

Benefits and Importance of Hedging Commodity Prices

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Price risk is inherent in any business activity. For commodities, risks arise primarily from the volatility and uncertainty of their price movements. In fact, it is often asserted that volatility in commodity prices are typically greater than the volatility in other financial instruments, such as foreign currency or interest rates. High volatility in commodity prices has been a source of great risk, affecting economies and stakeholders on an unprecedented scale. Volatility in commodity prices, in turn, arise from market upheavals caused by changing world trade patterns, geopolitical risks, economic stimuli, infrastructure spending, increasing regulation, and such other factors. These factors play into business decisions and do have an effect on commodity prices. As a result, commodity price risk management is crucial in business strategies and is often critical for firms to survive economic downturns.

The effect of commodity price volatility on the real economy has been truly significant. As price volatility touches virtually every economic entity—from individuals and organizations to the economy—risk management in the commodity economy assumes great importance. Individuals need to manage this risk to protect their real incomes, firms to protect their bottom line and competitiveness, and the economy to protect its macroeconomic stability. In fact, unmitigated volatile raw material prices and commodity prices affect every industry: from groceries to white goods; from electronics, automotive, and fast moving consumer goods to supermarkets.

Coping with commodity price volatility

How has the corporate world reacted to commodity price volatility? Companies across the globe have been resorting to a slew of both traditional and innovative practices to beat input price volatility. While some companies have been able to pass on volatile input prices to their consumers or have established long term contracts with their suppliers or buyers, the success of these strategies has either eluded them, or has come at a cost.

Price Risk Management through Hedging

'Hedging', or risk management using commodity derivatives, has emerged as a cost-effective tool to manage commodity price risks. Hedging is comparable to the concept of insurance. Just as insurance offers financial cover against specified risks, hedging offers producers, consumers, traders, and all other stakeholders a financial cover against the risk of commodity price fluctuations. By offering standardized derivative contracts and being counterparty to every trade, a commodity derivative exchange not only helps its participants to reduce risks arising from price fluctuations, but also offers safety and surety of the trade itself.

Operationally, hedging allows someone to reduce the price risk of physical commodities by taking a position in the derivatives market. Thus, a processor, who requires a commodity at a future date, can protect himself from the risk of a possible price rise by buying a commodity futures contract on the commodity exchange platform. When the time comes for him to actually procure the commodity, he can offset his position by selling on the futures platform and simultaneously buying from the physical market. The idea is to offset the loss in one market with profit in other. Similarly, a producer who plans to sell a commodity at a future date and wants to mitigate his risk, can sell a commodity futures contract on the exchange platform at a pre-determined price; and if a consumer intends to buy a commodity in the physical market in the future, he can lock-in the current price by buying from the futures market.

¹ Views are personal

How a Jeweller Can Lock-in Price by Hedging

The situation: Assume that on 1st June, a jeweller gets an order for delivering designed jewellery after one month to his customer. As is routinely followed in the jewellery business, the selling price is pre-fixed at the time of giving the order. But the jeweller is planning to buy the gold for making the jewellery only in mid-June. However, he perceives a risk of rise in gold price by then and decides to hedge against rise in prices.

Strategy for hedging

Prices (Rs/10 grams)			Date	On MCX platform	In Physical market
Date	Gold Spot Price	Gold Futures Price (expiry 5th August)			
1 June	26,600	26,800	1 June	Buy a gold futures contract	
15 June	27,300	27,500	15 June	Sell the gold futures contract	Buy the required gold

With an intention to hedge and 'lock-in' the purchase price of gold on 1st June itself, the jeweler buys a futures contract on 1st June. When he actually buys gold from the spot market on 15th June, he 'squares up' or sells the futures contract.

Market	Date	Strategy	Price (Rs)	Date	Strategy	Price (Rs)	Outcome
Futures	1 June	Buy	26,800	15 June	Sell	27,500	700 (Profit)
Spot				15 June	Buy	27,300	

Net Purchase price Rs. 26,600 (Rs.27,300 less Rs.700)

In the illustration provided above, the prices actually rise between 1st June and 15th June. The jeweler makes profit in the futures market, which is used to set-off the potential loss he has faced in the spot market. He is, thus, able to 'lock-in' his purchase price to a level prevailing on 1st June. The net cost works out to Rs. 26,600 for 10 gram.

Note: All prices mentioned are fictitious, used for illustrative purposes only

In fact, the first-ever organized commodity futures exchange was set up in Chicago in 1864 as a platform for hedging in grains by farmers and traders in the U.S. A similar body that traded futures in cotton came up in Mumbai in 1875, called the Bombay Cotton Trade Association. Currently, in India, stakeholders can hedge their price risks across segments like precious metals, energy, base metals, and agriculture through commodity exchanges like MCX.

