

# COMMODITY PRICES, FINANCIAL MARKETS AND DEVELOPMENT<sup>1</sup>

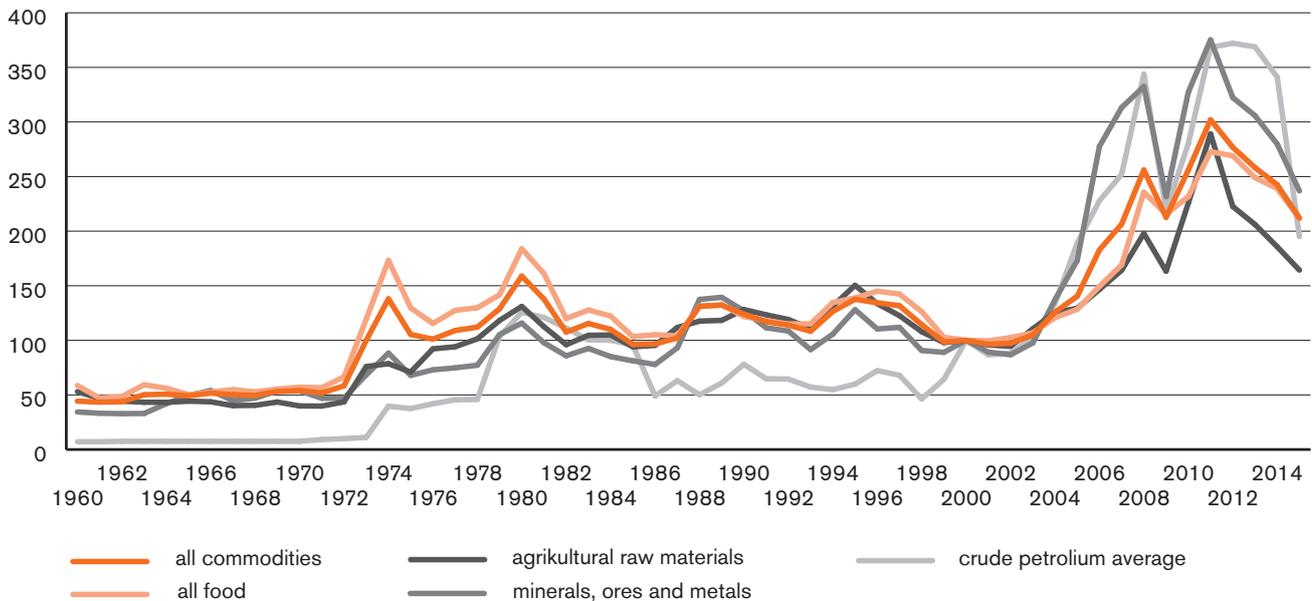
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## INTRODUCTION

The recent commodity price boom in combination with high price volatility is historically unprecedented even in the volatile price history of commodities. After nearly three decades of low commodity prices, many commodities have experienced a price boom since the early-2000s reach-

ing peaks in mid-2008, mid-2011 and the second half of 2012. More recently, prices particularly of oil and minerals have declined again; agriculture price remain above their historical levels. High volatility has always been a characteristic of commodity prices but the amplitudes and speed of price changes has increased in the 2000s (Figure 1).

**Figure 1: Development of Selected Commodity Price Indices (nominal, 2000=100)**



Source: UNCTADStat.

Commodity prices have crucial implications, in particular for developing countries that are often dependent on the import and export of commodities. Many developing countries import basic commodities such as food and fuel. Thus commodity prices have direct effects on food and energy security, poverty, economic development and stability. Many developing countries, particularly in Sub-Saharan Africa (SSA) are also dependent on the export of a few commodities. They benefit from rising revenues when commodity prices are high. But they are also affected by price volatility, which leads to major difficulties for local actors who often cannot access price risk management

and for managing economies as macroeconomic indicators (i.e. trade and fiscal balance, inflation, interest rates) are strongly affected by commodity price volatility.

An understanding of commodity prices and their determinants are therefore important for economic and social development. The questions which factors drive commodity prices, how price volatilities can be prevented, and how local actors in developing countries are affected by these price developments have become central in international and domestic policy debates. There are several factors influencing commodity price dynamics, including funda-

mental demand and supply factors and macroeconomic developments. However, in the last years fundamentals did not seem to explain the severity of price movements.

Hence, more attention has been given to the role of commodity derivative markets. Those markets have developed to the central pricing mechanism for international commodity trade in particular given the dismantling of price stabilization systems in many producer countries. Trading on these markets has changed dramatically related to deregulation of commodity derivative markets and to the increasing importance of financial investors such as banks, institutional investors and hedge funds, a phenomenon which has been labeled as the financialisation of commodity markets (Domanski/Heath 2007).

