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Re-regulation of commodity derivative markets: Critical assessment of current reform proposals in the EU and the US

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WORKING PAPER 45

Re-regulation of commodity derivative markets – Critical assessment of current reform proposals in the EU and the US

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ÖFSE – Austrian Research Foundation for International Development

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List of abbreviations

CBOT	Chicago Board of Trade
CCPs	Central Counterparties
CEA	Commodity Exchange Act
CFTC	Commodity Futures Trading Commission
CTAs	commodity trading advisors
EC	European Commission
ECOFIN	Council of Ministers (the Council of Economic and Finance Ministers)
ECON	Committee on Economic and Monetary Affairs
EMIR	European Market Infrastructure Regulation
EP	European Parliament
ESAs	European Supervisory Authorities
ESMA	European Securities and Markets Authority
ETPs	exchange traded products
EU	European Union
FSB	Financial Stability Board
FTT	financial transaction tax
G20	Group of 20
HFT	High Frequency Trading
IOSCO	International Organization of Securities Commissions
MAD	Market Abuse Directive
MAR	Market Abuse Regulation
MiFID	Markets in Financial Instruments Directive
MiFIR	Markets for Financial Instruments Regulation
MTFs	Multilateral Trading Facilities
OTC	Over the Counter
OTFs	Organized Trading Facilities
SEC	Securities and Exchange Commission
SSA	Sub-Saharan Africa
UN	United Nations

Abstract

In the context of recent commodity price hikes, a political consensus has emerged on regulatory measures to reduce excessive speculation in commodity derivative markets. This paper gives an overview of current reform proposals of commodity derivative market regulation at the international (G20), US and EU level and assesses their scope and limitations. For such an assessment, the primary functions of commodity derivative markets for the real economy, i.e. price discovery and price risk hedging for commercial traders have to be taken as a benchmark. The paper concludes that important regulatory initiatives have been under way with a focus on improving transparency, regulating over the counter trade, installing position limits and strengthening regulatory authorities. However, there are important limitations, in particular in the form of broad exemptions (e.g. concerning position limits and commercial traders). Regulations that would more substantially reduce the dominance of financial investors and ensure the dominance of fundamentally based trading strategies have only marginally been addressed, such as restrictions on certain trading strategies (e.g. index-based investments, technical/algorithmic trading, high frequency trading) and price stabilization mechanisms such as a multitier financial transaction tax. A prerequisite for effective regulation is a pro-active, flexible and dynamic approach that reflects on the risks of failure and adapts regulations if necessary given the changing dynamics and complexities of markets. Further, effective regulation has to take into account the multiple and interrelated roles of financial and large commercial traders being increasingly involved in speculative derivative and physical commodity trading.

1. Introduction

Commodity prices have crucial implications, in particular for developing countries that are often dependent on the import of basic commodities such as food and fuel. Hence, commodity prices have direct effects on food and energy security, socio-economic development and poverty. This has been most dramatically reflected in the recent food crises. After the price hike in 2007/08, where prices of key staples such as wheat, rice, corn and soybeans doubled, the total number of undernourished people topped 1 billion for the first time in mid-2009, a dramatic setback for the United Nations (UN) goal of reducing the number of undernourished people to 420 million by 2015 (FAO 2009). Many developing countries, particularly in Sub-Saharan Africa (SSA) are also dependent on the production and export of few commodities. These countries benefit from rising revenues when commodity prices are high. But they are also affected by increased price volatility, which leads to major difficulties in managing their economies (UNCTAD 2012).

An understanding of commodity prices and their determinants are therefore crucial for economic and social development, poverty reduction and stability. There are several factors influencing commodity price dynamics, including fundamental demand and supply side factors and macroeconomic developments. However, in the last years fundamentals did not seem to explain the severity of price movements, particularly after 2007. Hence, more attention has been given to the role of financial investors such as banks, institutional investors and hedge funds that have increased in importance on commodity derivative markets¹, a phenomenon which has been labeled as financialisation of commodity markets (Domanski/Heath 2007). Funds from financial investors in commodity futures markets have increased from US\$13 billion in 2003 to US\$430 billion in January 2013 (Barclays Capital

¹ Commodities are traded on commodity spot markets where physical commodities with immediate delivery are traded by actual producers and consumers and derivative markets where derivative contracts that give holders the right ("options") or the obligation ("futures") to trade a physical commodity in the future at a given price are traded. Commodity derivatives can be traded on regulated exchanges (also called futures markets) or unregulated over the counter (OTC). Usually, traders on derivative markets do not physically receive commodities when the derivative contracts are due. The profit or loss of the traders (apart from the fees) arises from the price difference when the contract is made and the market price when the derivatives are due (for a discussion on commodity derivative markets, their roles and recent changes, see Staritz 2012).

2013). In the 18 most important commodity futures markets, non-commercial traders or speculators² had on average a share of 23 % of total open positions in 1998 which increased to 69 % in 2008 (Masters/White 2008).

There is no consensus on the importance of these different factors in commodity price formation. In particular the question if financialisation has substantially influenced commodity prices is highly disputed. Quantitative and qualitative interview-based research at ÖFSE (see Ederer et al. 2013; Heumesser/Staritz 2013) has mostly supported the financialisation hypothesis that states that the increasing role of financial investors in commodity derivative markets has, in addition to fundamental and macroeconomic factors, had important effects on commodity prices and market structure. This research also questions to which extent commodity derivative markets still fulfill their economic roles of price discovery and hedging price risks for commercial traders.³ This view gained momentum after the important commodity price hikes in 2007/08 and 2011/12 and a political consensus seemed to emerge within the Group of 20 (G20)⁴, the US, the EU and other countries⁵ on regulatory measures to reduce excessive speculation, stabilize commodity prices, and ensure the efficient functioning of commodity derivative markets.

This paper gives an overview of current reform proposals of commodity derivative market regulation and assesses their scope and limitations. Section 2 gives an overview of recent discussions and regulations at the US and the EU level that still host the majority of commodity derivative trading. These regulations have to be seen in the context of international reform discussions, most importantly at the G20 that are also briefly outlined in section 2. Section 3 shortly discusses the main fundamental functions of commodity derivative markets and to what extent the deregulation and related financialisation of these markets has made them contentious referring to recent ÖFSE research. This discussion is taken as a basis to assess the scope and limitations of recent reforms at the US and EU level and compares them along selected reform areas. Further, it discusses which further reforms would be required. The last section concludes.

² Traditional actors on commodity derivative markets are commercial traders – the actual producers and consumers of physical commodities that buy or sell on spot markets and try to reduce the price risks they face from the underlying spot transactions through hedging on derivative markets – and non-commercial traders, referred to as speculators. Non-commercial do not have an underlying physical commodity position to hedge but take over the price exposure from hedgers in exchange for a risk premium and are hoping to profit from changes in futures prices. In the context of deregulation of commodity derivative trading and the search for new investment opportunities in the context of the dot-com crisis in 2000/01 and the global financial crisis in 2008/09, a third category of actors has become important – financial investors, in particular banks, institutional investors and hedge funds that invest in commodities as an asset class (Gilbert 2008; UNCTAD 2009). Financial investors are typically classified in index investors and money managers. Index investors are largely institutional investors such as pension funds that pursue longer-term and passive investment strategies betting on increasing prices, using commodity indices. Money managers, such as hedge funds, commodity trading advisors (CTAs), proprietary trading desks of banks or investment firms, and institutional investors, pursue shorter-term, more active and long and short trading strategies betting on increasing and declining prices.

³ Commodity derivative markets provide two important functions for commercial traders: First, the price discovery function as trading on futures markets enables the open-market discovery of prices of commodities that are used as a benchmark for spot transactions. Second, commodity futures markets offer an insurance function as those markets enable spot market participants to hedge against the risk of price fluctuations. For instance, a producer of wheat can sell futures contracts against the amount of the expected harvest which secures a certain price for wheat while a consumer of wheat can buy futures contracts to secure input costs.

⁴ The G20 is an informal forum for advancing international economic cooperation among 20 major developed and emerging countries. The G20 was originally established in 1999 to facilitate discussions among G20 finance ministers. Its prominence increased in the context of the global financial crisis. In its current form, the G20 meets annually at the leader level, while finance ministers and central bank governors meet in spring and fall. Several G20 groups work on commodity derivative markets, including the G20 finance ministers dealing with the core regulation issues, the G20 agriculture ministers focusing on food price volatility, the G20 development working group, and the G20 working group on energy (Jackson/Miller 2013).

⁵ For example, at a BRICS meeting in April 2011, Brazil, Russia, India, China and South Africa called for stronger regulation of commodity derivatives to dampen excessive volatility in food and energy prices (SOMO 2011).

2. Regulation and deregulation of commodity derivative markets

2.1. Reform discussions and commitments at the G20

The G20 is currently the most active place for discussions on the regulation of commodity derivative markets at the international level, also given that the G20 countries together host nearly all of the major global commodity futures markets (with the US, Europe, India, China, Brazil and South Africa being the largest) (Clapp/Martin 2011). This is problematic as the G20 is not representative and in particular many developing countries that are strongly impacted by commodity prices are not included. A more representative intergovernmental organization such as the UN would be more adequate for international regulatory discussions.

As reflected in the agendas of the last G20 meetings, a relatively broad consensus has developed to curb “excessive speculation”⁶ on commodity derivative markets, in particular related to agriculture commodities. Despite important momentum, G20 discussions and proposals have however shifted away from broader economic policy reforms to address commodity price volatility toward a narrow focus on market transparency (Clapp 2012a, 2012b). This approach was made clear with the G20’s “Action Plan on Food Price Volatility and Agriculture” adopted by the group’s agricultural ministers in June 2011 where important policy issues, including speculation, were only marginally addressed (Clapp 2012a). Regarding financial speculation, the G20 merely recognized the need for “appropriately regulated and transparent agriculture financial markets” (G20 2011: para 52).

