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Commodity Derivatives Market- A Tool for Sustainable Risk Management

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***Abstract* - The operation of financial markets determines the price of the product that is being dealt with. There are three broad sets of prices in a country such as interest rates, exchange rate, and prices of commodities. While the first two are relatively narrow in scope, so far that there are fixed sets of such rates; the last consists of a large number of products, each with its own characteristics. Recent inclusion of commodity markets within the preview of SEBI(Securities Exchanges Board of India) from FMC(Forward Market Commission) attracted the attention of investors regarding the commodities as an investment avenue. This paper discusses the need for commodity derivatives, its importance and the future prospects of commodity derivatives market in India**

Key Words: Derivatives, Commodities, Risk Management, Hedging.

I. INTRODUCTION

In the general sense , Any product which is traded on an authorized commodity exchange that is utilized for commerce can be considered as commodity. The article should consist of the following properties such as containing movable value, bought or sold, produced, or used as the subject, barter, or sale. In short, commodity includes all kinds of goods. The Forward Contracts (Regulation) Act (FCRA), 1952 defines “goods” as “every kind of movable property other than actionable claims, money and securities".

A commodity exchange generally trades different commodities and derivatives. Derivatives contracts include options, futures, and forwards. Various other contracts including interest rates, weather, or swaps are also being traded in various exchanges (NFA 2006[2]).

Today, commodity exchanges are permitted by FCRA to trade not only in agricultureal but also in mineral, and fossil. The Central government recognized National Commodity Exchanges allowed to trading in oils, oil seed, various dals, gaur, sugar, spices, rubber and tea etc.,

India, in particular, is an agrarian based economy and the share from agriculture is more than fifty percent of the total GDP in 1950-51[3]. Although during 2013-14, 17.39 % of GDP is contributed from agriculture, its importance in the economy cannot be ruled out as more than fifty percent of people in the rural areas and about ten percent of population in urban areas (Report on Employment & Unemployment Survey, 2009-10)[4] are employed in the agriculture, and many more dependent on allied industries. Mining and Quarrying is contributing two-thirds of the GDP. Hence, the role of commodities in the Indian economy is prominent.

India is one of the top ten main producers of agricultural commodities among all the highly traded ten commodities in the world. It ranked two in the production of sugarcane, paddy, wheat, potatoes, vegetables and cow's milk (see table-1.2). India is listed in the top five ranks for the production of more than fifteen metals [6]. Even though it is the world's major producer of agricultural commodities and metals, the farmers and mining industrialists in the country are not in a position to realize the true value to their hard labour. The existence of good market mechanism is an essential factor of success for growth of economy.

1.1. History of Commodity Trading in India

Whole sale markets or Mandis are the places where prices of all agricultural commodities in India are decided. Government supports the farmers by deciding Minimum Support Price-MSP and if the price decided by the market is below the MSP, the trader takes the delivery at the MSP and Mandi compensates difference. The Government again compensates Mandis . Today around Twenty five agricultural commodities including rice, wheat, cotton and sugarcane. Are supported by the Government through “Minimum Support Price” (MSP).

Traditionally agricultural commodity markets in India have been confined to few geographical locations. Even today the structure of the market remains the same comparatively. The structure of Mandis are very similar to that of the Indian equity market before 1995 where the local demand and supply factors used to cause fluctuations in the prices. Various places of the country used to have different prices

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for the same commodity. Absence of low cost transportation infrastructure in the entire market system resulted in the absence of profound arbitrage mechanism. There are two major problems with the local commodity markets (Susan, 2003) [7] as follows:

- Price Dissemination

Lack of Standards and Certification.