This article discusses (i) major changes in commodity markets with a focus on financialisation of these markets, (ii) the results from recent ÖFSE research on price setting in commodity derivative markets and implications in SSA commodity producer countries with a focus on the cotton sector in Burkina Faso and Mozambique and the coffee sector in Ethiopia, and (iii) policy reforms to reduce excessive speculation and stabilize commodity prices.

## MAJOR CHANGES IN COMMODITY MARKETS

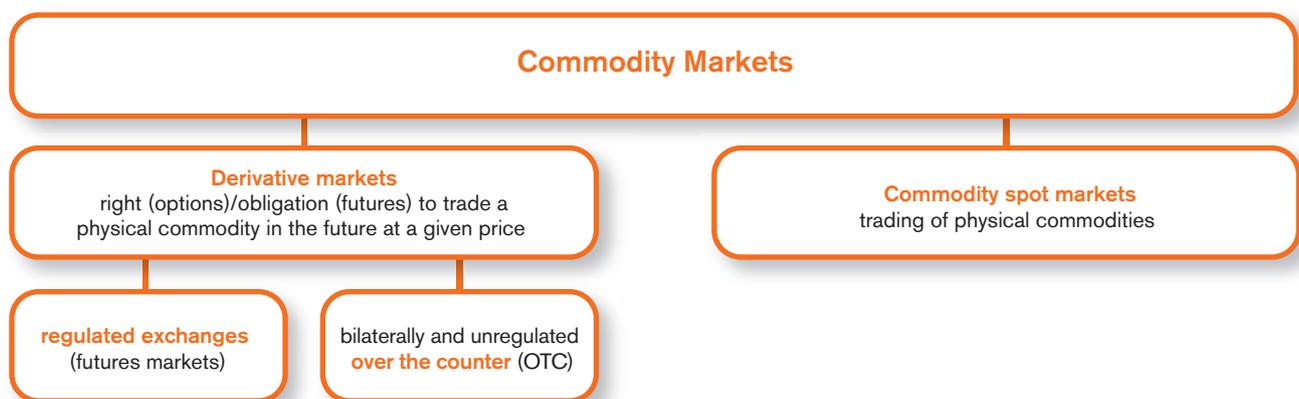
Commodity prices are determined by fundamental supply and demand conditions and by macroeconomic developments which have experienced important structural changes in the last decade. The most widely cited factors are: (i) the rapid growth in demand for commodi-

ties from emerging countries, (ii) alternative uses of agriculture commodities for energy production (biofuels), (iii) a reduction in supply due to supply constraints and low productivity related to low investments in the previous two decades, (iv) weather-related supply shocks that are becoming more dramatic due to climate change, (v) low interest rates and the depreciating US Dollar (see Ederer/Heumesser/Staritz 2013).

Simultaneously to these fundamental and macroeconomic developments, trading activities on commodity derivative markets have undergone major changes related to deregulation of commodity derivative markets and a dramatic increase in the size of and in the share of traders from outside physical commodity markets, especially financial investors.

Commodities are traded on commodity spot markets where physical commodities are exchanged between actual producers and consumers and on derivative markets where derivative contracts are traded that give holders the right („options“) or the obligation („futures“) to trade a physical commodity in the future at a given price. Commodity derivatives can be traded on regulated exchanges (also called futures markets) or bilaterally and unregulated over the counter (OTC) (Figure 2). Usually, traders on derivative markets do not physically receive commodities as contracts are either written this way (cash settled contracts) or contracts are cancelled out by purchasing the opposite contract close to expiry date. The profit or loss of the traders arises from the price difference when the contract is made and the market price when the derivatives are due. Although there exist around fifty major commodity exchanges, trading is concentrated in the US (particularly Chicago and New York) and Europe (particularly London).<sup>2</sup>

Figure 2: Commodity Markets



Source: Authors.

## FUNCTIONS OF COMMODITY DERIVATIVE MARKETS

Commodity futures markets provide two important functions for physical commodity traders: First, the price discovery function as trading on futures markets enables the open-market discovery of commodity prices that are used as a benchmark for spot transactions. Spot markets of commodities are often geographically dispersed because commodities are bulky and costly to transport and the prices in these markets can vary substantially. Centralized futures markets are accepted as the best indicator for overall supply and demand conditions across spot markets and are generally used as a reference in contracts between physical traders. Second, commodity futures markets offer an insurance function as those markets enable spot market participants to hedge against the risk of price fluctuations.<sup>3</sup> In the 1950s and 1960s instruments that emphasized the stabilization of prices and export earnings such as buffer stocks and export quota in the context of International Commodity Agreements (ICAs) and national commodity boards had prominent roles in dealing with price risks of commodities.<sup>4</sup> These institutions were largely dismantled in the 1980s and 1990s in the context of Structural Adjustment Programs (SAPs) and commodity derivative markets have been promoted as the central risk management tool in particular for producers and governments in developing countries (World Bank 2011; Nissanke 2011).

