



Indian Commodity Derivative Market: A study of price trends in the International market

KEYWORDS

Commodity derivative, International exchange, price trends

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ABSTRACT Commodity derivative market in India had been existence since 1875 when Cotton Trade Association, Bombay undertook organized derivative trading in cotton. Although derivatives was initially conceived for the commodity market, in recent years there had been a tremendous development in financial derivatives market both in terms of trade volume and in variety of instruments used. The paper has been undertaken with the purpose to analyse the affect of international price movement of commodity derivative market in Indian commodity derivative market. The price movement in international commodity derivative exchanges is closely correlated to prices in Indian commodity derivative exchanges. Therefore the functioning as well as the profitability in Indian exchanges is effected by the current performance of the international derivative market. It is imperative that any evaluation, projection or policy intervention on Indian commodity derivative market should be undertaken keeping the international commodity derivative market in perspective.

I. Introduction

The origin of commodity derivatives markets dates as far as back to the 17th century, when they informally established in Amsterdam and centered on the trade in Tulips. The modern form however came into existence in the 19th century, in London, Chicago and New York. Commodity derivative market in India had been existence since 1875 when Cotton Trade Association, Bombay undertook organized derivative trading in cotton. Although derivatives was initially conceived for the commodity market, in recent years there had been a tremendous development in financial derivatives market both in terms of trade volume and in variety of instruments used. The expanding domain of the derivatives market is primarily induced by the huge volatility in the global financial and commodity market and facilitated by the revolution in information technology.

II. Review of Literature

Price volatility is the most pressing issue facing the producers of primary commodities. While these producers are not exclusively in less developing countries (LDCs), the impact of volatility specially on agricultural producers is much greater in less develop countries than it is for those in developed market economies (Sapsford and Chen, 1998).

The traditional high volatility of international commodity prices can be attributed to several demand and supply factors. However Pal and Wadhwa (2007) observed a distinguishing feature of international agricultural trade is that only a limited number of exporting countries dominate international trade. Even for a widely produced crop like rice, the share of the top five exporters is more than 76 percent and for all cereals the share of the top five is almost 75 percent. The supply side scenario is further complicated because exports of some major agricultural commodities are dominated by a few large-scale multinational "grain majors" and export state trading enterprises (single-desk sellers).

According to Chakrabarti and Ghosh (2009) whenever producers as well as consumers face price risk, conventional attempts to stabilize prices in the wake of price volatility are dealt mainly with government funds and governmental intercessions. These involved measures like buffer stocks, buffer funds, commodity agreements, or government intervention in commodity markets. However in the World Bank report (1999) revealed that internationally, there is little evidence of the success of such schemes. Buffer funds have gone bankrupt, as evidenced in Australia and Papua New Guinea. Buffer stocks have not proven effective, as can be seen by the large accumulations under the United States of America and

European Union farm programmed in the late 1980s. International commodity agreements have lapsed, as in the cases of coffee, cocoa, tin, and sugar. And government intervention has been costly, with unintended consequences, thereby placing unnecessary pressure on the government exchequer.

Ideally, commodity futures exchanges integrate the futures and cash prices, thereby leading to overall efficient price formation. Because futures are traded on exchanges that are anonymous public auctions with prices displayed for all to see, the markets perform the important function of price discovery. Around the world, many such prices in agricultural commodities fixed in the Chicago Board of Trade (CBOT) are taken as the reference price for trading. Incidentally, it may be observed that soybean oil futures contract at National Board of Trade (NBOT) in Indore follows the soybean oil futures contract at the CBOT.

Various commodity exchanges around the world have emphasized their roles in price discovery either at the international or at the local level. Such attempts have been well-documented for Dalian Commodity Exchange (DCE) in China, Bursa Commodity Exchange in Malaysia which is often claimed to have discovered the prices of Malaysian palm oil, and Tokyo Commodity Exchange (TOCOM) which provides a benchmark for price discovery in Middle East Crude Oil (Pavaskar and Ghosh, 2008).

In the international domain in US and other Western countries, derivatives trading is allowed in a range of commodities including live cattle, hogs, pork bellies, fluid milk, rubber, coffee, wool and industrial metals and even in a number of non-commodities such as weather derivative contracts, insurance contracts etc. providing the holder with large amounts of capital subject upon the occurrence of some risky event. (Fernando N.A, 2004).

In this regard Kabra (Ministry of Consumer Affairs, Food & Public Distribution, 1993) observed that while futures trading in a number of countries has over a period of time, evolved various instruments such as commodity bonds and loans and range forward, these are not being used in India, where the non-transferable specific delivery (NTSD) contracts, transferable specific delivery (TSD) contracts and futures contracts are in vogue, primarily on account of the relative narrowness of our commodity markets.

III. Trends in Future prices in the Indian and International Commodity Derivative Market: An Empirical Analysis

Indian market participants have been trading in commodity

derivatives since 1875 when the Cotton Trade Association started futures trading. This was barely a decade after the commodity derivative trading started in Chicago in 1865. In 2002, Government approved the launch of national-level trading platforms and since then the Indian commodity exchanges have conducted brisk business in commodities futures trading. Dasgupta and Chakrabarty (2009) revealed in his study that in 2010 the contribution of commodity derivatives exchanges would be as high as 10 percent of Gross Domestic Product (GDP) by the year end 2010 compared with a nominal of 1.2 percent of GDP in 1999. In terms of volumes (the number of contracts traded), nine of the world's top 22 major commodity derivatives exchanges are in developing countries. And among the nine, three are based in India (MCX, NCDEX and NMCE). Further one of these exchanges (MCX) features in the world's top ten, overtaking long established and mature exchanges such as the Tokyo Commodity Exchange and New York Board of Trade. A figurative assessment is given in Table-1. The figures include the volumes in terms of contracts traded in the first half of 2009.

