Recent Development in commodity Markets: Excess Volatility and Development Impacts

by

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"The views expressed are those of the author and do not necessarily reflect the views of UNCTAD"
Recent Development in Commodity Markets: Excess Volatility and Development Impacts

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The Recent Development in Commodity Markets: Causes and Implications

Index of primary commodity prices, Jan 2005-Oct 2011 (2005=100)

Price Indices by Three Major Commodity Groups

**GDP growth rates of major global regions, 2005-2012 (%)**

![GDP growth rates chart](chart1.png)

**Annual average growth rates of exports value by regions (%)**

![Exports growth rates chart](chart2.png)

**Price Forecasts by the World Bank**

**Table C.3 Key nominal annual price indices—actual and forecasts (2006-2016)**

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**Development in Oil Markets**

**Figure C.3: Oil prices and OECD oil stocks.**

![Oil prices chart](chart3.png)

**Figure C.4: World oil demand growth (y-y).**

![World oil demand chart](chart4.png)
Development in Oil Markets

Metal Price Dynamics

“China” Factor in Metal Price Dynamics

Price Dynamics of Agricultural Commodities
What is likely effects of the Sovereign Crisis on commodity Markets?

- Whether or not commodity prices would have a soft landing as the WB study predicts or would have a hard crash?
- Dependent on interplay of two forces:
  - demand-supply market fundamentals: through effects on growth of the global economy and world trade, in particular effects on Emerging Market Economies
  - Financialisation of commodity markets: through effects on balance sheets of Financial Institutions and investors. This would change parameters affecting their market sentiment, expectation formation, the degree of their risk aversion and liquidity preferences

My main hypothesis: a significant portion of the closely synchronised price dynamics in commodity and financial markets is explained by market liquidity cycles in global finance, as financial investors manage their portfolio at ease through 'virtual' stock holdings of commodities in derivatives dealings and markets (Nissanka, 2011 and 2012).

Factors behind the unprecedented price swings: a story of market fundamentals

- Commodity boom in 2002-8 – an entering into a super price cycle?
- The shifts in fundamental demand-supply relationships - a key factor for price movements for commodities over medium term
- The Asian Driver story on the demand side across commodities (mineral, oil and agricultural raw materials and products;)
- supply constraints due to subdued investment in the low price periods of the 1980s and 1990s;
- Low inventories at the time of price surge for minerals and agricultural commodities;
- The high correlation between minerals, and agricultural vs energy prices - close interlinks on real sides
- Higher food prices from the abrupt shift in arable land use from food crops towards bio-fuel crops and increased vulnerability to climate changes (the Climate-change effect);
- Neglected agricultural sectors, resulting in low investment in agricultural technology and supporting infrastructures in low income countries with high dependence on imported food, leading to acute food crisis.
Question Over Excess Co-Movements in Commodity

Q: The large swing and synchronised commodity boom-bust cycle since 2002 can be explained exclusively by structural shifts in commodity market fundamentals?

Q: The excess co-movement hypothesis advanced by Pindyck and Rotemberg (1990) - an influence of speculation on stock levels?

Q: Is it influenced by the "liquidity" effects, whereby traders/investors operating across asset markets are subject to common cyclical movements in market liquidity conditions. For example, has the precipitous fall in prices after the event in Sep. 2008 explained in shifts in market sentiment - a Flight to Quality triggered by the crisis of confidence, leading to massive deleveraging in many assets markets?

Q: How are commodity price dynamics related to development in other financial markets, e.g. bond, equity and currency markets?

A story of market-fundamentals vs A financialisation explanation

Factors behind the unprecedented price swings: A Financialisation Explanation

- The rapid growth of commodity derivatives markets since the early 2000s associated with dot com bubble-burst, low interest environments
- Easy monetary condition: real interest rates - an important determinant of real commodity price working through shifts in the cost of carrying physical inventories
- New actors in commodity markets (investment funds, mutual funds, pension and hedge funds and sovereign wealth funds);
- an "open interest", i.e. virtual commodity stocks held as part of diversified asset portfolios, exerting a significant effect on commodity prices
- The fights from equity and bonds markets where the advent of financial crisis in the summer 2007 led to further monetary easing: excess liquidity moving into commodity markets - a price hike in the early 2008
- High correlation across commodities as a result of commodity index trading and momentum trading, which are all less reflective of the fundamentals;
- An intensification of financialisation in 2002-8 (in particular in 2006-8): the commodity super-price cycle story at the back of Asian drivers and the high growth performance of EMs and other DCs coupled with 'decoupling' hypothesis.