Traditional actors on commodity derivative markets are commercial traders, i.e. producers, consumers and traders of physical commodities that use these markets for price discovery and hedging against the risk of price fluctuations, and non-commercial traders, referred to as speculators. Non-commercials do not have an underlying physical commodity position but take over the price exposure from hedgers and hope to profit from changes in futures prices. These speculators provide an essential function as they accept price risks in exchange for providing liquidity by actively trading in futures. Until recently, speculators on commodity future markets were dominated by experts of physical markets whose activities were closely linked to the fundamental supply and demand dynamics in the underlying physical markets (Masters/White 2008).

## CHANGING TRADER COMPOSITION ON COMMODITY DERIVATIVE MARKETS

In the context of liberalization and deregulation of commodity derivative trading and the search for new investment opportunities after the dot-com crisis in 2000/01 and the global financial crisis in 2008/09, a specific category among non-commercials – financial investors – has become important on commodity future markets. This category comprises in particular banks, institutional investors and hedge funds that invest in commodities as an asset class – similar to stocks, bonds and real estate assets (UNCTAD 2011). The trading volumes on commodity futures exchanges and OTC markets, notably from financial investors have substantially increased and a range of new commodity investment products, in particular commodity index funds and exchange traded funds (ETFs), have been developed to facilitate investment in commodities. Funds from financial investors in commodity futures markets have increased from US \$ 13 billion in 2003 to US \$ 430 billion in early 2013 (Barclays Capital 2013).

The US Commodity Traders Futures Commission (CFTC) classifies traders in five categories: commercial traders, swap dealers, money managers, other reportables and non-reportables. Financial investors are typically divided in swap dealers (which to a large part represent index investors in agriculture markets) and money managers. Swap dealers/index investors are mostly institutional investors such as pension funds, sovereign wealth funds, public and private foundations and life insurance companies that pursue a longer-term and passive investment strategy, using commodity indices or ETFs. They bet on increasing prices, investing in long futures contracts of a range of commodities, irrespective of specific commodity market conditions. They may push commodity prices up given their large price-insensitive involvement on one side of the market.

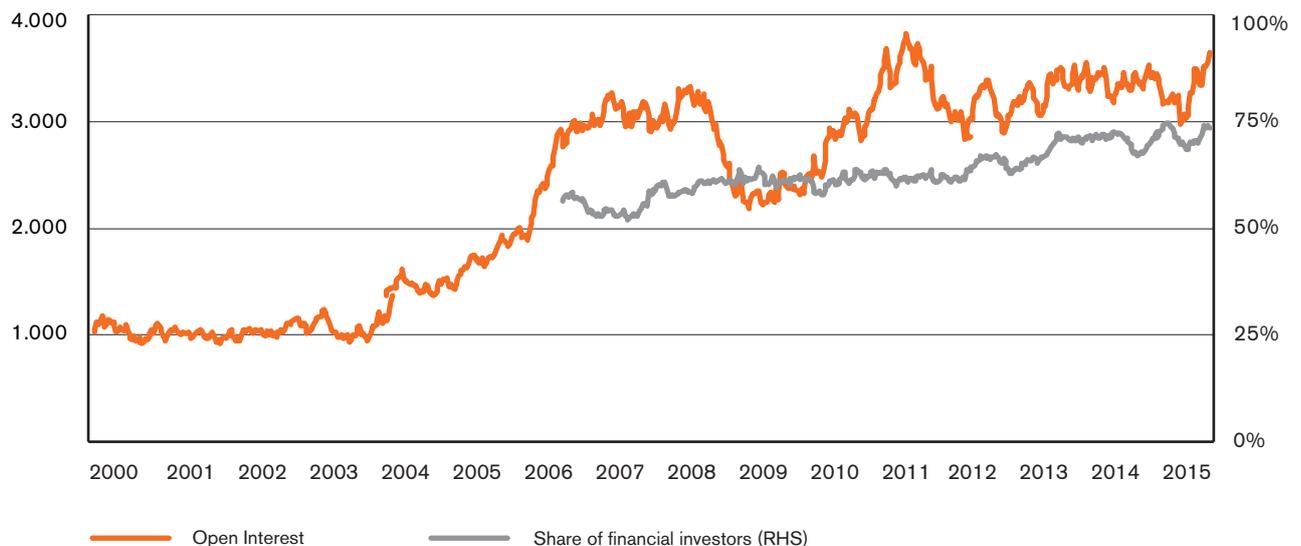
Money managers, such as hedge funds, commodity trading advisors (CTAs), proprietary trading desks of banks or investment firms, and institutional investors, pursue shorter-term, more active and both long and short trading strategies betting on increasing and declining prices. Even though a range of traditional CTAs also employ discretionary strategies based on fundamental factors or mixed strategies, money managers' strategies are largely based on computerized technical trading that try to exploit price trends rather than fundamental-related information. The class of money managers also includes high frequency traders (HFT) which establish and liquidate positions very quickly, typically

within nanoseconds. These trading strategies might accelerate commodity price swings and volatility.