Feb-06	8111	8039	Feb-08	12396	12456
Mar-06	8382	8324	Mar-08	11920	11887
Apr-06	9609	9467	Apr-08	11370	11131
May-06	9526	9389	May-08	12199	12016
Jun-06	9220	9123	Jun-08	12879	12777
Jul-06	9560	9471	Jul-08	12618	12590
Aug-06	9554	9398	Aug-08	11895	11474
Sep-06	8859	1037	Sep-08	13192	12804
Oct-06	8894	8875	Oct-08	11630	1129
Nov-06	9269	9331	Nov-08	13125	12857
Dec-06	9265	9156	Dec-08	13630	13826

Source: Commodity Insights Year Book-2009

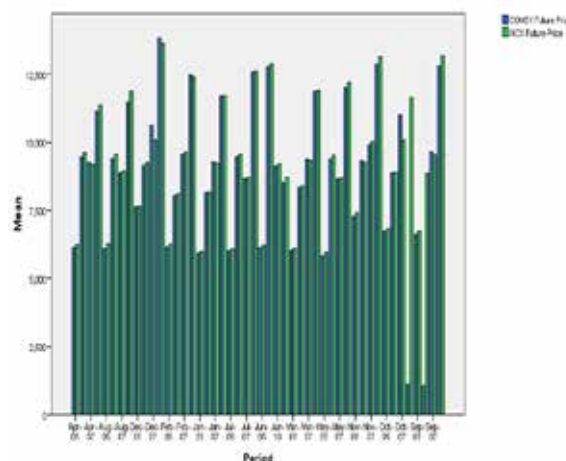
Table-1: Turnover of Global Commodity Derivatives Exchanges

Rank	Exchange	Country	Turnover (Number of contracts traded)
1	New York Mercantile Exchange (NYMEX)	USA	206010205
2	Dalian Commodity Exchange (DCE)	China	170869127
3	Shanghai & Hong Kong Futures Exchange (SHFE)	China	1515444472
4	Zhengzhou Commodity Exchange (ZCE)	China	93213149
5	Chicago Board of Trade (CBoT)	USA	83233736
6	Intercontinental Exchange (ICE) Futures, Europe	Belgium	78372945
7	Multy Commodity Exchange of India (MCX)	India	77742706
8	London Metal Exchange (LME)	UK	55185086
9	ICE Futures U.S. (erstwhile New York Board of Trade)	USA	25271245
10	Tokyo Commodity Exchange (TOCOM)	Japan	14643397

Source: Commodity Insights yearbook 2009

In commodity derivative trading there is high correlation between price movements in Indian and international derivative markets. This is evident in Table-2 where sample data of price movement of gold in MCX in India and COMEX in USA is presented.

Figure-1: COMEX and MCX Future Price



On the basis of the data presented in the above table null hypothesis is formulated which hypothesises that-

International price movements in the commodity derivative market do not affect prices in the domestic derivative market.

A model is formulated defining future prices in Indian commodity market as a function of prices in the international commodity exchanges.

$$PMCX = b_0 + b_1 PCOMEX + e.....(i)$$

A regression analysis based on the data in Table-12, reveals a coefficient of determination of 0.534 in Box-2, implying that 53.4 percent in the variation in gold prices in MCX can be accounted for by price movements in COMEX.

Table-2: MCX & COMEX Gold Price comparative analysis Price: Rs/10gm

Month/Year	Monthly Average MCX futures prices	Monthly Average COMEX Future prices	Month/Year	Monthly Average MCX futures prices	Monthly Average COMEX Future prices (Rs/10 gm)
Jan-05	6000	5938	Jan-07	9242	9294
Feb-05	6245	6152	Feb-07	9628	9556
Mar-05	6103	6027	Mar-07	9339	9386
Apr-05	6229	6132	Apr-07	9203	9270
May-05	5966	5851	May-07	8694	8667
Jun-05	6214	6125	June-07	8710	8534
Jul-05	6084	6020	Jul-07	8708	8669
Aug-05	6263	6102	Aug-07	8935	8873
Sep-05	6731	6623	Sep-07	9530	9637
Oct-05	6822	6730	Oct-07	10083	11000
Nov-05	7416	7279	Nov-07	10033	9917
Dec-05	7638	7618	Dec-07	10083	10627
Jan-06	8166	8152	Jan-08	11707	11684

MODEL	R	R ²	F	Sig.	B	t	Sig.
1	.731	.534	52.703	.000	.588	7.260	.000

BOX-2

- a. Predictors: (Constant), COMEX Future Price
- b. Dependent Variable: MCX Future Price

Besides the Beta value is estimated at 0.588 which is significant at 1 percent implying that a 100 unit increase in gold prices in COMEX will induce a 58.8 unit increase in the prices of gold in MCX, on the basis of which the null hypothesis asserting International price movements in the commodity derivative market do not affect prices in the domestic derivative market, is rejected.

IV. Conclusion:

Hence we can conclude on the basis of gold prices, that price movement in international commodity derivative exchanges is closely correlated to prices in Indian commodity derivative exchanges. Therefore the functioning as well as the profitability in Indian exchanges is effected by the current perfor-

mance of the international derivative market. In this context it is imperative that any evaluation, projection or policy intervention on Indian commodity derivative market should be undertaken keeping the international commodity derivative market in perspective. Such a step would ensure that

the impact of the international commodity derivative market is internalized into the cost-benefit calculation of the Indian commodity derivative market which would go a long way in optimizing any strategies that are adopted by the stakeholders.

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