Despite limitations in the G20’s general approach, some commitments were still agreed concerning commodity derivative market regulation. As the G20 has no enforcement capacities, it generally agrees on commitments that need to be implemented through legislation by member countries (or that member countries have already or are planning to implement given the compromise nature of commitments). Three policy objectives have been at the center of commodity derivative market reform since the first G20 summit in Washington D.C. in November 2008 – (i) improving transparency, (ii) mitigating risk related to over the counter (OTC) trading, and (iii) protecting against market abuse (Jackson/Miller 2013). The following results at the subsequent G20 meetings are noteworthy (G20 2009, 2010, 2011, 2012; Jackson/Miller 2013; Clapp 2012a, 2012b; Henn 2012a; SOMO/WEED 2011):

- At the Pittsburgh summit in September 2009, important commitments were agreed on stronger regulation of the largely unregulated OTC trade.⁷ It was agreed that “all standardized OTC derivative contracts should be traded on exchanges or electronic trading platforms, where appropriate, and cleared through central counterparties (CCPs)⁸ by end 2012 at the latest” and that “OTC derivative contracts should be reported to trade repositories and non-centrally cleared contracts should be subject to higher capital requirements” (G20 2009).⁹ Clearing means that transactions take place

⁶ Speculation is necessary for the functioning of commodity derivative markets and the execution of hedging activities. However, an excessive or “inadequate” level of speculation, i.e. a level of speculation which exceeds the need to satisfy hedging transactions and may distort price dynamics may be problematic. However, it is difficult to quantify excessive speculation.

⁷ On commodity exchanges or futures markets contracts are standardized as the quantity, quality and maturity dates are spelled out, and exchanges coordinate trading and guarantee payment. The large majority of commodity derivatives are however traded OTC which means that they are traded bilaterally between two parties outside of exchanges. These transactions are neither regulated nor standardized and risky as there is no instance that guarantees payment (TheCityUK 2011).

⁸ A CCP acts as an intermediary between sellers and buyers of a contract, becoming the buyer to every seller and the seller to every buyer (ISDA 2012). After confirming that both orders match and possibly netting of transactions between the buyer and the seller, the CCP will determine the amount of collateral required to secure the trade (“margining”), in order to mitigate its counterparty risk (Pirrong 2011; Finance Watch 2012).

⁹ Capital requirements are usually computed quarterly and help reduce risk by lowering the risk of a dealer’s failure (BIS/IOSCO 2012).

through a third party, a CCP, that collects a collateral to secure the trade and hence reduces counterparty risk.

- In October 2010, the Financial Stability Board (FSB)¹⁰ published a report containing 21 recommendations to assist the G20 members in implementing these commitments, with a final update in October 2012. This report details country commitments in six specific areas: (i) standardization of OTC derivatives contracts; (ii) central clearing of OTC derivatives contracts; (iii) exchange or electronic platform trading; (iv) transparency and trading; (v) reporting to trade repositories; and (vi) application of central clearing requirements (Jackson/Miller 2013).
- The French President Sarkozy made the topic one of the six core priorities for the French G20 presidency. In February 2011, the G20 called for several studies on the effect of speculation with diverging results and recommendations. In particular, the G20 commissioned the International Organization of Securities Commissions (IOSCO)¹¹ to provide guidance on globally harmonized financial regulations (SOMO/WEED 2011).¹² The G20 endorsed the principles in the IOSCO report that market regulators should be granted effective intervention power to address disorderly markets and prevent market abuse, e.g. through the imposition of (ex-ante) position limits¹³ (G20 2009; Clapp 2012b). The G20 ministers also called for “enhanced transparency in both cash and derivatives markets” (SOMO 2011). At the summit in Cannes in November 2011, it was also agreed to add margin requirements (in addition to capital requirements) on non-centrally cleared derivatives to their commitments.¹⁴
- Also the Mexican G20 presidency took the topic on the agenda as in particular food security was made one of the five key priority areas. At the G20 summit in Los Cabos in June 2012, the “substantial progress” made in OTC derivative reforms was recognized and the commitments of the Pittsburgh summit concerning OTC trade were reiterated. The final declaration states that “jurisdictions should rapidly finalize their decision-making and put in place the needed legislation (...) to meet the G20 commitment for central clearing” and encourages “international standard setters to finalize the proposed global margin standards by the end of this year, to match the implementation deadline for other OTC derivatives reforms” (G20 2012).

The G20 commitments cover some important areas, in particular the regulation of OTC trade, increased transparency requirements, and the imposition of (more stringent) position limits. A main question is, however, to which extent member countries have implemented these commitments. The Financial Stability Board (FSB) monitors implementation of G20 commitments on OTC derivatives reform. In its sixth assessment in September 2013, it comes to the overall conclusion that progress to implement the commitments remains uneven (FSB 2013): “currently over half of FSB member jurisdictions have legislative frameworks in place to enable all reform commitments to be implemented, though the current

¹⁰ The FSB was created at the G20 London summit in April 2009 to improve financial regulation after the 2008 crisis as the successor to the Financial Stability Forum. Its mission is to internationally coordinate and monitor the work of national financial authorities and international standard-setting bodies, in the interest of financial stability. The FSB Secretariat is hosted by the Bank for International Settlements (BIS) in Basel (Jackson/Miller 2013).

¹¹ The IOSCO was created in 1983 to facilitate cooperation among securities regulators (Clapp/Helleiner 2012).

¹² The report of IOSCO recommends interventions such as position limits, limits on price movements, additional margins, suspending or curtailing trading through trading halts and circuit breakers. In contrast, the report by the Institute for International Finance (IIF), a large banks lobby group, denies the harmful effects of financial investments in commodity derivative markets. Reports were also asked from OPEC, the International Energy Agency, and UNCTAD (SOMO/WEED 2011; G20 2009).

¹³ Position limits define the maximum position, either total or net long or short, in one commodity futures (or options) contract, or in all futures (or options) contracts of one commodity combined, that may be held or controlled by one entity or one class of traders. They are meant to reduce the likelihood that a single entity or class of traders can obtain positions large enough to manipulate or dominate the market. Generally, they are only imposed on non-commercial traders with commercial traders with large merchandising needs getting hedging exemptions (Mayer 2009).

¹⁴ Margin requirements are usually paid daily based on positions hold and related price movements and help protect dealers and their counterparties in volatile markets or if either of them defaults (BIS/IOSCO 2012).

schedules for further changes in legislative and regulatory frameworks are uneven across jurisdictions and commitment areas. (...) Progress is most rapid in the implementation of requirements to report transactions to trade repositories (...); there has been less regulatory progress in jurisdictions' implementation of central clearing, trade execution and margin requirements" (FSB 2013, 1-2). Concerning the US and the EU, both have taken steps towards fulfilling the G20 commitments, in particular implementing legislation requiring central clearing, trading on exchanges or electronic trading platforms, reporting requirements, and margin rules for non-cleared derivative transactions. However, important parts of legislation have not yet been followed up with technical implementation rules and have, hence, not been implemented (see below).

2.2. Regulations and discussions in the United States

A large share of commodity derivative trading still takes place in the US which has a long history in commodity derivative markets. It hosts the most important agricultural futures markets, most notably the Chicago Mercantile Exchange (CME). The Commodity Futures Trading Commission (CFTC) is in charge of supervising and regulating commodity derivative markets in the US. Historically, US agriculture futures markets were tightly regulated. Since the Grain Futures Act of 1922, futures trading could only take place on approved exchanges which were required to outlaw manipulation or cornering of the market and since 1923 large traders had to report their market positions on a daily basis (Clapp/Helleiner 2012). The Banking Act of 1933 (the so-called "Glass-Steagall Act") required banks to shut down or spin off their brokerage and investment operations, and therefore separated retail banking from investment banking, which also prevented retail banks from engaging in commodity derivative trading (Uchitelle 2010). The Commodity Exchange Act (CEA) of 1936 empowered the CFTC to establish position limits on all non-commercial traders to prevent market manipulation and distortions as well as excessive speculation that causes "sudden or unreasonable fluctuations or unwarranted changes" (CFTC n.d. b) in commodity prices¹⁵ (Masters/White 2008; Clapp/Helleiner 2012).

These position limits were, however, gradually raised, circumvented or eliminated. The first important deregulatory initiative was related to banks that sold OTC swaps¹⁶ to clients who were seeking exposure to commodity price movements and "hedged" their financial exposure on futures markets. In 1991, the CFTC started to give exemptions from position limits to such swap dealers (in response to an initial request from Goldman Sachs) for the purpose of "hedging" their OTC swaps. This created the "swap dealer loophole" giving swap dealers (i.e. largely large banks) that "hedge" their financial positions virtually the same unlimited access to futures markets as physical hedgers. This also meant that speculators could circumvent position limits by entering swaps with banks that could then "hedge" their exposure on futures markets. For such purposes single commodity index swaps were created. In 1998, the CFTC codified the practice of allowing commodity exchanges in large and liquid commodities futures markets to replace position limits with position accountability limits. Those limits imply that after passing a certain threshold, the exchange is supposed to watch the speculator's position with greater detail to prevent manipulation (Masters/White 2008; Clapp/Helleiner 2012).