Open interest positions held by traders in oil, wheat and corn futures contracts has increased significantly since 2000 with a large decline however in the context of the

global economic and financial crisis in 2008/09. The share of financial investors (swap dealers and money managers) has increased since 2006 (where reporting on disaggregated trader classes started<sup>5</sup>) accounting on average for the three commodities for above 70 % in 2015 (Figure 3).

**Figure 3: Open interest and share of financial investors in oil, wheat and corn contracts**



Note: Combined open interest of WTI crude (C1), wheat (W1) and corn (C1) futures (in '000 contracts); share of non-commercial traders plus swap dealers as average share in long and short positions.

Source: CFTC.

## RESULTS FROM RECENT ÖFSE RESEARCH

In the context of the research project „Financial Markets and the Commodity Price Boom“, ÖFSE conducted research on the question whether and to which extent the financialisation of commodity markets has affected commodity prices and has changed the functioning of commodity derivative markets and what are the implications for commodity-dependent developing countries in SSA.

The first research phase involved quantitative econometric analysis as well as interviews with actors on commodity derivative markets.<sup>6</sup> The analysis has been performed for five commodities: coffee, cotton, (hard red and soft red winter) wheat, crude oil (WTI and Brent) and aluminium. Results of

both approaches have generally supported the financialisation hypothesis which states that the increasing role of financial investors in commodity derivative markets has, in addition to fundamental and macroeconomic factors, had effects on commodity prices and market structure. Hence, the research questions to which extent commodity derivative markets still fulfill their economic roles of price discovery and risks management for commercial traders.

In the second research phase, field work was conducted in three commodity dependent SSA countries that are also priority countries of the Austrian Development Cooperation – Burkina Faso, Ethiopia and Mozambique.<sup>7</sup> These

countries are dependent on production and export of different types of commodities with Burkina Faso focusing on cotton and recently also gold, Ethiopia on coffee and oil seeds, and Mozambique on aluminium but also agricultural crops such as cotton. The focus of the analysis was the export commodities cotton and coffee. Results show that commodity derivative markets have become increasingly important for price setting in producer countries with price volatility and short termism being transmitted to producers. The effects on producers depend however on the specific market structure and price setting mechanism in producer countries.

### QUANTITATIVE ANALYSIS ON PRICES IN COMMODITY DERIVATIVE MARKETS

Empirical studies on the effect of financial investors on commodity prices have focused on index investors. They come to different results but the majority cannot confirm a broadly consistent effect of index investors on commodity prices. In our analysis, we assessed the effect of financial investors on commodity prices for the period June 2006 to October 2012 within a multivariate vector autoregressive model framework. As a variable for financialisation we use net long positions, taking into account that trading strategies can push prices up and down. In contrast to most studies, we take into account the potential effect of financialisation in addition to fundamental and macroeconomic factors<sup>9</sup> on commodity prices. Further, we investigated not only the effect of index investors but also that of money managers and their more active and short-term, largely technical and trend following trading strategies. This is particularly important given their increasing prominence in recent years.

Results indicate that there is a significant impact of money managers' net long positions on commodity prices for all commodities (except one type of crude oil) and show that between 10 % and 50 % of the variation in prices can be explained by net long positions of money managers. However, we cannot confirm an effect of swap dealers'/index investors' positions on commodity returns. Overall, our results suggest that the controversially discussed hypothesis of financialisation of commodity derivatives markets can be supported. However the results have to be interpreted with caution, in particular as classes of traders are not homogenous and the relationships between different types of traders are complex. To capture this complexity, we also pursued qualitative analysis.

### QUALITATIVE ANALYSIS ON MICROSTRUCTURE OF COMMODITY DERIVATIVE MARKETS

Our analysis builds on semi-structured interviews with different types of market participants and stakeholders<sup>9</sup> and on a range of non-scientific documents (e.g. financial press and traders' or stakeholders' blog entries). Results show that financial investors have played an increasing and often dominating role in commodity derivative markets since the early 2000s. This has changed the nature and microstructure of these markets. The most important trends in the last decade can be summarized as (i) strongly increasing trading volumes and open interest positions with an increasing share of financial investors; (ii) largely extended trading hours and increased speed related to electronic trading and technological improvements; (iii) increasing variety of investment products and strategies with a trend from passive to active strategies; (iv) lack of transparency on and oversimplification of classes of traders given the multiple roles of financial investors and large commercial traders; and (v) intensifying interconnectedness between financial and commodity markets.