In developed markets, hedging has emerged as the most common way for corporations to manage commodity price risk. The importance of hedging is best demonstrated by the Southwest Airlines of USA. In 2008, the airline industry was hit by high fuel prices (crude oil touched \$140/bbl), which is a key input in the airlines industry. Hedging fuel cost thus became increasingly important to ensure the financial viability of the sector, which lost \$2bn in the first quarter of 2009, on account of absence of hedging. According to the American Trans Air, or ATA, the airline industry in 2008 hedged to the tune of 50 percent on an average. Yet, Southwest Airlines hedged almost 95 percent of its fuel costs till 2009. The Dallas-based carrier has thus been admired for the success of its hedging program by many in the industry. Hedging allowed the airline to sustain its capital plans and to signal to the market that its current investment level is a good proxy of its future investment levels. The fact that Southwest Airline's management announced plans to make sustained growth in the middle of the 2008 oil price crisis, gave a strong signal on how much the airline valued its hedging practices. By adopting a flexible hedging strategy, committing to the more aggressive hedged percentage and taking longer term positions made Southwest's fuel hedging program a success¹.

Amongst others, British Petroleum and major miners such as Polyus Gold International are known to have a well-structured hedging policy to manage commodity price risks. In fact, a survey in US (Isengildina *et al*, 2006) found that as many as 36 percent of the American farmers have done some sort of hedging using futures instruments².

Hedging by different stakeholders of cotton value chain

Producer. A cotton farmer is exposed to the risk of a fall in cotton prices till the time he is able to harvest his produce and sell it in the physical market. To counter this, he can sell his estimated produce in advance at MCX by selling cotton futures and thus lock in his sale price. Now, at the time of harvest, the farmer can either deliver his cotton produce at exchange-designated warehouses, depending on the quality and grade, or close down the futures market position by buying MCX cotton futures contract with a simultaneous selling of cotton in the physical market.

Ginner. A cotton ginner who holds raw cotton runs the risk of a price fall till the time of his intended delivery of ginned cotton. He can hedge against this risk by selling MCX cotton futures at the time of procuring cotton stocks for ginning. Later, he can close his futures market position by buying MCX cotton futures at the time of selling his ginned cotton in the physical market.

Miller. A textile mill runs the risk of a price rise from the time of executing an order till it actually buys raw cotton/yarn. Here again, the miller can hedge against this risk by buying MCX cotton futures. Later, when he actually buys cotton/yarn from the market for processing, he can close his futures market position, that is, by selling MCX cotton futures contract. By taking position in the futures market, he can also avoid the carrying cost of keeping the raw material inventory, that is, cotton/yarn.

Exporter. An exporter, who receives an export order of a certain quantity of cotton to be delivered three months later, runs the risk of a price rise between the time of receiving the export order and buying the required cotton stocks from the physical market. To counter this, an exporter could buy MCX cotton futures contract at the time of receiving the export order; later, he could close the futures market position by selling MCX cotton futures contract at the time of purchasing physical cotton stocks for export delivery.

In the above instances, any loss or profit in the physical market is mitigated by a corresponding profit or loss in the futures market, thereby guarding cotton stakeholders across the value chain from any adverse effects of cotton price movements.

Hedging in different roles

Evidence and research have brought out a number of reasons for hedging, highlighting its diverse beneficial functions. Some of these benefits are:

- **Insuring against price risk**

This is the most traditional theory justifying the merit of hedging. Basically, hedging provides insurance against risks arising out of price fluctuations. The price risk mitigation argument remains central to the need for hedging.

- **Facilitating better inventory management**

As increasing price volatility affects inventory management, firms are increasingly seeking recourse to inventory/procurement managers and logistics companies who have better knowledge of hedging. Researchers in their investigation on inventory risk caused by fluctuating procurement prices, suggest that it is possible to reduce inventory-related costs by trading appropriate amounts of derivatives of the commodity.

- **Ensuring continuity of cash flows**

Price volatility has an adverse effect on the revenue stream and can disrupt cash flows. Effective hedging insulates firms from such volatile price movements and ensures uninterrupted and stable revenue streams.

- **Enhancing firm's value**

Market imperfections, such as price volatility that a firm encounters, contribute to reducing the value of the firm and thereby making price volatility an expensive proposition. The imperfections, in turn, contribute to other market deficiencies, such as expensive external financing, enhanced financial distress costs, agency costs, and costs of managerial risk aversion. These imperfections adversely affect a firm's value. By helping to reduce costs stemming from such imperfections, hedging enables in enhancing the firm's value.