In 1999, the abolition of the Glass-Steagall Act allowed retail banks to pursue investment operations, including commodity derivatives market investments which increased the involvement of banks on commodity derivative markets. Initiatives to extend CFTC's regulation from futures markets to OTC derivatives markets were resisted by the financial

¹⁵ While position limits for agricultural commodities were prescribed in 1936, they were extended to all commodity futures in 1981 (Masters/White 2008).

¹⁶ A commodity swap involves an exchange of cash flows with the return for the client that wishes to get exposed to commodity prices dependent on the price of an underlying commodity or commodity index. The use of commodity swaps is strongly linked to investments in products like commodity index funds that have become prominent in the early 2000s.

sector and free market-oriented policy makers. Importantly for the deregulation of commodity derivative trading was the Commodity Futures Modernization Act (CFMA) in 2000 that was strongly pushed by the finance lobby, led by powerful organizations like the International Swaps and Derivatives Association (ISDA), and even explicitly prevented the CFTC from regulating OTC markets. In 2005, position limits were further raised which made the participation of pension and other investment funds on a large scale possible. One consequence of these regulatory exemptions was the increased dominance of large players on futures markets – for instance in 2009 just six traders – all swap dealers – held 60 % of the long open interest positions in wheat futures contracts traded at the Chicago Board of Trade (CBOT) (Clapp/Helleiner 2012).

In the context of the financial crisis of 2008 and large commodity price fluctuations, there was significant momentum to tighten financial market regulation and policy makers and the CFTC started to reverse some of the deregulatory initiatives of the pre-crisis era. In June 2008, the CFTC announced to withdraw proposals to increase position limits, and in August 2009 it revoked – for the first time – two exemptions for position limits related to soybeans, corn and wheat that it had conceded to Deutsche Bank and Gresham in 2006 (Clapp/Helleiner 2012). In July 2010, the most important initiative, the “Dodd-Frank Wall Street Reform and Consumer Protection Act” was approved by the US Congress after a long and hard-fought process. The Act consists of sixteen sections (“titles”) setting up new regulatory bodies and restricting the actions of banks and other financial firms. It aims at (i) reform of the institutional regulation and oversight framework; (ii) regulations of banks and other financial institutions; (iii) rules for investor protection; and (iv) rules for consumer protection (Kern 2010). The following regulations directly affect commodity derivative markets:

OTC trade: Following the G20 commitments, the Act includes provisions to bring the largely unregulated OTC derivative markets under stronger control. This includes, most importantly, (i) that traders will be required to use central clearing through CCPs that act as intermediaries between sellers and buyers of contracts when entering into standardized derivative transactions (clearing requirement); (ii) greater transparency through trading of all cleared OTC derivatives on registered trading platforms such as exchanges or exchange-like facilities (trading requirement); and (iii) reporting all OTC derivative transactions to trade repositories (reporting requirement) (Jackson/Miller 2013). In July 2012, CFTC approved an exemption for the clearing and trading requirement for non-financial end users (i.e. commercial traders)¹⁷, that are using derivatives to hedge or mitigate commercial risk (DerivAlert 2012). Hence, only financial entities will be required to use clearinghouses and trading platforms when entering into standardized derivative transactions with other financial entities. A further provision demands that (iv) all non-cleared derivative transactions have to apply margin rules (margin rules requirement), again with a possible exemption for non-financial entities hedging commercial risk.

Swap dealers: Swap dealers and major swap participants¹⁸ are regulated through the above provisions on OTC trading as swaps are traded on OTC markets. In addition, the “swaps pushout rule” (the so-called “Lincoln Rule”) prohibits any federal assistance from being provided to “swaps entities”. It therefore requires banks to spin off their swap activities to separately capitalized affiliates that are not backed by federal deposit insurance or have access to the US Federal Reserve discount window. However, in an interim final rule in June 2013, the Federal Reserve conceded wide-ranging exemptions to this rule. It allows insured

¹⁷ The term end user is not exactly defined but it would be an entity that is not a financial entity and is using derivatives to hedge or mitigate commercial risk (ISDA 2012). Hence, it is a commercial trader, i.e. a physical commodity trader that is involved in spot markets and hedges risk on derivative markets.

¹⁸ A swap dealer is defined as an entity that (i) holds itself out as a dealer in swaps; (ii) makes a market in swaps; (iii) regularly enters into swaps with counterparties as an ordinary course of business for its own account; or (iv) engages in any activity causing the person to be commonly known in the trade as a dealer or market maker in swaps. A major swap participant is defined as an entity other than a swap dealer that (i) maintains a substantial position in swaps (excluding positions held for hedging or mitigating commercial risk), (ii) has substantial counterparty exposure that could have serious adverse effects on financial stability, or (iii) is highly leveraged relative to the amount of capital it holds (ISDA 2012).

depository institutions to engage in swaps used to hedge or mitigate risk and authorizes the US banking agency, after consulting with the CFTC and the Securities and Exchange Commission (SEC), to provide a transition period of up to three years for non-exempted swap activities. In June 2013, a delay of two years was granted to seven of the largest US banks (e.g. Bank of America, City Group, JP Morgan) which will not have to comply with the rule until July 2015 (Nasdaq 2013). In addition, there is a grandfathering provision meaning that the rule will only apply to swaps entered into after the end of the transition period (Polk 2013). Further, business conduct standards for swap dealers and major swap participants were established. These standards should affect the way how market participants settle derivatives transactions to lower risk, promote market integrity and protect against fraud, manipulation and other abuses (Kern 2010; Gensler 2011). Regulators were also given the authority to impose capital and margin requirements on swap dealers, major swap participants and dealers trading counterparty credit risk.

Transparency: The Act includes reporting requirements through (i) an obligation for real-time reporting of all cleared derivatives transactions (post trade transparency). For swaps, (ii) all swaps – both traded on exchanges and off – have to be reported to data repositories so that regulators can get an overview of the risks in the system and can control the markets for fraud, manipulation and other abuses. Information in swap data repositories should be also available to foreign regulators. The Act further requires that (iii) all swaps transactions are publicly reported post-trade (Gensler 2011).

Position limits: The Act requires regulators (i.e. the CFTC) to put in place (more stringent) position limits to ensure that markets do not become too concentrated and the diversity of actors is maintained. The Act also enables the authority to include the setting of aggregate position limits across all markets and trading platforms, including OTC, on all derivatives that perform or affect a significant price discovery function with respect to regulated markets that the CFTC oversees (Clapp/Helleiner 2012). The exception for swap dealers was removed, hence closing the “swap dealer loophole”.

Proprietary trading: Section 619 of the Dodd-Frank act (the so-called “Volcker Rule”) prohibits depository institutions, bank holding companies, and their subsidiaries or affiliates (banking entities) from engaging in short-term proprietary trading¹⁹ of any security derivative and certain other financial instruments for the banking entity's own account. It also prohibits owning, sponsoring, or having certain relationships with a hedge fund or private equity fund (CFTC n.d.; Uchitelle 2010). Proprietary trading by financial institutions is generally prohibited or limited because of problems related to insider information and conflicts of interest. The US Bank Holding Company Act (BHCA) generally prohibits entities subject to the BHCA from engaging in proprietary trading and investing in, sponsoring, or controlling hedge funds and private equity funds. The Dodd-Frank Act extends these restrictions to all entities covered by the Act (ISDA 2012).

Around three years after the Dodd-Frank Act was passed, many provisions are still in the process of implementation. CFTC and SEC are working on implementation rules that are subject to public consultation which will strongly influence how the Act will operate in practice. The CFTC envisioned finalizing rules between spring 2011 and fall 2012. However, also due to intense lobby efforts from the financial sector, implementation is substantially delayed – almost two thirds of the deadlines have been missed until June 2013²⁰ – and are also under threat related to legal challenges. ISDA and the Securities Industry and Financial Markets Association (SIFMA), both financial lobbies representing a number of financial institutions such as JP Morgan, Goldman Sachs and Morgan Stanley filed a case against the

¹⁹ Proprietary trading occurs when a bank or other financial firm trades financial assets or other financial instruments with the firm's own money (own account trading) as opposed to its clients' money (Financial Times n.d.).

²⁰ In total, the Dodd Frank Act requires 398 rulemakings. As of June 3 2013, 279 rulemaking requirement deadlines have passed. Of these deadlines, 175 have been missed and 104 have been met. In total, 153 of the 398 total required rulemakings have been finalized, while 128 rulemaking requirements have not yet been proposed (Dodd-Frank Resource Center 2013).

implementation of stricter position limits arguing that the CFTC failed to determine whether those limits were either “necessary” or “appropriate” (US District Court for the District of Columbia 2012). The US district court for the District of Columbia ruled in favor in this case in September 2012 – just weeks before the position limits rule was due to be implemented in October 2012 (NYT 2012). The CFTC decided to appeal the court rule in November 2012.²¹ The outcome of the appeal is still pending (as of September 2013). The US court ruling on position limits will have important effects not just for US regulation but potentially also for the EU. If the ability of the CFTC to impose position limits is constrained by a requirement to prove their need, the EU may feel pressure to weaken its rules as well. If the CFTC wins its appeal, the EU may be more willing to adopt tighter regulations (Clapp 2012d).²²

As in all financial regulation, interests of the financial sector strongly influence debates and legislation – formally and informally and also directly in the regulatory process through the participation of banks, financial institutions and investors in various committees (Weber 2006). Banks have had many meetings with the CFTC to discuss Dodd-Frank rule making since mid-2010, with Goldman Sachs topping the list with 52 meetings and position limits being the most-discussed issues in 2011 (FT Alphaville 2011). Out of the 393 comments filed for the Volcker Rule, 70 % came from the financial sector and only around 1 % from NGOs.²³ The influence of financial actors is facilitated by the complexity of the issues with representatives of the financial sector being often used as “experts” to assess developments and develop regulatory proposals. But also real economy interests of commercial commodity producers, consumers and traders are represented in policy debates (Clapp/Helleiner 2012). Agricultural interests allied with energy related businesses representing industries, end user and consumers in lobbying for tighter regulation, forming the Commodity Markets Oversight Coalition (CMOC) (Clapp/Helleiner 2012). Commercial traders in agricultural commodities have in particular had influence as the CFTC reports to the agriculture committees of Congress rather than the financial services committees. Another example is the non-partisan organization Public Citizen, which represent consumers’ interests in the Energy & Environmental Markets Advisory Committee to the CFTC and has stood up for position limits and against hedge exemptions (CFTC Testimony 2009).