The crucial question is how these trends have impacted on commodity price developments, market structure and particularly on commercial traders that use these markets for price discovery and hedging. First, it has to be stated that the classification of traders and interactions among traders with different motives are complex given their multiple and interrelated role. On the one hand, financial investors, particularly investment banks and hedge funds, have become involved in trading physical commodities. Commercial traders, on the other hand, are very heterogeneous and range from producers and cooperatives to large multinational commodity companies, trading houses and supermarkets to governments. Large multilateral commodity companies and trading houses are not only involved in hedging but increasingly also in speculative trading activities, using similar trading systems as investment banks and hedge funds or establishing separate financial services units or hedge funds.<sup>10</sup>

Concerning price developments, the majority of our interviewees state that long term price trends are largely based on fundamental supply and demand conditions. However, trading strategies of financial investors with little interest in fundamentals are widely believed to increase the likelihood of excessive commodity price fluctuations in the short term. In particular money managers have been pointed out as having a potentially distorting effect

on short term price developments. Also the increasing importance of macro data and financial market information in trading decisions has been pointed out, supporting an increasing co-movement between financial and commodity markets. Hence, the effectiveness of the price discovery function of commodity derivative markets for storage, production, investment and consumption decisions can at least be questioned in the context of insecurity about the price formation process and to what extent prices are largely determined by fundamental conditions particularly in the short term.

The interview results indicate that commercial traders typically take into account the presence and strategies of financial investors in their own trading behavior. They adapt their strategies to what index investors and money managers are doing as otherwise they may position themselves „against the market“. In this respect trading has become more complex as it requires monitoring the trading strategies of other actors. The impact of financial investors on commercial traders is however quite different for large commodity companies or trading houses and for smaller commercial traders, associations, producers and their brokers. Larger commercial traders tend not to be too concerned with the increasing presence of financial investors; they even can profit from their trading behaviour. For smaller commercial traders which do not have the resources and capacities to interact actively with derivative markets, hedging has always been a difficult instrument<sup>11</sup> and recent changes seem to have increased the complexity, costs and risks of hedging. Smaller commercial traders interviewed have particularly complained about the increasing short termism of trading and the related short term volatility of commodity prices which increases financial requirements and risks.

## HOW ARE COMMODITY EXPORTING COUNTRIES AFFECTED?

Cotton and coffee are the most important cash crops in SSA and have had an important role in job creation, poverty reduction and foreign exchange generation. Cotton is the number one export cash crop and coffee the number two accounting for 10,5 % and 8,9 % of total SSA agricultural exports in 2013 respectively. Millions of small holder farmers and rural households depend on cotton and coffee for their livelihood with developments in the sectors playing crucial roles in poverty reduction. Burkina Faso is the top 1 SSA cotton exporter while Mozambique ranks

top 8. Ethiopia is the top 1 SSA coffee exporter. A key challenge for SSA cotton and coffee producers is how to deal with volatile international prices. Price volatility is a main reason for farmers to shift away from cotton and coffee, making production unsustainable.

For the global price of cotton and coffee, commodity futures markets play a crucial role. For cotton, there is one major cotton futures and options contract, which is traded at the Intercontinental Exchange (ICE) in New York.<sup>12</sup> For Arabica coffee, ICE Coffee C futures serve as a global benchmark.<sup>13</sup> The rise of importance of futures markets in price setting is related to the dismantling of national price stabilisation systems in many producer countries as well as to the trading practices of international traders that buy the large majority of cotton and coffee from SSA. International traders increasingly prefer using futures prices as a reference in physical contracts as they use derivative markets for hedging. This has bound together futures prices with producer prices on the ground (Newman 2009).

Interviews with local actors in the cotton sector in Burkina Faso and Mozambique and the coffee sector in Ethiopia<sup>14</sup> confirm that price instability is a central concern particularly for small holder farmers but also for local processors (in the case of cotton ginners<sup>15</sup>). This problem has particularly intensified in the context of recent high price volatility and increased short-termism and speed of price changes at commodity derivative markets with intra-day volatility being a new phenomenon in cotton and coffee markets. The extent to which volatile international futures prices are transmitted to farmers depends however on the national market and price setting structure. Inter-seasonal price instability is a reality in all three market structures as national prices are based on and increasingly aligned to global prices with producers bearing the brunt of price instability and risk between seasons. There are however differences concerning within seasonal price volatility. In contrast to most other commodities and countries, in the cotton sectors in Burkina Faso and Mozambique there exist systems of national producer price stabilisation.<sup>16</sup> Prices fluctuate between seasons but for a season fixed producer prices are negotiated in tripartite structures between farmers, ginners and the government based on a formula linked to global prices. This protects farmers from intra-seasonal price volatility. In contrast, in Tanzania, the most liberalized cotton sector in SSA, price fluctuations within the season are also transmitted directly to producers.<sup>17</sup>

The price systems in Burkina Faso and Mozambique are different concerning the share of farmers' prices in export prices. The system in Burkina Faso secures stable and relatively high prices to farmers compared to Mozambique where the share of the price going to farmers is comparably low among SSA cotton producers.<sup>18</sup> In Burkina Faso farmers are paid a floor price at the delivery of cotton to ginneries and a potential premium at the end of the season if the realized export price is above the floor price. A further unique feature is the existence of a smoothing fund. Ginneries have to pay a fixed price to the producers, but they sell to international traders that use global prices as a benchmark – they hence bear the price risk during the season. The fund compensates ginneries partly if export prices during the season drop below national producer prices. While the price system in Mozambique also secures minimum producer prices the share of world prices going to farmers is comparatively low. Hence, the precise mechanisms of price stabilization are crucial to ensure stable prices and high shares for farmers.