Table1.1 Sectoral Composition of GDP 2012-13 (Base Year: 2004-05)

Year	Agriculture & allied activities		Industry		Services		Mining & Quarrying		GDP at Factor Cost	
	Constant Prices	Current Prices	Constant Prices	Current Prices	Constant Prices	Current Prices	Constant Prices	Current Prices	Constant Prices	Current Prices
1950-51	51.88	51.80	11.10	1.84	0.75	11.50	34.63	35.91	100	100
1960-61	47.65	42.56	13.68	2.16	1.04	15.31	36.60	42.24	100	100
1970-71	41.66	41.95	15.98	2.20	1.05	15.81	40.91	41.89	100	100
1980-81	35.69	35.39	18.05	2.62	1.71	19.55	45.26	44.66	100	100
1990-91	29.53	29.02	20.56	3.48	2.60	20.92	49.61	49.75	100	100
2000-01	22.31	23.12	20.69	2.97	2.30	20.10	57.00	56.78	100	100
2010-11	14.45	17.98	20.32	2.21	2.70	19.37	65.23	62.64	100	100
2012-13	13.69	17.39	18.94	1.96	2.31	17.64	67.41	64.97	100	100

Source: Reserve Bank of India Report (2012-13)[3]

Table-1.2 India's Share in World Most Traded Ten Agricultural Commodities

Commodity	Production (Tonnes)		India's Rank
	World	India	
Sugar cane	1,842,266,284.00	361037000	2
Maize	872,791,597.89	22260000	4
Rice, paddy	738,187,643.07	157800000	2
Wheat	671,496,872.22	94880000	2
Milk, whole fresh cow	625,754,261.38	54000000	2
Potatoes	365,365,367.31	41483000	2
Vegetables, fresh nes	269,852,343.40	28000000	2
Sugar beet	269,825,230.00	-----------	---
Cassava	269,125,961.71	8746500	10
Soy beans	241,142,197.75	14666000	4

Source: Compiled from the data retrieved from FAOSTAT for the year 2012.[5]

Price Dissemination

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Every Mandi used to act as monopoly for the regional producers. Farmers generally have less time between harvesting and selling. Lack of low cost transportation alternatives added to the problem. When the farmers are deprived of access to reliable sources of price information, they become hostage to the closest source, i.e., the local Mandi. It is quite essential to provide both the local, regional and national level price information to the farmers in order to have better price for their produce.

Lack of Standards and Certification

Another problem in price identification is the absence of proper certification and standardization mechanism. The absence of good standardisation mechanism of commodities made it difficult to compare the prices among different markets. Meaning comparison of commodities are possible only when the proper categorization and standardizing of commodities is possible. The standardization should happen across all the regions of India.

1.1.2 Price Risk Management in Commodity Markets

The volatilities create uncertainty in the mind of a farmer regarding the price he is going to receive at the time of sale. This uncertainty not only restricted to the amount the farmer is going to receive but also make it difficult to make decision during crop cycle. The investment got from the loan need to be paid back and every single decision regarding the investment is difficult once the uncertainty prevails.

The problem is not only restricted to the farmers but also to the lenders as the ability to repay the agricultural loans increases the risk of lenders. When the farmers don't pay loans properly then the lenders either deny to lend to the farmers or raise interest rates which again increase the cost of farming. Only appropriate risk management instruments could help in solving the problem. Absence of price risk management is one of the major reasons that poor farmers stay poor (World Business Council for Sustainable Development, 2004) [8].

The price risk problems are same to the Farmers' associations also. Once the given loan is not repaid properly, that will influence the future lending capacity of the association. Farmers association will get effected when the crop is sold at the too low prices to enable the repayment of loan. (UNCTAD, 2002 in Myong 2006)[9].

The price fluctuation can be more damaging in macro-perspective. Most of the underdeveloped and developing economies are depending on the few commodities exports. The international commodity prices not only influence the farmers but also the government's fiscal revenue, and foreign reserves and play vital role in the domestic economy. (WBCSD, 2004)[8].

There are two ways of controlling the price risks are stabilization approach and Market based approach as follows:

- Stabilization Approach
- Market based Approach.