2.3. Regulations and discussions in the European Union

In Europe, most legislation in the area of financial services is initiated at the EU level. As in the majority of EU legislative procedures, the “right of initiative” lies with the European Commission (EC). The decision process begins with a public consultation of the EC where both individuals and organizations can participate. After the consultation, the EC submits a legislative proposal (directive or regulation²⁴) to the European Parliament (EP) and the Council. This proposal is discussed and either adopted or suggestions for change are made in the EP (more precisely, the Committee on Economic and Monetary Affairs, ECON) and at the Council of Ministers (the Council of Economic and Finance Ministers, ECOFIN). The following discussions between the ECOFIN, the EP and the EC are called trilogue negotiations. Once a legislative proposal has been adopted jointly by the EP and the ECOFIN, the so-called “Level 1” text is ready which sets out the basic framework of the legislation. It also indicates where technical proposals are required for which the help of the

²¹ CFTC’s commissioners did not have a unanimous view about the appeal. While commissioner Gary Gensler believes the rule is necessary and reaffirms Congress’ concern that “no single trader be permitted to obtain too large a share of the market, and that derivatives markets remain fair and competitive” (CFTC 2012a), commissioner Scott O’Malia suggests to better “study the markets and to determine whether new position limits are in fact necessary, and only if so then to decide on the most cost-effective way of establishing such limits” (CFTC 2012b).

²² The CFTC came also under attack from another lawsuit filed by CME over new rules on reporting requirements. The CME suit was later dropped after the CFTC relaxed its expectations for these requirements (Clapp 2012d).

²³ The remaining 30 % mostly were from representatives of the US Senate and Congress, from other companies, Universities and individual citizens (CFTC 2012c).

²⁴ An EU directive has to be implemented into national law in a given period of time; an EU regulation applies directly in member states.

European Supervisory Authorities (ESAs) such as the European Securities and Markets Authority (ESMA)²⁵ in drafting so-called “Level 2 implementing measures” is used. Through this procedure, the decision process can take quite long as is also the case with current reforms concerning commodity derivative markets.

In the EU, commodity derivatives markets have grown in importance for price discovery and risk management, particularly since the deregulation of agricultural policy, but they are still smaller in size and play a less important role than in the US²⁶. EU legislation on financial markets, including commodity derivatives, is characterized by a highly fragmented set of directives and regulations. Up to the financial crisis in 2008, EU legislation mainly focused on deregulatory measures with the objective to create a single European financial market. Especially, the Markets in Financial Instruments Directive (MiFID) that came into force in 2007 was a key element of EU financial market integration that focused largely on deregulation (Küblböck 2010). The dynamics changed however in the aftermaths of the financial crisis and in the context of large commodity price fluctuations. Since 2009 existing legislative instruments, particularly for commodity derivative markets, have been revised and new regulations have been introduced with the aim to strengthen oversight and regulation, also related to the G20 commitments.

Table 1 gives an overview of the most important regulatory initiatives concerning commodity derivative market reform. The European Market Infrastructure Regulation (EMIR) was adopted in August 2012 and technical standards entered into force in March 2013; member countries will have to apply most of the reforms until mid 2014 at the latest (ESMA 2013). MiFID and the related Markets for Financial Instruments Regulation (MiFIR) are still in the process of negotiation. There exist proposals by the EC, the EP and the Council that are the basis of trilogue negotiations that started in September 2013. A first compromise might be reached in fall 2013; implementation legislation and technical standards will however take some time with MiFID II/MiFIR entering into force probably at the earliest in spring 2015. Hence, the discussion of MiFID/MiFIR below is based on the three separate proposals and not a final proposal.

Table 1: EU regulatory initiatives on commodity derivative markets

EXISTING REGULATION				
Markets for Financial Instruments Directive (MiFID)		Market Abuse Directive (MAD)		
reformed	new	replaced by		new
MiFID II	Markets for Financial Instruments Regulation (MiFIR)	Directive on Criminal Sanctions for Market Abuse	Market Abuse Regulation	European Market Infrastructure Regulation (EMIR)
Adoption due March/April 2014	Adoption due March/April 2014	Trilogue negotiations are expected to start in 2013	Agreement reached in Sept. 2013; final adoption and entering into force aligned to MIFID timetable	Adopted in August 2012; technical standards in March 2013

Sources: Henn (2011); WDM (n.d.); EC (2013a).

²⁵ ESMA was established in January 2011 as part of the new ESAs introduced to replace the EU Committees of Supervisors. Its primary purpose is to ensure the orderly running of the European capital markets and the protection of investors. However, ESMA has also often an important role in the EU legislative process (Prieg 2012).

²⁶ Several important commodity exchanges are located in Europe. Amongst others, NYSE Liffe which provides commodity derivatives on e.g. cocoa or Robusta coffee or the London Metal Exchange (LME) where 80 % of global non-ferrous metal derivative business is conducted.

EMIR

The first relevant reform is the new European Market Infrastructure Regulation (EMIR). It is the main legislative instrument to reform OTC derivative markets in the EU. In September 2010, the EC submitted a proposal based on the G20 commitments and the approach taken by the US. The most important regulations include: (i) information reported on all OTC derivative transactions to trade depositories (reporting requirement); (ii) clearing of eligible (i.e. standardized) OTC derivatives through CCPs (clearing requirement); (iii) improved risk assessments (including margin rules) for non-standardized and non-cleared OTC derivatives if they exceed the clearing threshold (margin rule requirement); and (iv) common rules for CCPs and for trade repositories, including the duty to make certain data available to relevant authorities and the public (Henn 2012b, 2012c). The central clearing requirement is generally applicable for financial counterparties. For non-financial counterparties²⁷, there is an exception for activities that reduce commercial risk and that serve treasury financing, and a threshold for all other activities. The hedging exemption is also applicable if only one side of the transaction is a non-financial counterparty.

The proposal was discussed controversially in the EP, and 125 amendments were put forward in the ECON meeting in February 2011. Afterwards negotiations between the Council of Ministers (ECOFIN), the EP and the EC took place. In October 2011, the Council of Ministers agreed on a compromise with the EP. The law was finalized in July 2012 and entered into force in August 2012; important technical standards proposed largely by ESMA were adopted in March 2013 (Henn 2013). ESMA had an important role in drafting technical standards being for example responsible for defining which derivatives are sufficiently standardized and thus should be cleared (Pieg 2012).

MiFID and MiFIR

The second relevant initiative is the reform of MiFID. The directive aims at regulating investment firms and trading venues, covering regulated markets (e.g. commodity exchanges) and other trading facilities, and applies to all financial instruments that are traded on exchanges and other platforms and do not fall under EMIR (OTC trading), including, for example, shares, bonds, structured products and exchange traded derivatives, as well as commodity derivatives. MiFID is a key element of EU financial market integration and its original version liberalized financial market trading in the EU allowing trading venues and investment firms to operate freely across the EU, creating so called multilateral trading facilities (MTFs), and enhancing competition between exchanges and MTFs.²⁸

After a long period of internal discussions, the EC released proposals for MiFID II and for a new regulation on the same issue, the Markets in Financial Instruments Regulation (MiFIR), in October 2011. The proposals include in particular the following regulations: (i) creation of new trading platforms, so-called organized trading facilities (OTFs)²⁹; (ii) shifting standardized OTC derivative trading to more regulated trading places, including regulated markets, MTFs or OTFs related to the clearing requirements of EMIR (trading requirement); (iii) real-time reporting by traders to trading platforms of all derivatives that are eligible for clearing or required to be reported to trade repositories and weekly public reports by trading platforms on positions of classes of traders (reporting requirement); and (iv) position limits or

²⁷ Non-financial counterparties are undertakings other than financial counterparties that include banks, investment firms, insurance companies, registered funds, pension funds and private funds (ISDA 2012). Hence, they are commercial traders, i.e. physical commodity traders that are also involved in spot markets.

²⁸ A MTF is a multilateral system operated by an investment firm or market operator, which brings together third-party buying and selling interests in financial instruments (ISDA 2012). Liberalization led to a multiplication in trading venues. In 2012 there were 146 MTFs operating in Europe. The cost of consolidating information and accessing liquidity that has been split across multiple pools has tended to discourage many smaller investors while benefiting large investment firms (Finance Watch 2012).

²⁹ An OTF is any system or facility, which is not a regulated market or MTF, operated by an investment firm or a market operator, in which third-party buying and selling interests in financial instruments are able to interact in the system in a way that results in a contract. In contrast to regulated markets and MTFs, OTFs should be able to set discretionary rules for bringing together multiple third parties' buying and selling interest (ISDA 2012).

alternative measures with equivalent effect on regulated markets, MTFs and OTFs with the exception of positions held for hedging purposes (Henn 2012b, 2012c). With regard to the trading requirement of standardized OTC derivatives, ESMA still has to define a list of derivatives subject to the clearing obligation that are also subject to the trading obligation (Article 26/27 of MiFIR).