In Ethiopia, coffee trade is characterized by strong national regulation that aims at a transparent national trading system. A milestone was the introduction of the Ethiopian Commodity Exchange (ECX) in 2008 as a secondary trading market.<sup>19</sup> Prices on ECX are highly related to ICE futures with global price volatility being transmitted through the exchange to local processors and farmers, leading to price fluctuations between and within seasons. Local processors have to sell through ECX to exporters and are paid linked to ICE futures prices. They buy from farmers based on their sales prices deducting margins, processing and transport costs. Farmers bear the majority of the price risk as local processors and exporters can transfer export price volatility to farmers. There are no tools available for farmers or farmers' groups to manage these risks. There is however limited price inequality in the Ethiopian coffee sector given the role of the exchange in making prices transparent and the institutional structure of primary transaction centres that local processors have to use to buy from farmers.

Although futures prices are used as a benchmark for local prices in all market structures, local actors do not use derivative markets for risk management. For farmers and farmers' groups as well as local processors this is too costly, risky and complex, particularly given the increased speed and complexity of trading in the context of financialisation. Further, it requires access to financial resources and brokerage services. Even Burkina Faso's Sofitex,

the largest state-owned cotton company in SSA, does not use futures or options as hedging is seen as complicated and expensive and not as their business. Only processors affiliated to international traders hedge most of their trades through their head quarters which have specialized financial units. Farmers have largely no alternative price risk management options available other than adapting their production volumes from season to season. Larger exporters can sell through fixed-price forward contracts to international traders – an option that smaller exporters do often not have as they cannot guarantee delivery.

## WHICH POLICIES ARE NEEDED?

Our results indicate that the financialisation of commodity markets undermines the fundamental functions of commodity derivative markets. This is even more problematic given that national prices in producer countries are increasingly linked to commodity derivative markets. Price volatility and short-terminism are major concerns for local actors. Our research shows that uneven exposure to price instability and access to price risk management have important distributional implications. Whilst international traders have the capacity to deal with price risks through hedging in addition to expanding their profit possibilities through pursuing financial trading strategies and providing financial services on commodity derivative markets, local actors in producer countries face the challenge of price instability and increased short-terminism with very limited access to risk management (see also Newman 2009). In light of this, policy reforms are necessary at two levels – on commodity derivative markets to reduce excessive speculation and stabilize commodity prices, and in producer countries in the form of national price stabilization schemes to ensure fair and stable prices for producers.

## COMMODITY DERIVATIVE MARKETS

In the context of the global economic crisis, a political consensus emerged within the G20 and other countries on the necessity of reforms to reduce excessive speculation. In this context, important regulatory initiatives have been under way in the US in the context of the Dodd-Frank Financial Reform Act. In the EU, legislative instruments have been revised and new regulations have been introduced since 2009, influenced by the G20 commitments and modeled on the US reforms. The two most important legislative acts are the European Market Infrastruc-

ture Regulation (EMIR), adopted in August 2012, and the Markets for Financial Instruments Directive/Regulation (MIFID II/MIFIR) that entered into force in July 2014, and will be applicable starting January 2017 (EC 2014). The former regulates OTC derivative markets while the latter applies to all financial instruments traded on exchanges and other platforms.<sup>20</sup>

EU legislation includes important measures in respect to (i) improving transparency and reporting, in particular concerning the previously largely unregulated OTC markets, (ii) limiting market power through the installation of position limits, and (iii) strengthening regulatory authorities. Regarding position limits, it is the first time that the EU limits the maximum size of a position that traders can hold which is an important step to prevent market abuse and manipulation. However, these regulations have limitations, in particular in the form of important exemptions. For example for position limits, limits are only applicable to individual traders and not to classes of traders which would be important to reduce the influence of certain types of traders and avoid circumvention by splitting into different entities. Further, it is not secured that position limits cover all trading platforms, including OTC trade (WDM 2011; Vander Stichele 2012; Henn 2014).<sup>21</sup> A general problem is that commercial traders are exempted from many requirements, which is particularly problematic given the increasingly difficult distinction between genuine hedging and speculative activities. Moreover, if those regulations will be effective depends to a large extent on the implementation rules that are discussed in 2015/16 and may lead to watering down potentially positive regulations.<sup>22</sup>