Arguments against the Financialisation Hypothesis

- Challenges against the position that the financialisation of commodity derivatives markets/deals affect commodity price dynamics:
  - Sanders and Irwin (2010) "no empirical evidence of speculative bubbles in sport prices of agricultural commodities as results of the financialisation of futures markets"
  - Krugman (2008) "Investors interested only in futures not taking delivery cannot change spot prices"

- In their reasoning, the causality runs only from spot prices to futures prices, not the other way round, and that futures prices are determined by spot prices, the cost of carry (interest plus storage cost) and the convenience yield as specified in the arbitrage equation between futures and spot prices

- Thus, claim "all changes in futures prices should eventually reflect changes in expectations about commodity market fundamentals, rather than futures prices driven by financial interests"

Effects of activities in derivatives markets on commodity Prices

- However, given low price-elasticities, price stability cannot be maintained only through inventory adjustments, and changes in futures prices could affect spot prices through changes in market sentiments
- Futures prices can influence spot prices through profit arbitrages, leading not only to changes in precautionary demand for holding commodities, but also to shifts in market sentiments
- Physical commodity stakeholders make decisions with reference to futures prices
- Inventory adjustments to commodity stocks held are increasingly influenced by activities in derivatives markets.

So activities in derivatives markets have significant effects on spot prices
**Financialisation of Commodity Markets (Funds invested)**

Figure Comm.9 Funds invested in commodities

[Graph showing funds invested in commodities by year (2006-2011) for energy, base metals, and precious metals.]

Source: Bloomberg, Barclays Capital.

**Rapid Expansion of Derivative Contracts**

Notional amount of outstanding over-the-counter commodity derivatives, (Dec 1998 – June 2011, $trillion)

[Graph showing the notional amount of outstanding over-the-counter commodity derivatives from December 1998 to June 2011.]

**Estimated Index trader Positions and Commodity Prices, January 2006- May 2009**

[Graph showing estimated index trader positions and commodity prices from January 2006 to May 2009.]

Source: UNCTAD secretariat calculations, based on Bloomberg, Goldman Sachs, and CTIC.

Note: The positions of commodity index traders are estimated based on the January 2006 weights of both the S&P GSCI and EU-10, and normalized based on the CTIC's commodity index trader supplement.
The CFTC granted investment banks an exemption from position limits in their over-the-counter (OTC) commodity swaps transactions.

- The precipitous fall and collapse in commodity prices in recent years: in part a reflection of the actual and expected shift of demand-supply fundamentals;
- resulting from the shift in market sentiments influencing virtual holding commodities – e.g., the massive liquidation of long positions in commodity futures and OTC deals through deleveraging on the part of portfolio investors in the last Q of 2008;

- disentangling empirically the two conditions (the fundamentals and the financialisation) is not easy, but the spectacular rise and fall in commodity prices for 2006-11 cannot be explained in terms of market fundamentals alone; - reflecting in wedges between futures and cash prices

- The effects of financialisation continue to filter through price dynamics in 2009-11. Financial investors are back in commodity exchanges with more actively trading than passive index trading.
Mitigating excessive commodity prices at the global level

How has financialisation changed commodity market structures

- The significant overshooting and undershooting in commodity prices, determined along with other asset prices, on the basis of expectation formation on the part of heterogeneous participations.
- Q: whether their expectations are always formed in relation to commodity market fundamentals;
- Strongest arguments against the financialisation hypothesis come from the Efficient Market Hypothesis (EMH), which claims “Markets are efficient and play an important role of ‘Price Discovery’ and ‘Risk Management’.
- Empirical test of the EMH in commodity markets on account of:
  - commodity market structures: heterogeneous traders: informed trading, noise trading and uninformed trading;
  - information failures and ‘weight-of-money’ effects by examining changes in commodity market structures (e.g. Mayer, 2009, Gilbert 2008–9)