The Rapporteur of the EP, Markus Ferber (CSU), released its draft report with proposed changes to the EC proposal in March 2012 and received comments by the EP until May 2012 to develop a common position by the EP. The draft includes several changes that strengthen regulation, in particular concerning the authority of ESMA to impose position limits at the European level, the deletion of the addition “alternative measures”, and the direct and stronger regulation of high frequency trading (HFT). The EP draft also suggests reducing the exemption from the general MiFID rules for commercial traders that pursue hedging activities, and strengthening some provisions on transparency (Henn 2012 b, 2012c). The ECON vote in September 2012 included a last minute change clarifying that position limits should not be reduced to the expiry month but only apply to net positions. Concerning HFT regulations, the ECON vote pushed for an ambitious set of measures, including a minimum holding period of 500 milliseconds for any position on regulated exchanges, higher fees for subsequently cancelled orders and for a high ratio of cancelled orders, and prohibition of direct electronic access to trading venues by investment firms (Henn 2012b). The EP decided on its position in October 2012 where largely the proposal of the ECON was confirmed.

The Council of Ministers agreed to a position in June 2013 after 20 months of internal negotiations. The proposal of the Council weakens position limits regulation by giving member countries discretion on how to implement position limits which is in contrast to the EP proposal on common European position limits managed by ESMA. A positive aspect of the Council proposal is that competent authorities themselves should establish and apply limits and not only oversee limit setting by trading places. Further, in contrast to the EC and EP proposals that restrict position limits to regulated markets, MTFs and OTFs, the Council proposal does not restrict limits to exchange-traded contracts speaking of derivatives which may include OTC trade. With regard to OTFs, the EP agreed on their creation but insisted that they can be only used for large, non-equity trades for which no liquid market is available. Hence, trading of shares and bonds should be excluded from OTFs in the EP proposal. In contrast, the Council proposal also allows trading of highly standardized products such as shares on these platforms which could encourage a further shift of trade flows to less regulated trading platforms (Giegold 2013). The Council proposal further states that limits should not apply to treasury financing activity of non-commercial entities or of a person who acts in behalf that non-financial entity (van Schaik 2013).

With the EP and the Council having agreed on their proposals, trilogue negotiations started in September 2013. The main open issues include (i) whether the legislation will require real time reporting; (ii) how strong the trading obligation will be; (iii) whether OTC trade will be subject to position limits which is potentially included in the Council proposal; and (iv) whether the EC and ESMA will set the position limits as in the EP proposal to be applied by trading platforms, or only set some criteria based on which national authorities will decide. It looks unlikely that the EU legislation will include aggregate position limits in addition to individual limits (correspondence with Vander Stichele 2013). The EP will consider the Council position at its December 2013 plenary session (TAG Archives 2013). The agreed text should be due for adoption in spring 2014 (Friends of the Earth 2013). After the final text is adopted, it is expected that the development of implementing legislation and technical standards by ESMA will take around 18 months (EC 2013b). This means that MiFID II/MiFIR will enter into force at the earliest in spring 2015. The final agreement and the implementation rules will strongly influence the impact of the regulations as the scope of several measures is still open to be defined by these rules (e.g. the list of derivatives subject to the trading obligation).

Other regulations

Other regulations that also partly refer to commodity derivative trading are the replacement of the Market Abuse Directive (MAD) (that was initially implemented in 2005) by a Directive on Criminal Sanctions for Market Abuse (MAD II) and a Market Abuse Regulation (MAR). They refer to market abuse, including proprietary and insider trading and market manipulation where regulation is extended from regulated exchanges to MTFs and OTFs as well as to spot contracts. As certain transactions in derivative markets may manipulate the price in spot markets and vice versa, the definition of market manipulation is extended to also capture such cross-market manipulation. For example, abusive squeezes which are the practice of accumulating physical assets to create shortage and then entering into derivative contracts and requiring physical delivery should be prohibited under MAR (SOMO/WEED 2012).³⁰

Also at the EU level, interests of the financial sector strongly influence debates and legislation on financial market regulation. For example, ISDA is one of the financial sector lobby organizations closely following the decision making process and heavily lobbying by producing papers about their positions and commenting on draft texts by the Council (Henn 2012a). Pressure is also exerted by commodity producers on European markets but less so than in the US. For example, in July 2010 16 cocoa processing and trading firms signed a letter to the London futures exchange threatening to move their hedging business to New York if US style position limits were not introduced to address market manipulation (Farcy 2010, cited in Clapp/Helleiner 2012; Vander Stichele 2012).³¹

3. Scope and limitations of current reforms and further regulations

3.1. Fundamental functions of commodity derivative markets

When assessing the scope and limitations of reforms, the primary functions of commodity derivative markets for the real economy and hence for commercial traders have to be taken as a benchmark. Commodity derivative markets provide two important functions for commercial traders: First, the price discovery function as trading on futures markets enables the open-market discovery of prices of commodities that are used as a benchmark for spot transactions and as a basis for decisions on production, consumption and investments. Second, commodity futures markets offer an insurance function as they enable spot market participants to hedge against the risk of price fluctuations. For instance, a producer of wheat can sell futures contracts against the amount of the expected harvest which secures a certain price for wheat while a consumer of wheat can buy futures contracts to secure input costs. With the dismantling of other price stabilization and risk management systems in the last decades, this function has become important for producers, consumers and traders of physical commodities not only in the US where it has played an important role for a long time but in Europe and particularly in many developing countries.

Recent research at ÖFSE at least questions to which extent commodity derivative markets still fulfill these fundamental economic roles of price discovery and hedging price risks for commercial traders in the context of the financialisation of these markets (see Ederer et al. 2013 and particularly Heumesser/Staritz 2013 for details on these findings). Speculators are important for the functioning of commodity derivative markets to take over risks from

³⁰ Some other regulations impact also on commodity derivative markets, including the new revision of the EU directive on Units of Collective Instruments in Transferable Securities (UCITS) which regulates investment funds such as commodity exchange traded funds (ETFs); regulatory changes to how individuals can invest in so-called packaged (commodity) investment funds (PRIps); the new regulation of the production and use of (commodity) indices; and rules on banks' trading books and risk assessment management of trading, included in EU bank reforms and in negotiations at the Basel Committee on Banking Supervision (Vander Stichele 2012).

³¹ This is related to Armajaro's CC+fund buying so much of the cocoa futures contracts on the NYSE Liffe London cocoa exchange that it took delivery of almost all available contracts in July 2010. This resulted in record high prices and confronted chocolate makers with a shortage of contracts for physical delivery (Vander Stichele 2013).

hedgers. But the increasing and often dominant role of financial investors in commodity derivative markets since the early 2000s, that was only made possible given the deregulations discussed above, has changed the microstructure of commodity derivative markets in terms of trading volumes and open interest positions, market participants, investment products and strategies, speed and complexity. The trading strategies of financial investors that are largely not based on fundamental demand and supply conditions have increased the likelihood of excessive short term price fluctuations leading to insecurity about the price formation process in the short term. This questions at least the price discovery function and makes it less reliable for production, consumption and investment decision and planning of commercial traders. Always a difficult risk management instrument for smaller commercial traders, hedging has tended to become even more complex, expensive and inaccessible given the increased complexity, speed and short-terminism and higher risks and costs involved in commodity derivative trading, in particular for smaller traders with limited capacities to monitor markets and access to finance.

A further crucial issue is that the current classification of traders provided by the CFTC³² abstracts too much from the reality in commodity markets given the multiple and interrelated role of traders. Financial investors, particularly investment banks and hedge funds, have become involved in trading physical commodities, and large commercial traders, i.e. multinational trading houses typically pursue hedging and speculative trading strategies using similar trading systems as investment banks and hedge funds or have even established separate financial services units or hedge funds. The increasing role of financial investors in physical commodities is related to regulatory changes in particular in the US. In the context of financial market deregulation since the 1980s, investment banks won regulatory approval to buy companies that traded in physical commodities, expand into storing and transporting commodities, and buy physical commodity trading assets (NYT 2013). These multiple roles of large commercial traders and financial investors raise crucial questions related to systemic risk, conflicts of interest and manipulation. Large commercial traders often dominate hedging activities but, by increasing their speculative involvement by investing on their own account or for third parties, they may use their position as „commercial traders“, exempt from position limits, to engage in or facilitate speculation³³. Hence, regulation differentiating between commercial traders that are perceived as mere hedgers and financial investors that are perceived only as speculators does not capture the actual complexity of trading.

Though there is controversy about the effect of financial investors on commodity derivative markets in the empirical literature, the available results support the hypothesis of the financialisation of commodity derivative market and the call for regulations. These should aim for commodity derivative markets to fulfil their fundamental roles, also for smaller commercial traders in developing countries. In the context of the financial crisis, useful reforms have been discussed and agreed on concerning commodity derivative markets at the G20, US and EU level as outlined above. Civil society actors³⁴ generally agree that the G20 commitments and the regulations and proposals at the US and EU level include important steps. But they

³² In contrast to trading on European commodity exchanges the CFTC provides weekly or monthly information on traders' positions on US commodity futures markets. Since 1988 CFTC provides data on commercial and non-commercial traders' open positions in the weekly Commitments of Traders report. In this report swap dealers were largely part of the commercial trader class. Since June 2006, the disaggregated Commitments of Traders report classifies traders in the categories: „commercial traders, swap Dealers, „ „Managed Money,“ and „Other Reportables, since CFTC has also monthly data on index investment activity in commodity derivative markets (www.cftc.gov).