A main problem with EU reforms is, however, that more interventionist regulations that address the fundamental problems of commodity derivative markets and limit the dominance of financial investors were only marginally addressed. These would include measures to stabilize commodity prices, the restriction of certain kinds of trading strategies, and taking into account the multiple and interrelated roles of large commercial traders and financial investors. A multi-tier financial transaction tax (FTT) to stabilize prices in phases of high volatility and discriminate against very short term trading strategies would be useful.<sup>23</sup> The negative effects of certain trading strategies such as index-replication, technical/algorithmic trading and HFT<sup>24</sup> could be restricted by setting tighter position limits for individual traders and trader classes or demanding higher security requirements (i.e. capital and margin requirements). Given the multiple and blurring roles of

large commercial and financial traders, rules that differ between those two types of traders do not capture the actual complexity of trading.

## PRICE STABILIZATION IN PRODUCER COUNTRIES

Reforms beyond commodity derivative markets will be also necessary to stabilize commodity prices, reduce vulnerability and provide price risk management instruments for local actors. This is of particular importance as our research shows that recent changes in commodity derivative markets have led to price volatility and increased short-terminism on the one side but on the other side these markets are not an effective way to cope with commodity price risks for an important group of physical traders and particularly local actors in developing countries. For the latter these markets are an ineffective instrument that should not be promoted to farmers and other local actors as has been the case by some international organisations. In contrast to market-based measures, price stabilization schemes at the national or regional level could be coupled with international counter-cyclical financing facilities to mitigate income shocks from commodity price movements and ensure the financing of price stabilization schemes.

Price stabilization schemes at the national or regional level through pan-seasonal and pan-regional fixed producer prices are a useful instrument to cushion price risks for producers. Through regional stabilization funds, the management of these funds could be made more professional and less influenced by national political considerations and bargaining power vis-a-vis international traders and potential financiers could be increased. A good example is the price system in Burkina Faso that ensures price stability for farmers throughout the season but also a high share of world prices (through a potential post-season premium), and provides a smoothing fund to cope at least partly with the price risk accrued to local processors/exporters. The commodity exchange in Ethiopia provides important functions for coffee farmers such as price transparency but does not cover one of their main concerns – price instability. It could be extended in this regard by using the institutional structure to include price stabilization – in the form of forward contracts for farmers' groups and local processors or through institutional price negotiations. An important prerequisite for price negotiations is tripartite institutional structures and, specifically, strong and independent farmers' associations. This is challeng-

ing given the asymmetric power structures between small holder farmers and local processors and exporters, and particularly international traders that have much broader access to information, markets and resources.

A main challenge of national and regional price stabilization funds is securing financing, particularly in the context of longer low-price periods as has been the case for cotton between 1999 and 2006 and in recent years and for coffee from 2000 to 2004. Hence, stabilization funds could be coupled with the introduction of international counter-cyclical financing facilities to mitigate income shocks from commodity price movements. Such a facility could ensure the financing of national price stabilization schemes and broader policy space for counter-cyclical macroeconomic policy. The argument behind such a facility is that commodity price movements are exogenous shocks or systemic risks stemming from external events which are not under control of the commodity dependent developing country. For such a facility to be effective it needs to be countercyclical – e.g. through fast disbursements of resources, no pro-cyclical policy conditionalities, and high concessionary elements (Griffith Jones/Ocampo 2007; Nissanke 2011; Nissanke/Kuleshov 2012).

Ultimately, developing countries need to reduce their dependence on commodities and diversify their economies not only to deal with price instability and external vulnerability but to secure structural transformation to higher value added activities, better jobs and sustained growth. An important opportunity is productive linkages from commodity sectors to other sectors (Morris et al. 2012). This involves forward linkages to processing – spinning, weaving and apparel production in the case of cotton and roasting in the case of coffee with important potential for value addition and employment generation. Textile and apparel or processed coffee products could be geared towards global but also domestic and regional markets. But also backward linkages provide diversification possibilities in terms of input provision including pesticides, fertilisers, equipment and different services from IT to transport. Currently, linkages are however limited in all three countries with the majority of exports being of unprocessed nature and imports being imported. For diversification and commodity based industrial development, price stabilization is an important prerequisite but in addition, it requires a broad set of industrial policies and capacities in the public and private sector and sufficient policy space.