1.1.2.1 Stabilization Approach

Market interventions are the main step taken by international national governments to stabilize the price risk and in turn to reduce the price risks during the last five decades. Through price regulation and stock buffering many developing countries tried to control the domestic prices through marketing boards. The major tool for such price control is minimum support price. Even though the minimum support seems to be effective could not yield the purpose due to poor administration. The price risks were re distributed inside the country through the price stabilization schemes, but could not diversify these risk to other nations that are capable of minimizing such risks (Varangis and Larson, 1996)[10].

1.1.2.2 Market based Approach

AS the stabilization schemes are not effective in price risk management, researchers and policy-makers started exploring the ways to identify methods that can distribute the domestic risk to international markets, and wanted to device measures that are market-based instead of stabilization based to deal price risk effectively. The recent policies are shifting their focus from managing market and prices to risk management.(Varangis and Larson, 2002)[11]. The major benefits of market-based instruments than that of price stabilization tools are given below (adapted from Varangis and Larson, 1996)[10]:

- The market based risk management measures promises the future revenues as it is not possible with the price stabilizing schemes that control the price by buffering the sticks and with foreign agreements, and thus guarantee the concrete cash flows to the users.
- Market based measures depend on the market prices thus it is easy for the capable and willing market to take the risk of other markets. When such developed market is not present, derivatives will help in transferring the price risk of farmers to the investors in developing countries that are capable and interested in absorbing such risk. The major advantage of such instrument is cost advantage compared to that of stabilization measures.
- The derivatives are indirectly helping in increasing credibility of commodity financing. The guaranteed revenues through such instruments ensure that all the loan amounts wre paid in future for certain. This will enhance the credibility of the borrowers and help them to get loans easily with low interest rates. Fast and low cost credit flows are crucial for the successful implementation of recent reforms towards liberalized commodity sub sectors.
- Derivative markets are crucial for free flow of information in the market and are becoming effective price discovery mechanism for spot markets. As the low

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cost derivative investment attracts more participants, so that future information on future demand and supply can effectively been distributed towards price discovery mechanism. The manipulation is very difficult in derivative markets as the transactions happen anonymously and are highly transparent.

- The minimal cost of transaction is the major advantage of the exchange traded derivatives, they are liquid, standardized in terms of delivery date, lot size and quality requirements.

1. 2 COMMODITY DERIVATIVES TRADING

A derivative can be known as the instrument whose value is determined by an underlying asset. Derivatives are originated from a common forward pricing strategy that involve deciding the price or limit on price of a commodity that to be delivered on a future date. A commodity derivative that allow the trader to long or short positions on a commodity (the underlying asset) at a future date whose price is determined variably today. Derivatives products include stocks, currency, bonds, and commodities. There are two broad categories of derivative instruments based on the availability in different market structures.

- The standardized instruments that are traded on commodity exchanges (the key derivative instruments mentioned here are futures and options)
- Over-The-Counter (OTC) instruments, which are privately negotiated (the key derivative instruments mentioned here are forward contracts and swaps).

1.2.1 Types of Traders in Derivative Trading

The participants in the derivative market can be classified into three categories, Hedgers, Speculators and Arbitrageurs. Hedgers are the traders who have exposure to the underlying asset and enter the market to reduce their price risks. (Shunmugam, 2008)[12]. The next category of participants in the derivative market is speculators (i.e. taking positions to gain from fluctuations in the prices). In reality, identifying a hedger and speculator is very difficult in the market, but the presence of active markets hedgers and speculators is important for the effective operations of the market. A third type participant in the market known as arbitrageurs, make profit from the differences in the prices of spot and derivative market, and thereby helps keep the markets efficient. Jogani and Fernandes (2003)[13] states that, India has a long history of arbitration between two markets of same locality and between different markets in the country.