³³ For instance, in the US, the Subcommittee on Banking, Housing and Urban Affairs held a hearing in July 2013 on financial holding companies and their involvements in physical commodities. The main focus was the question whether there should be limits on the expansion of financial institutions into physical commodities in light of banks activities in physical commodities being not transparent and not monitored by any regulators (US Senate Committee on Banking, Housing and Urban Affairs 2013).

³⁴ The most prominent civil society actors working on commodity derivative markets regulation are the World Development Movement, Oxfam, Friends of the Earth Europe, SOMO, WEED, Finance Watch, Action Aid and Better Markets (see for example WDM 2010, 2011; Oxfam 2011; Finance Watch 2012; Friends of the Earth 2013; Action Aid 2011; Better Markets 2013; SOMO/WEED various dates).

also state that they are not sufficient to address excessive speculation, substantially reduce the role of financial investors in commodity derivative markets, and ensure the effective functioning of commodity derivative markets in terms of price discovery and hedging. Taking a closer look at the areas of reform, one can see that most effort has been employed to introducing improved transparency and risk management, in particular concerning the previously largely unregulated OTC markets and to a certain extent also to strengthening position limits and regulatory authorities. However, more interventionist regulations have only marginally been addressed. These include most importantly how the dominance of financial investors and their trading strategies can be limited and hence the dominance of commercial traders and fundamentally based trading strategies ensured.

3.2. Assessment of current reforms along main regulatory areas

In this section, we identify six main regulatory areas that we see as most important for commodity derivative market regulation and that have to different extents been addressed in US and EU regulations and proposals, namely: (i) transparency and reporting; (ii) regulation of OTC trade and swap dealers; (iii) position limits; (iv) price stabilization instruments; (v) ban on certain trading strategies and actors; and (vi) strengthening of regulatory and supervisory authorities and international cooperation. Table 2 gives an overview of US and EU regulations in these areas. The table is followed by a discussion of the scope and limitations of these regulations along the six areas identified. A factor that substantially limits the possibility to assess the scope of US and EU regulations is however that legislation requires the adoption of extensive implementation rules and technical standards. Key points concerning exemptions or details on certain regulations will be only settled in these rules which will therefore significantly affect how the legislations will operate in practice (ISDA 2012). In the EU, there is also no final agreement yet on a common regulatory proposal but only three separate proposals by the EC, the EP and the Council.

The six areas identified are discussed in more detail in the following as well as further policies that would be necessary to regulate commodity derivative trading and ensure the functioning of these markets for commercial traders are proposed. When proposing reforms, it has to be taken into account that commodity derivative markets along with financial markets in general are complex and dynamic which makes it difficult to outline concrete reform proposals in a static way. As the effect of certain regulations, in particular of more interventionist ones such as the setting of tight position limits and the restriction of certain trading strategies, products or actors, are difficult to predict, a flexible approach to regulation that reflects on the risks of failure and adapts regulations if necessary would be required. Hence, sequencing of reforms, including periodic evaluation of the impact of regulatory instruments, would be important to allow for a learning process and flexible and dynamic adaptations and to ensure that the fundamental functions of the markets are not undermined. Additionally, it has to be taken into account that regulations which are implemented unilaterally may cause a shift of financial investors' trading to other markets (i.e. regulatory arbitrage and competition), so that the overall effect of a regulation is even more difficult to assess. This underlines the need for strong international cooperation between regulators.

Table 2: Overview of relevant US and EU regulation

Reform area	US/Dodd Frank Act	EU/EMIR and proposals on MiFID/MiFIR ³⁵
1. Transparency and reporting	Already monthly aggregate data on traders' classes post-trade Increased reporting requirements concerning OTC transactions and swaps – (i) obligations for real-time reporting of all cleared derivatives transactions (i.e. post trade transparency); (ii) all swaps have to be reported to data repositories and publicly post-trade	MiFID: (i) real-time reporting by traders to trading platforms of all derivatives that are eligible for clearing or required to be reported to trade repositories by investment firms; (ii) weekly public reports by trading platforms on positions of classes of traders EMIR: (i) reporting obligation for all OTC derivatives to trade repositories
2. Regulation of OTC trade and swap dealers	Clearing and trading requirement: All standardized OTC derivatives have to be cleared through CCPs and traded on registered trading platforms such as exchanges or exchange-like facilities (e.g. swap execution facilities or designated contract markets); Exemption of non-financial entities when hedging commercial risks Reporting all OTC derivative transactions to trade repositories Margin rules for all non-cleared derivative transactions; possible exception non-financial entities hedging commercial risks Swap dealers: (i) business conduct rules for swap dealers and major swap participants; (ii) "swaps pushout rule" requires banks to spin off their swap activities to affiliates that are not backed by federal deposit insurance or have access to the U.S. Federal Reserve discount window	EMIR: (i) clearing obligation for standardized OTC derivatives; Exemption of non-financial counterparties that hedge commercial risks; (ii) improved risk assessment (margin rules) for all non-cleared OTC derivatives if exceed clearing threshold; (iii) common rules for CCPs and trade repositories MiFID: (i) creation of OTFs; (ii) bringing OTC trade to regulated exchanges, MTFs or OTFs (trading obligation); (iii) ESMA to define list of derivatives subject to clearing obligation that are also subject to trading obligation

³⁵ There is no final agreed proposal yet on MiFID/MiFIR but three separate proposals by the EC, the EP and the Council that are the basis for trilogue negotiations.

Reform area	US/Dodd Frank Act	EU/EMIR and proposals on MiFID/MiFIR ³⁶
3. Position limits	Historically important but raised, circumvented or eliminated; OTC trade exempted Regulators have to establish position limits; extended to set aggregate limits across all markets and trading platforms, including OTC, on all derivatives that perform or affect a significant price discovery function with respect to regulated markets But ISDA and SIFMA filed lawsuit that has been approved; CFTC appealed; final decision pending	Important in most regulated exchanges MiFID: All trading venues, including regulated markets, MTFs and OTFs, have to impose position limits but not OTC trade (EC and EP proposals); Council proposal does not restrict to exchange-traded contracts, may include OTC; Exception for hedging purposes and treasury financing activity (latter only in Council proposal)
4. Price stabilization instruments	Most exchanges have some price limits in form of circuit breakers or standstills No further discussions on price limits and financial transaction tax	Most exchanges have some price limits in form of circuit breakers or standstills No further discussions on price limits. Introduction of a financial transaction tax in 11 EU member states in 2014, in the procedure of “enhanced cooperation”, (which would also apply to derivatives) is still contested
5. Ban on certain trading strategies and actors	HFT: Not in Act but CFTC sub-committee on algorithmic trading and HFT; no proposals on regulation yet	HFT: (i) minimum holding period of 500 milliseconds for positions on regulated exchanges; (ii) higher fees for subsequently cancelled orders and for a high ratio of cancelled orders; (iii) prohibition of direct electronic access to trading venues by investment firms
6. Strengthening regulatory and supervisory authorities and international cooperation	CFTC authority in certain areas strengthened Some information sharing with foreign authorities	ESMA and EC authority in certain areas strengthened Some information sharing with foreign authorities

Source: Authors' illustration.

3.2.1. Transparency and reporting

The first step in ensuring commodity derivative markets work effectively is ensuring market transparency. The situation concerning commodity derivative trading has been very intransparent, in particular for OTC trading, inhibiting market oversight and regulation. Transparency and reporting standards are comparatively high in the US as monthly data on positions of different trader classes for exchanges (but not for OTC trade) are reported by CFTC (see footnote 11). However, this classification is still very aggregated and based on trader classes and not trading strategies with new trading strategies such as HFT not being captured (though there is discussion ongoing at the CFTC on how to classify them, CFTC 2012). One of the major difficulties to classify traders is that many engage in several operations and report their trading class only upon registering on the market. In the EU, there

³⁶ There is no final agreed proposal yet on MiFID/MiFIR but three separate proposals by the EC, the EP and the Council that are the basis for trilogue negotiations.

is no public information available on positions held by different classes of traders. In the US and the EU, reporting standards will be strengthened and will also include OTC trade through an obligation for real time reporting of aggregate positions for all cleared and as it seems also non-cleared derivative transactions (where for the latter it is stipulated that they have to be confirmed) to data repositories and the public.

In order to obtain effective regulation, it is crucial that there are no exemptions from reporting. All transactions on commodity derivative markets including all positions resulting from OTC (also non-cleared ones) have to be reported (Finance Watch 2012). Further, reporting should not be left to individual exchanges or trading platforms but to authorities at the national, EU and international level, in particular given the increasingly complex, opaque and interrelated strategies of financial investors and commercial traders. These authorities need a broad, aggregate, real time and harmonized overview of the situation on commodity derivative markets to be able to assess risk and pursue their regulatory tasks. Information should however not only be provided to regulatory authorities but also to the public as such data is a precondition for research and public debates.

Aggregated data is also a prerequisite to deal with different classes of traders differently by setting for example distinct position limits for index replication, algorithmic trading and HFT (see below). The current division in commercial and non-commercial traders and also in commercial traders, swap dealers and money managers does not capture the complexity of current commodity derivative markets. It could be demanded from traders to declare the category of trader (e.g. commercial, financial) and type of entity (e.g. commodity trading house, investment bank, hedge fund) and their trading strategies or purpose of the transaction (e.g. hedging, index-replication, ETP, trend-following, HFT, macro trading, fundamental based trading). This obligation exists for some traders such as commodity trading advisors (CTAs) but not generally for participants on commodity derivative markets. The level of aggregation would need to be dynamically adapted to changing market dynamics. For example, given the increasing importance of HFT it would be necessary to have a detailed overview of the importance of these traders and trading strategies and their effects to develop meaningful regulations.