- 1 This article is an outcome of the ÖFSE research project „Financial Markets and the Commodity Price Boom” supported by funds of the Jubiläumsfonds of the Oesterreichische Nationalbank (project number 14686). For more information see <http://www.oefse.at/forschung/rohstoffe-und-entwicklung/>
- 2 Besides these markets, particularly China and India have gained in importance in recent years with their emergence as significant commodity consumers and producers (Staritz 2012).
- 3 For instance, a producer of wheat can sell futures contracts according to the amount of the expected harvest today which secures today's price for wheat while a consumer of wheat can buy futures contracts to secure input costs.
- 4 Alongside, the Compensatory Financing Facility of the IMF and the STABEX scheme of the EC were in place to ameliorate the adverse effects of commodity export instability (Newman 2009).
- 5 Before 2006, only data for commercial and non-commercial traders is reported. But swap dealers are included in commercial traders as they hedge financial positions for index investors (compared to "real commercials" that hedge physical positions) (for details see Heumesser/Staritz 2013).
- 6 For a detailed overview of results of this research phase, see Ederer/Heumesser/Staritz (2013) and Heumesser/Staritz (2013).
- 7 For a detailed overview of results of this research phase, see Tröster/Staritz (2015), Staritz et al. (2015) and Staritz/Tröster (2015).
- 8 Including global commodity production and exports, global industrial demand, the US real exchange and interest rate, a stock market index and the oil price.
- 9 We interviewed 17 commercial traders, 11 financial investors (including banks, hedge funds and CTAs), 3 brokers, 3 representatives of commodity exchanges, 16 commodity market experts (including representatives of commodity associations, analysts and researchers), and 2 financial market experts in London, New York, Washington, Vienna and over telephone between October 2012 and March 2013.
- 10 Further, there are complex interactions among traders; in particular if certain trader classes and trading strategies dominate, other traders must respond to their behaviour as „leaning against the market” can be expensive.
- 11 Particularly related to access to information, high transaction and financial costs, high technical barriers and limited access to finance.
- 12 For cotton prices also the Cotlook A Index is of importance. It is compiled daily by Cotton Outlook, a private company in Liverpool, by collecting quotations from cotton traders. The Cotlook A Index and ICE futures prices are highly correlated as traders take into account ICE closing prices for their quotations.
- 13 There are two types of coffees – Arabica and Robusta. For the latter prices are related to contracts (RC) at the London International Financial Futures and Options Exchange (LIFFE). Ethiopia exports Arabica coffee.

- 14 In Burkina Faso and Mozambique, we conducted interviews with 7 ginners, 2 spinners, 2 input providers, farmers' unions and ginners' associations. In Ethiopia, the commodity exchange, 6 exporters, 1 roaster, 2 cooperatives and 1 international coffee trader were interviewed. We also interviewed representatives of the Ministries of Trade and Agriculture and of international institutions and local researchers and experts during the fieldwork between September and November 2014.
- 15 Seed cotton from farmers has to be ginned where cotton lint is separated from cotton seed before it can be exported.
- 16 In regional concession systems ginners have to buy cotton from farmers in a particular region and have to provide inputs to them before planting. Farmers, in turn, have to sell all their cotton to the ginner.
- 17 In Burkina Faso, prices are fixed before the season. In Mozambique, there are two price fixing meetings – one before the season and one before marketing starts where prices may be changed. However, so far, there has not been a downward price revision. In Tanzania, there is an indicative price which is however not binding – but still widely abided by ginners – and only announced before marketing and subject to changes.
- 18 Regarding price stabilization mechanism, different opinions exist on the fairness of how the shares going to farmers and ginners are negotiated. This is particularly problematic as cotton companies are to an important part owned by international traders in Burkina Faso and Mozambique. This issue of power asymmetries between farmers and ginners and even more international traders exists however also in systems where ginners negotiate prices market-based directly with individual farmers or farmers' groups.
- 19 Small holder farmers sell at primary transaction centres to local processors that collect the coffee beans and process them to green beans (through washing or pulping). Green beans are traded at the ECX.
- 20 For more details, see Staritz/Küblböck (2013) and Küblböck/Staritz (2014).
- 21 Currently the formulation is economically adequate OTC-trade which leaves room for interpretation for ESMA.
- 22 MiFID II/MiFIR contains almost 100 requirements for ESMA to draft Regulatory Technical Standards and Implementing Technical Standards, and to provide Technical Advice to the European Commission.
- 23 A FTT could be adaptable to different market conditions. The very small permanent tax rate of around 0.001 or 0.1 % under normal tranquil conditions would not impede fundamental market developments and price discovery. But if market volatility becomes excessive with large short-term fluctuations beyond a dynamic price band defined on the basis of commodity specific fundamentals, a much higher tax rate of 50 % to 80 % would automatically kick in acting as a circuit breaker (Schulmeister 2009, 2012; Nissanke 2011). The introduction of a FTT is currently discussed in 11 EU member states in the procedure of "enhanced cooperation". Discussions have been taken up in 2015 under coordination of the Austrian Finance Ministry and implementation is currently foreseen in 2016. However, important details such as the inclusion of derivatives are still not clear (Larcher/Wahl 2015).
- 24 Only for HFT the EU agreed on explicit regulations.

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