point in time.

Futures are standardised forwards traded on-exchange.

An **option** is a contract that gives the buyer the right, but not the obligation, to buy (call) or sell (put) the underlying asset at or within a certain point in time in the futures at a predetermined price (strike price) against the payment of a premium, which represent the maximum loss for the buyer of an option. Therefore, differently from forwards and futures, options settle only if exercised and will be exercised only if in-the-money, i.e. if the strike price is lower/higher than the current market price for a call/put.

Under a **swap** agreement two counterparties agree to exchange one stream of cash flow against another on a notional principal amount.

Derivative contracts can either be traded in a public venue, i.e. a derivatives **exchange**, or privately **over-the-counter (OTC)**, i.e. off-exchange.

Clearing: The process of establishing settlement positions (including the calculation of net positions) and the process of checking that securities, cash or both are available. In other words it is the process used for managing the risk of open positions. On-exchange, clearing is done on a Central Counter-party (CCP). OTC, clearing is mostly done bilaterally between the parties involved but increasingly on a CCP.

Central Counterparty (CCP): An entity that interposes itself between the counterparties to the contracts traded in one or more financial markets, becoming the buyer to every seller and the seller to every buyer.

Notional amount: the reference amount on which a derivative contract is written.

Position: The stance an investor takes vis-à-vis the market. An investor's position is said to be long (short) when he/she buys (sells) a financial instrument.

Further definitions (based on the US CFTC)

Speculative position limits: in the US, this is defined as the maximum number of contracts that a trader (not covered by a hedging exemption) can hold in each commodity contract for futures and options. Similar limits are implemented in the Paris-based contracts for agricultural futures.

Transparency: is related to reporting on positions, prices and transactions. Reports available on futures markets indicate prices as well as the number of contracts traded.

Traders: US legislation distinguishes commercial and non-commercial traders. To summarise, the commercial category includes commodity traders hedging their price risk, while non-commercials are considered as "speculators" providing liquidity on futures markets. Commodity exchanges in the EU do not, as a rule, carry out a classification of traders' positions similar to the US ones.

Producer/Merchant/Processor/User: A "producer/merchant/processor/user" is an entity that predominantly engages in the production, processing, packing or handling of a physical commodity and uses the futures markets to manage or hedge risks associated with those activities.

Swap Dealer: A "swap dealer" is an entity that deals primarily in swaps for a commodity and uses the futures markets to manage or hedge the risk associated with those swaps transactions. The swap dealer's counterparties may be speculative traders, like hedge funds, or traditional commercial clients that are managing risk arising from their dealings in the physical commodity.

Money Manager: A "money manager," for the purpose of this report, is a registered commodity trading advisor (CTA); a registered commodity pool operator (CPO); or an unregistered fund identified by CFTC.⁷ These traders are engaged in managing and conducting organized futures trading on behalf of clients.

Other Reportables: Every other reportable trader that is not placed into one of the other three categories is placed into the "other reportables" category.

Annex I – Other international initiatives

In their September 2009 statement, the **G-20** Leaders "have agreed to improve the regulation, functioning, and transparency of financial and commodity markets to address excessive commodity price volatility".

The **G-8** Ministers for Agriculture, meeting in Italy in April 2009 agreed on a declaration entitled "agriculture and food security at the core of the international agenda". The declaration included a recommendation on volatility and speculation: "there should be monitoring and further analysis of factors potentially affecting price volatility in commodity markets, including speculation". This recommendation was endorsed by the Heads of State and Government in their July 2009 G-8 meeting. Their joint statement on global food security included a similar reference to volatility and speculation.

The International Organisation of Securities Commissions (**IOSCO**) formed a Task Force on Commodity Futures Markets in October 2008 following price volatility in certain commodities and the related concerns. In a report (15) released in March 2009, the Task Force made the following recommendations:

- "Recent reports (...) reviewed by the Task Force strongly suggest that economic fundamentals, rather than speculative activity, are a plausible explanation for recent price changes in commodities. Given the importance of this issue, and the complexity of the issues raised, continued monitoring is appropriate.
- The Task Force, however, has identified factors that potentially inhibit the ability of futures market regulators to access relevant information concerning the related commodity markets²⁷, over which futures market regulators generally do not have authority, that may be needed to understand fully price formation in a particular futures market contract or to detect manipulative or other abusive trading by market participants holding large positions in those commodity contracts. (...)
- The Task Force recommends that national financial regulators review powers and, if necessary, take appropriate steps to eliminate factors, including legal authority, that inhibit their ability to gather appropriate information required to detect and enforce manipulation cases.
- Finally, in order to enhance the dissemination of surveillance and enforcement techniques, the Task Force recommends that regulators of commodity futures markets meet regularly for the purpose of informal sharing of contemporary market surveillance and enforcement techniques and concerns."

The report also included recommendations to improve the quality and the timeliness of OTC derivatives transparency (OTC are also considered as "related commodity markets"). The report does not specify whether the recommendations apply to all commodities or to some commodities more than others (See under 2.3 for questions and answers on that report).

²⁷

The term "related commodity market" refers broadly to the cash, or physical, commodity that underlies the futures contract, as well as positions in privately negotiated transactions involving the same commodity that are not traded on a regulated exchange (e.g., forward contracts, swaps, options and other structured products). Correspondingly the term "underlying" commodity market refers solely to the physical market.

Annex II - Quoted references

European Commission (EC)

- (1) Commission Communication on "food prices in Europe" {COM(2008) 181 final}
- (9) Commission Staff Working Paper {SEC(2008) 2971 final} "is there a speculative bubble in commodity markets", accompanying Communication
- (10) Note on Historical Price Volatility, July 2009, available on the internet site of the Directorate General for Agriculture and Rural development. http://ec.europa.eu/agriculture/analysis/tradepol/commodityprices/volatility_en.pdf
- (11) Communications "Ensuring efficient, safe and sound derivatives markets" {COM(2009) 332 final and follow-up} and related Commission Staff Working Paper {SEC(2009) 905 final}+ consultation document.
- (12) Communication "European financial supervision"
- (13) Proposal for a Directive on Alternative Investment Fund Managers

United States

- (14) Various testimonies in the framework of Congressional hearings (especially on excessive speculation, convergence)
- (15) CFTC staff report on "commodity swap dealers and index traders, with Commission recommendations" (September 2008)
- (16) CME/Informa: an evaluation of the influence of large reporting traders on futures market performance (February 2009).
- (17) U.S. Senate permanent sub-committee on investigations, "excessive speculation in the wheat market" (June 2009)
- (18) Irwin and al.: "The Performance of the CBOT Corn, Soybean, and Wheat Futures Contracts After Recent Changes in Speculative Limits" (2007); "The Adequacy of Speculation in Agricultural Futures Markets: Too Much of a Good Thing?" (2008); "Poor Convergence Performance of CBOT Corn, Soybean and Wheat Futures Contracts: Causes and Solutions." (2009) Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign.
- (19) US Department for Agriculture: "Issues and Prospects in Corn, Soybeans, and Wheat Futures Markets" (August 2009).
- (20) Testimony of Chairman Gary Gensler CFTC before the U.S. Senate permanent sub-committee on investigations (July 2008)
- (21) US Treasury White Paper on "Financial Regulatory Reform: A New Foundation- Rebuilding financial supervision and regulation" (June 2009) and related legislative proposal "OTC Derivatives Markets Act of 2009" (August 2009)

International

- (22) IOSCO, report of the task force on Commodity Futures Markets (March 2009)