3.2.2. Regulation of OTC trade and swap dealers

The important role of OTC trade has increased risks of commodity derivative trading as authorities have no oversight and control on the volumes and risks of the involved parties in OTC transactions. Taking this into account and based on the G20 commitments, the most important regulatory changes in the US and the EU took place in the area of OTC trade. In particular, this involves the clearing requirement for standardized OTC derivatives, the reporting requirement to trade repositories, and margin rules for non-cleared derivative transactions. There are, however, exemptions for the clearing and margin rules requirement for non-financial entities/counterparties that use OTC derivatives for hedging commercial risks. In the US, OTC derivatives subject to the clearing obligation have also to be traded on registered trading platforms such as exchanges or exchange-like facilities. In the EU, OTFs were created to transfer OTC trade to regulated exchanges, MTFs or OTFs but ESMA still has to define the list of derivatives covered by the clearing obligation that are also subject to the trading obligation. In the US, there are also particular regulations for swap dealers and major swap participants such as the “swaps pushout rule” and business conduct rules.

These are important steps but, as far as possible, it should be mandatory for trading to take place on regulated, transparent and public exchanges. In cases where OTC trading is necessary as commercial traders may require specific non-standardized contracts to hedge price risks of their physical commodity activities, there should be limited exceptions for commercial traders with strict reporting, security and clearing requirements. Regulators would also need to work with commercial traders and financial actors to standardize OTC derivatives so as to ensure that greater liquidity can be achieved in a smaller number of standardized exchange-traded derivatives. Once a greater standardisation of derivative

contracts has been established, the responsibility should lie with commercial traders to prove to regulators that any remaining OTC contracts exist for the hedging of genuine commercial risk and cannot be achieved through standardized exchange traded contracts (WDM 2011). Non-financial entities/counterparties that use derivatives to hedge or mitigate commercial risk should not be exempted from clearing and margin rules requirements. This is particularly important given the difficult distinction in hedging and speculative activities of particularly large commercial traders. The risk of blurring speculative positions has grown even further because physical commodity traders increasingly have separate financial investment units or own hedge funds, and investment banks or hedge funds are increasingly engaged in physical commodity production, warehousing and trading (Heumesser/Staritz 2013; Vander Stichele 2012). Concerning EU regulations, the creation of OTFs is criticized as it may lead to a shift of trading from regulated exchanges and MTFs to OTFs and not so much to a shift of OTC trading to OTFs. This would reduce transparency and further fragmentation of commodity derivative trading (Henn 2012b; Giegold 2013).

3.2.3. *Position limits*

Position limits, i.e. limits on the maximum position in one commodity futures (or options) contract or in all futures (or options) contracts of one commodity combined that may be held by one trader (individual position limits) or one class of traders (aggregate position limits), have been a key instrument to regulate derivative markets for a long time. They are meant to reduce the likelihood that a single entity or class of traders can obtain positions large enough to manipulate or dominate the market. Generally, they are only imposed on non-commercial traders with commercial traders with large merchandising needs getting hedging exemptions (Mayer 2009). They have a track record of success in ensuring that commodity derivative markets work effectively, being used in the US for most of the twentieth century and on exchanges in Australia, Hong Kong, Japan, South Africa, China, India and Singapore (Vander Stichele 2012; van Schaik 2013). They are transparent, can be adapted to changes and developments in markets, and give traders legal certainty.

The setting of position limits by regulators and trading platforms are included in US and EU regulations with exceptions for non-financial entities/counterparties that use derivatives for hedging purposes. In the US, they are defined more broadly as being applied to all derivatives, including OTC trade, that perform or affect a significant price discovery function with respect to regulated markets. However, the implementation is pending given the negative court rule discussed above. Further, the US legislation includes individual and aggregate position limits for classes of traders. In the EU, position limits do not cover explicitly OTC trade – the EC and EP proposal explicitly name position limits for regulated markets, MTFs and OTFs, the Council proposal just speaks of derivatives which may include OTC trade but it is not clear. The EU proposals also not explicitly include individual and aggregate position limits. The following limitations weaken the position limit regulation in particular in the EU (van Schaik 2013; Vander Stichele 2012):

- EU level: Position limits need to be established and determined at the EU level as outlined in the EP proposal and applied by competent regulatory authorities. If limits are established nationally, this might lead to competition among member states and inadequate limits and oversight given that trading activities are mostly performed cross border. Further, it is important that regulatory authorities such as ESMA define position limits and not individual exchanges. The latter face a conflict of interest and have no strong incentives to set and enforce position limits (as well as other regulations that limit trading) as most are profit corporations that are publicly traded on stock exchanges and are paid based on the volume of contracts traded.
- Coverage of all trading platforms and OTC trade: Position limits need to explicitly cover all trading platforms, included regulated markets, MTFs, OTFs and OTC trade to ensure that physical hedgers dominate commodity trading. Not including OTC trade in

the position limit regulation as is explicitly stated in the EC and EP proposal may lead to a further shift to OTC trading.

- Individual and aggregate position limits: In the EU proposals, it is not explicitly stated that individual and aggregate position limits for groups of traders are applied. Individual position limits can be quite easily circumvented. They further prevent market abuse and manipulation but do not curb speculation as it would be for example still possible that 40 banks hold 100 % of positions in the market (van Schaik 2013). Aggregate position limits for categories of traders such as index investors, hedge funds, HFT, etc. would be required to effectively limit speculation.
- No general exemptions: There should be no general exemptions for any types of traders, including commercial traders, and for treasury financing activities. The limits must be applied to any activity that is not directly related to hedging, so any exemption should be limited to transactions (rather than whole categories of traders) that are demonstrated to be genuine commercial hedges or to the share of trading that can be directly linked to hedging. Hence, when a commercial trader takes positions that are larger than its underlying physical commodity business it must be subject to position limits for the positions taken above hedging requirements. Financial investors should not be allowed any position limit exemption, making it impossible to avoid position limits by taking control of physical commodities.
- Broad coverage of contracts: Position limits need to apply to net (i.e. the difference between long and short positions) and gross positions and to all types of contracts irrespective of settlement modalities (e.g. same treatment of cash settled and physically settled contracts) and expiry dates as this may lead to circumvention. This is particularly important as new generations of commodity index funds roll over commodity derivatives contracts in a more flexible manner which requires position limits for each month throughout the duration of the contracts (Heumesser/Staritz 2013; Vander Stichele 2012).

3.2.4. Price stabilization instruments

Most stock exchanges and also several commodity futures markets have regulations on price limits in the form of circuit breakers or standstills that come into effect when prices fluctuate above a certain level in a certain time span. There were however no explicit discussions on price limits in the US and the EU that would extend such mechanisms or develop more innovative instruments to address excessive commodity price volatility.

Price stabilisation mechanisms would need to be innovative and smart so that they can be switched on and off in varying market conditions and not impede fundamental-based market developments and liquidity required for hedging (Nissanke/Kuleshov 2012). Under normal tranquil market conditions, markets may be left to function with little interference. However, as soon as markets drift away towards excessive volatility and bubbles or busts, an intervention in the form of a circuit breaker could be triggered to signal to traders that destabilising speculation will be counteracted. Two proposals have been particularly discussed in this regard (Nissanke 2011; Nissanke/Kuleshov 2012) – a proposal based on virtual reserve holding of individual commodities³⁷ and one based on a multi-tier financial transaction tax (FTT). The FTT is discussed here as it is seen as preferable as reserve holding is expensive, particularly to hold large enough reserves to be able to defend a price band, and as a tax would not lead to losses but, on the contrary, to revenues in the event of

³⁷ The proposal by von Braun and Torero (2009) involves a commodity price stabilisation mechanism consisting of small physical decentralized reserves to facilitate a smooth response to emergencies, particularly with regard to food commodities, and a virtual reserve facility that can be used for interventions in futures markets through active selling and buying to prevent price spikes and to keep prices close to market fundamentals. This scheme should be organised by a global intelligence unit that monitors price movements and designs and maintains a dynamic price band system related to market fundamentals. If prices move significantly outside the dynamic band, an intervention in futures markets is activated to bring prices back within the band.

a speculative bubble/bust. The introduction of a FTT is currently discussed in 11 EU member states in 2014, in the procedure of “enhanced cooperation”, which would also apply to derivatives but it is still contested and not clear if, how and when it would be implemented.

A multi-tier FTT was originally discussed in the context of foreign exchange markets but is also a very useful instrument for commodity derivative markets (Schulmeister 2009; Nissanke (2011)). Such a FTT could be adaptable to different market conditions. Under a two tier tax system, the permanent tax rate would be set at a small rate comparable to the FTT currently discussed for other financial markets of around 0.001 to 0.1 % and applicable under tranquil market conditions.³⁸ This rate would need to be related to margin and other fees on commodity trading and would not impede fundamental market developments and price discovery. But once prices leave a pre-defined dynamic price band (covering for example the last 21 trading days), a significantly higher second tier tax rate would kick in of between 50 to 100 % and would thus bring the price back within the band. The tax rates and the bandwidth could be adapted to the fundamental market conditions of different commodities. Such a tax based price control system would allow price adjustments but large short-term fluctuations would be prevented. The small tax rate would in particular affect and reduce short-term trading as the tax accrues for each transaction. Such a multi-tier tax could replace price limits, stand stills or circuit breakers or could be used in addition to these instruments to prevent short term volatility and large price swings.