1.2.2 Benefits of Derivatives Trading

The government could take prevent measure when they know the price fluctuations well before through the derivatives markets. The derivative market perform the key functions of price risk management and price discovery. The other benefits of derivatives market including, increased liquidity, enhanced transparency, and prevention of black market. The liquidity of derivative contracts helps the speculators to participate more in the market thus provide the enough liquidity for smooth functioning of the market. Speculators guarantee the future revenues or expenditures hence ensure the liquidity of market.

The overreaction of the market may be due to the speculators but the underlying price movements are not caused by speculators. Speculation becomes more dangerous when the participation of the hedger is low (Srinivasan 2008)[14]. Past prices of commodity futures indicate low volatile than that of the stock market comparatively, and is the best alternative investment choice to be part of diversified portfolio.

Currently, there are only six such exchanges, viz., Multi-Commodity Exchange(MCX), Mumbai; the National Commodity and Derivatives Exchange (NCDEX), Mumbai, the National Multi-Commodity Exchange (NMCX), Ahmedabad, the Indian Commodity Exchange Ltd., Mumbai (ICEX), ACE Derivatives and Commodity Exchange(ACEX), Mumbai and Universal Commodity Exchange Ltd. (UCX) Navi Mumbai, and a total of one hundred and thirteen commodities were notified under section 15 of the f.c. (r.) Act 1952 in the exchanges.

All the commodities are not suited for futures trading. For a commodity to be appropriate for futures trading, it must possess the following characteristics (Guru Committee: 2001)[15] :

- The commodity should have an appropriate demand and supply conditions, i.e. volume and marketable surplus should be large.
- Prices should be volatile to necessitate hedging through futures trading; in this case, persons with a spot market commitment face a price risk. As a result, there would be a demand for hedging facilities.
- The commodity should be free from substantial control from government regulations (or other bodies) imposing restrictions on supply, distribution, and prices of the commodity.
- The commodity should be homogeneous or alternately it must be able to specify a standard grade and to measure deviations from that grade. This condition is necessary for the futures exchange to deal in standardized contracts.
- The commodity should be storable. In the absence of this condition, arbitrage would not be possible and there would be no relationship between spot and futures markets.

Even though one hundred and thirteen commodities are permitted to be traded in Indian Commodity Exchanges, only twenty-five commodities in MCX, twenty one commodities in NCDEX, and merely few commodities in other exchanges were under trading.

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1.3. CHALLENGES AND FUTURE PROSPECTS OF DERIVATIVE MARKETS IN INDIA

Commodity derivatives shown immense growth that is highest among other progressive steps adopted in financial sector in India. This has not happened suddenly but the previous experiences in the commodity derivatives trading regained their status. The ease and anonymity in the electronic exchange platforms helped the trading throughout the country at a higher phase.

The tremendous growth in the commodity derivatives trading during the last ten years is not always without flaws. The problems are still prevailing and need to be addressed. The increase in the number of participants in the market and huge increase the traded volumes are not enough to claim the success of the commodity markets. The key purpose for which the derivatives were introduced will be fulfilled, and sustainable and continuous growth will not happen unless the real times problems were addressed quickly and effectively. Few unresolved issues (Ahuja, (2006)[16], Meenakshi, (2012)[17] and Ravi Kumar (2014)[18]) are mentioned below:

- More Participants in Commodity Market
- Lack of Economy of Scale
- Commodity Options
- Warehousing and Standardization
- Cash versus Physical Settlement
- Strong Support of Information and Communication Technology
- Integrating Commodity Derivatives' Market with the Underlying Physical Market
- Regulators Powers
- Prevention of Fraudulent Trading
- Tax and Legal Bottlenecks
- Issues on Warehouse Receipts (WR)
- Weather Derivatives and Trading on Index
- Awareness and Information Dissemination

II. CONCLUSION

There is a need for more participation and inclusion of options in the derivative markets in India. The perfect hedging mechanism will not only reduce the risk of the farmers and miners but also for the traders/ customers. Allowing all *exchanges* to do stocks as well as *commodities* trade announced in the union budget 2018 will lead to more participation and ease of participation in the market.

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