Consequences of Market Failures

- The entry and presence of speculative noise trading or the prevalence of herd behaviour (Pindyke (2004));
- Excessive volatility not reflecting commodity fundamentals- not good for markets- markets do not work for hedging and risk management for commodity stake-holders:
- Price signal: does not indicate and predict properly a future price movement for investment and other technological advancement (for substitution and conversation);
- An enormous wedge between private returns (short-term gains) and social returns (long term consequences) as a result of market failures;
- In the end, it is not a situation of winners and losers, but a negative-sum game for the global economy and community.
- The cost for Commodity Dependent LICs- huge-Commodity Dependence Trap
- Increased vulnerability of the poor through high volatile prices of basic wage goods such as food and fuel prices
- The failure of the earlier ICAs should not be an excuse for non-action
What can be done? Towards making Markets Work

- Regulatory measures over markets (e.g., by CFTC):
  - i) aggregate position limits on futures contracts to counteract the “weight of money” effects;
  - ii) increase the transparency of futures markets and OTC deals;
  - iii) capital deposit requirements on portion of each future transaction;
  - iv) Eliminate the loopholes in regulations;
  - iv) counter-cyclical margin requirements.

- Regulatory reform of commodity derivatives markets as a part of reforms over other asset markets—requiring international coordination and harmonisation

- Relying exclusively on buffer stock management for stabilisation is both ineffective and costly in the face of rapidly shifting market fundamentals

- What is required is a smart and efficient regulation, working in favour of market development; i.e., liquidity enhancing for risk hedging purposes

- Aiming at acting on excessive volatilities (defending price levels can be difficult when market fundamentals change rapidly)

- Innovative commodity stabilisation schemes through virtual intervention cum better inventory management

Outstanding Issues in Commodities and Development

Changing governance in world commodity trade and production under globalisation: at the Global Level

- TNCs can dictate the patterns of international trade through intra-firm trade under their globally integrated production and marketing strategy.
  - The governance structures of GVCs have become buyer-driven with a shift in the distribution of value skewed in favour of consuming countries.
  - In agricultural commodity production and marketing, there are asymmetries in market power and access to information, technology and marketing know-how between TNCs, on the one hand, and local entrepreneurs, farmers and traders in developing countries, on the other.
  - Producers—marginalized and isolated with withdrawal of institutional support and the loss of the bargaining power, as vertically integrated TNCs had consolidated their positions over GVCs
  - New issues arising from contract farming and land grabs

  - In mineral producing countries—privatisation negotiated between TNCs and governments, based on the asymmetric power relationships—mineral rents not accruing much to producing countries, esp. in SSA

  - The parallel process of fragmentation and integration has often resulted in a hugely skewed distribution of gains from commodity trade

Changing Environments at the National Level

- Institutional changes affecting agricultural producers in input provisions, access to technology, extension services and marketing through dismantling market boards and extension services

  - Institutional vacuum, leading to fragmentation of marketing activities, and placed small-holders in a weaker position vis-à-vis private traders in both inputs provisions and marketing—exposed to high price volatility

  - The need to strengthen local institutions and intermediate organisations like local farmers associations

  - Use of Hedging instruments—imperfect hedging—the greater divergence between spot prices and future prices; requiring high liquid resources;

    - Hedging instruments—high brokerage & transaction and high financial costs upfront, skewed access to information, technical barriers
**Changing Environments at the National Level**

- In mineral-based economies, a policy space for autonomous prudent macro management has been reduced; need to reverse in conjunction with improved public resource management through fiscal distributional mechanisms for inclusive development
  - Macroeconomic hedging imperfect and not available beyond short term
  - An establishment of Stabilisation Fund with a counter-cyclical fiscal management at national and regional levels

- Taking strategic positions in negotiation over tax regime and transfer pricing for improving distribution over resource rents – more transparent open negotiations and contract

- Managing pro-cyclical capital flows strategically

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**Measures to overcome the commodity dependence trap**

- The hypersensitivity to externally originated instability is one of the critical weaknesses of CDDCs;
- The real answer to the “commodity dependence trap” – transformation into diversified economic structures, which require rigorous investments in production capacity and physical and social infrastructures.
- Call for a strong commodity sector, where the process of active learning-by-doing experiences and accumulation can take place;
- The new landscape emerging under globalisation tend to discourage this process of learning and accumulation;
- The need for strengthening international and domestic institutions governing commodity trade and production throughout commodity chains;
- A case for a global action to mitigate the commodity dependent syndrome
  - A global facility is required on the two fronts with innovative elements
    - Innovative schemes to reduce excess in commodity price volatility,
    - A global “state-contingent” financing facility as a basis for counter-cyclical macroeconomic demand management to facilitate sustainable socio-economic development in CDDCs in order to avoid institutional and international traps associated with high commodity dependence.