3.2.5. *Restriction of certain trading strategies or actors*

In US and EU regulations, there are no explicit proposals to restrict certain trading strategies and actors with the exception of proprietary trading and HFT.³⁹ In the EU proposals there are explicit regulations for HFT, including a minimum holding period of 500 milliseconds for positions on regulated exchanges, higher fees for subsequently cancelled orders and for a high ratio of cancelled orders, and the prohibition of direct electronic access to trading venues by investment firms. In the US there are no explicit regulations on HFT but a CFTC sub-committee was established to discuss HFT trade definitions and regulations.

Certain trading strategies tend to have negative effects on commodity prices and markets as they reduce liquidity or lead to overshooting of price movements and high short term volatility unrelated to fundamental supply and demand factors. In particular, the practice of commodity index replication and exchange traded products (ETPs) are controversially discussed as potentially reducing liquidity as traders only hold long contracts, pushing prices up and changing the term structure of commodity prices (Heumesser/Staritz 2013). HFT that pursue transactions in milliseconds and often cancel their orders in the order book before executing them are also controversially assessed in particular to what extent they increase short term volatility. HFT has particularly serious consequences for regulations, reporting and supervision. For instance, imposing position limits based on net positions and requiring reporting to authorities on a daily basis will not cover HFT and other short-time, highly speculative trading strategies (Vander Stichele 2012). Besides HFT, also algorithmic trading more general has been criticized for accelerating price swings as technical traders often lean in the same direction using similar trend following models (Heumesser/Staritz 2013; Schulmeister 2009, 2012). Such trading strategies could be discriminated and hence restricted for example by setting tighter position limits or demanding higher security requirements (i.e. capital and margin requirements). HFT and other very short term trading

³⁸ A tax at such a small rate would already reduce “excessive liquidity” stemming from very short-term oriented and destabilizing transactions. “There are two reasons for this presumption. First, a FTT makes trading the more costly the shorter its time horizon is (e. g. technical trading based on intraday data). Second, a FTT will dampen specifically derivatives trading since the tax rate refers to contract value (e. g., the effective tax on the margin “invested” is by the leverage factor higher than the tax relative to the value of the transaction). For the same reasons, derivatives transactions for hedging purposes as well as “real-world-transactions” (spot) would hardly be affected by a low FTT between 0.1 % and 0.01 %.” (Schulmeister 2009, 4)

³⁹ In the EU, a proposal by the Social Democrats and the Left to prohibit certain financial products related to commodity prices, such as commodity index funds was not approved and included in the EP position (Henn 2012b).

strategies would be affected strongly by a FTT as discussed above. A prerequisite for such differentiated regulations is detailed reporting and transparency on trader classes and trading strategies. In addition, certain types of investors (irrespective of their trading strategy) could be denied access to commodity derivative-related investments. This is particular relevant for pension funds that are subject to quite strict regulation in the US and the EU with regard to their investment activities and largely invest in commodity derivative markets via index replication. Their involvement in commodity markets could be generally prohibited or certain investment and trading strategies such as index replication or technical trading.

3.2.6. Strengthening of regulatory and supervisory authorities and international cooperation

Some G20 commitments and in particular the work of IOSCO and the creation of FSB address international harmonization and cooperation. The FSB for instance prepares monitoring reports on the extent of implementation of G20 commitments in member countries (for the last one see FSB 2013). At the national level, information sharing with foreign authorities has been extended in the US and the EU. The authority of CFTC and ESMA or EC was also strengthened in some areas. But at the same time, government budgets have been cut in the context of broader austerity policies which may contradict these efforts. As the recent budget debate over the CFTC demonstrated, sufficiency of resources to carry out supervisory and regulatory duties cannot be taken for granted. Yet, without those resources regulatory authorities may not be able to prevent violations of commodity market statutes. At the EU level, ESMA is in charge of regulating financial markets and coordinating regulations among member state authorities. For 2013 it is expected to increase its staff by 60 % to 160, a positive development given its challenging tasks (ESMA 2012).

Hence, national and regional (EU) regulatory institutions need to have sufficient budgetary, technical and human resources to enforce and supervise commodity market regulations and to be able to cooperate with foreign authorities. At the international level, there exists FSB and IOSCO that monitor and also implement G20 commitments – insofar as they can be implemented on a multilateral basis. However, they work in isolation from the UN system. Either their competences would need to be extended and linked to the UN system or a new global regulatory authority would need to be created in the context of the UN that oversees commodity derivative markets and trading at the global level and coordinates regulations at the regional and national level. Given the global character of commodity derivative trading and that some contracts involve the jurisdiction of regulatory authorities in different countries, close cooperation between national regulatory authorities is necessary to prevent regulatory arbitrage among jurisdictions. In a further step, the global authority could propose a step-wise harmonization of national regulations or at least global minimum standards. The final objective would be a global oversight authority with certain regulatory and supervisory competencies.

4. Conclusions

When assessing current and identifying further commodity derivative market reforms, the primary functions of commodity derivative markets for the real economy and hence for commercial traders have to be taken as a benchmark. Developments in financial markets in the last 30 years more generally have shown that the dominant deregulation policies have often not ensured these functions but instead relegated them. Deregulation has often led to a proliferation of financial instability and crisis, a concentration of market power in the hands of large financial actors, complex and intransparent market structures, and a domination of short term trading interests over long term investment and real economic activity. Concerning commodity derivative markets, recent research at ÖFSE at least questions to which extent commodity derivative markets still fulfill their fundamental economic roles of price discovery and hedging price risks for commercial traders in the context of the financialisation of these markets (see Ederer et al. 2013; Heumesser/Staritz 2013).

In this context, important regulatory initiatives concerning commodity derivative markets have been under way at the G20, the US and the EU level. The focus has been on improving transparency and reporting requirements, regulating OTC trade (including swap dealers), installing position limits and, to a lesser extent, strengthening regulatory authorities and international cooperation. However, these regulations have limitations, in particular in the form of important exemptions, which question their effectiveness. Position limits do for example not explicitly cover OTC trade in the EU and the coverage of OTC trade in the US is under threat. Commercial traders as a class are exempted from many requirements, which is particularly problematic given the increasingly difficult distinction in genuine hedging and speculative activities. In other areas, regulations were not even on the agenda, such as price stabilization instruments including a multi-tier FTT to restrict very short-term trading, volatility and large price swings and restrictions on certain trading strategies or actors such as index-based investments and technical/algorithmic trading. Only for HFT, EU proposals include explicit regulations while the CFTC only installed a sub-committee for discussions on defining and regulating HFT.

Based on the analysis above, the most important regulations that are currently missing or not clearly or explicitly stated involve the following areas: (i) reporting of all commodity derivative transactions for appropriately aggregated and dynamically adaptable classes of traders to regulatory authorities and the public; (ii) mandatory exchange trading with limited exemptions for commercial traders for genuine hedging activities and clearing and security requirements for all commodity derivative transactions; (iii) individual and aggregate position limits for all commodity derivative transactions with exemptions only for genuine hedging activities of commercial traders at the national and regional (EU) level; (iv) a multi-tier FTT to stabilize prices in phases of high volatility and discriminate against very short term trading strategies; (v) discrimination of harmful trading strategies such as index-replication, technical/algorithmic trading and HFT and/or certain actors such as pension funds through stricter position limits in situations where deemed as necessary; (vi) prohibition of proprietary trading by financial investors and commercial traders involved in hedging transactions for themselves and their clients; and (vii) sufficient resources for regulatory and supervisory authorities and development of a global regulatory authority embedded in the UN system with the final objective of globally harmonized and coordinated regulations.

A prerequisite for effective regulation is a pro-active, flexible and dynamic approach to regulation that reflects on the risks of failure and adapts regulations if necessary given the changing dynamics and complexities of markets and trading activities. Further, the classification of traders has to take into account the reality in commodity markets, in particular the multiple and interrelated role of financial and large commercial traders being involved in speculative activities, hedging and physical commodity trade. The increasing involvement of financial actors in physical commodities has been enabled by regulatory changes, in particular in the US, leading to limited oversight and potential systemic risk, conflicts of interest and manipulation. Transparency and oversight on the activities of financial actors in physical commodities as well as commercial traders in financial activities and regulations that restrict such multiple roles are required to prevent cross-market manipulation.

Besides regulations on commodity derivative markets discussed in this paper, also broader regulations will be required. First, regulation of commodity derivative markets has to be embedded in broader regulations of financial markets and bank supervision as commodity markets are only one of many investment options for financial investors. Reforms would not be complete without an assessment and understanding of how the recent developments in commodity markets and financial markets have interacted to exacerbate price fluctuations and instability in the global economy (Nissanke 2011). There is significant interconnectedness between commodity derivatives trading and trading in other financial markets (shares, bonds, currencies, structured loans, etc.) which also means that commodity derivatives markets pose systemic risks for other financial markets and vice versa. For

instance, a swift withdrawal from or entry into financial commodity products, can result in heavy buying or a sell-off in other financial markets (Vander Stichele 2012).

Second, in addition to the regulation of financial markets, broader reforms will be necessary to stabilize commodity prices and reduce vulnerability. For an important group of commercial traders commodity derivative markets tend to be a less effective way to cope with commodity price risks. Hence, additional arrangements to cope with commodity price instability at the international and local level would be needed. At the local level, such instruments could include local grain banks, warehouse receipt systems, insurance systems, the reintroduction of marketing boards or other price stabilization systems. In addition, mechanisms to create strategic stocks of and effectively manage physical inventories at the national and international level are important to avoid and protect from price volatility (Wiggins/Keats 2009; von Braun et al. 2009). Global and national counter-cyclical financing facilities would be also required to mitigate income-shocks from commodity price movements (Nissanke/Kuleshov 2012). Moreover, broader agricultural and industrial development strategies are crucial with the objective to reduce commodity import- and export dependency, secure food sovereignty and diversify economies.

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