- **Essential for enterprises with small market power**

In a market structure characterized by small firms with low market power, it becomes essential for these firms to hedge as they have little control over input prices and are simply price-takers. In a study in 2010, researchers found that in 'output' industries, 64 per cent of the firms with low market power did hedge their commodity risks as against 18 per cent with high market power. The figures reinforce the need for players and lower market power to hedge their risks.

- **Lowering tax liabilities**

A more strategic reason for hedging is the immediate effect it can have on the tax liabilities of firms. Under a progressive taxation regime, losses of firms can be carried over for a finite number of years only. Over the medium to long run, therefore, volatile earnings induce higher taxation than stable earnings. A 1996 study proved this argument to hold good in any regime marked by increasing marginal tax rates, limits on the use of tax-loss carry forward, and minimum tax rates. A second tax saving from hedging arises from the increasing debt capacity of companies, which in turn increases interest tax deductions. In a study of 442 firms researchers found that the benefit from increased debt capacity was 1.1% of the firm value of these firms. They also found that firms did hedge to reduce the expected cost of financial distress.

- **Lowering distress costs**

The ability to raise capital becomes critical in a firm's real or perceived distress. Every business faces the possibility of a 'distress' under adverse circumstances, said a 2008 study. A 1985 study pointed out that even perceived circumstances of distress could be costly for firms—often in the range of 20% to 40% of the firm's value. In the extreme event, distress could lead to bankruptcy. Hence, it would be prudent for firms to hedge.

Evaluation studies on the impact of commodity futures trading in India

- a) **Study by Deloitte India (2013):** Commodity futures market directly generates employment for around 1.5 million personnel in India - 0.93% of India's service sector labour force.
- b) **Study by the Nielsen Company (2013):** Assessing the Impact of Dabba Trading on Commodity markets in India – The Dabba Market (trades outside the regulated markets) is more than 3 times of the trading through regulated Exchanges.
- c) **Study by IIM Calcutta and NISTADS, New Delhi (2012):** MCX Mentha Oil futures facilitated rise of India as major exporter of processed mentha crystals – transitioning from raw material exports.
- d) **Study by Tata Institute of Social Sciences (2012):** MCX platform has ensured stable and fair prices for the SMEs. Fairer prices reduce the cost of production and import bill, boost growth of the SMEs and provide accurate demand-supply signals that reduce risks in SMEs.
- e) **Study by UNCTAD (2009):** Number of intermediaries in Mentha value chain has reduced after introduction of futures market, reducing the price spread in the marketing channel from 11-12% to 7.5-10.5%. In case of Cardamom, it has helped to stabilize prices in the spot market.
- f) **Study by IIM Lucknow (2007):** Potato and Mentha Oil markets showed substantial improvements in increased price realization to farmers during the period after the introduction of futures.

Policy emphasis on hedging

The Government of India and regulatory bodies, such as the Reserve Bank of India (RBI), the Securities and Exchange Board of India (SEBI), and the Forward Markets Commission (FMC), have for long been emphasizing the need for hedging. In 2014, the Union government had set up a committee that suggested steps for fulfilling the objectives of price discovery and price risk management on commodity derivatives exchanges. In 2015, the RBI has asked banks to advise their agricultural borrowers to hedge on domestic commodity exchanges. Similarly, the Finance Act, 2015, paves the way for legislative changes that could lead to the introduction of various types of derivative products, such as options and indices, which could meet the hedging needs of various stakeholder groups.

Clear risk management policy—key to success

Hedging is undertaken mainly to shield revenue streams, profitability, and balance sheets of companies against adverse price movements and cyclical reversals. A 2010 survey by L&T Institute of Project Management of 500 corporations in India found three major answers to why companies hedge. The most important was 'to reduce the volatility of the cash flows', next was 'maximising shareholder value', and the third, 'reducing volatility of reported accounting earnings'.

Unfortunately, many companies in India still do not have a coherent risk management policy in place, although they are well aware of the risks they encounter. They can ill-afford to ignore this. Hence, every company needs to chart out a risk management policy, the cornerstone of which should be an effective hedging strategy. A good hedging practice of a company should encompass a clear picture of its risk profile, its risk appetite, and its benefits from risk aversion. Such a strategy is no longer the prerogative of big corporations alone, but is a business necessity for the long-term sustenance of every company—big or small.

¹ Mancini, Massimo (2009), "Corporate risk hedging strategies and shareholders' value creation", Kellogg School Of Management; <https://www.kellogg.northwestern.edu/research/risk/projects/Massimo%20Mancini%20Research.pdf>

² Isengildina, O., Pennings, J.M.E., Irwin, S.H., & Good, D.L. (2006). "U.S. Crop Farmers' Use of Market Advisory Services". *Journal of International Food & Agribusiness Marketing*, Vol. 18(3/4) 2006
