









CASTORSEED

HEDGING PRICE RISK

MCX METAL & ENERGY
Trade with Trust

MCX INVESTOR PROTECTION FUND



Castor oil has a wide range of applications mostly industrial. The castor oil has got indispensable usage in many industries like cosmetics, surface coatings, toiletries, pharmaceuticals, perfumes, soaps and medicines. Castor oil and its derivatives are also used in lubricating formulations. Castor oil is used either in crude form or in refined hydrogenated form.

The end user market for castor oil and castor oil derivatives is already quite diverse. With new applications of castor oil being explored, especially in areas such as pharmaceuticals and biopolymers / bioplastics, these end user markets for castor oil and its derivatives are expected to expand significantly over the next few years.

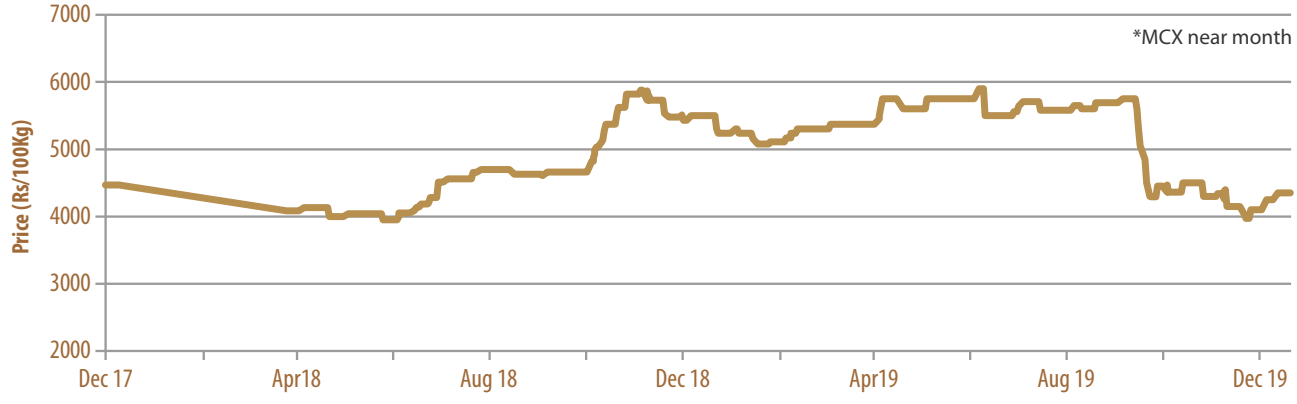
India is also largest exporter of castor seed oil and exports around 80% of its total Castor oil production. China, US, European countries, Japan are the major importers. India's export of Castor oil and derivatives are estimated to be over Rs.3,000 cores per annum and the whole world is highly dependent on India for the supply of this oil which is used in production of some vital chemicals. Exports from India have increased in the recent years, tracking the rise in production.

OVERVIEW

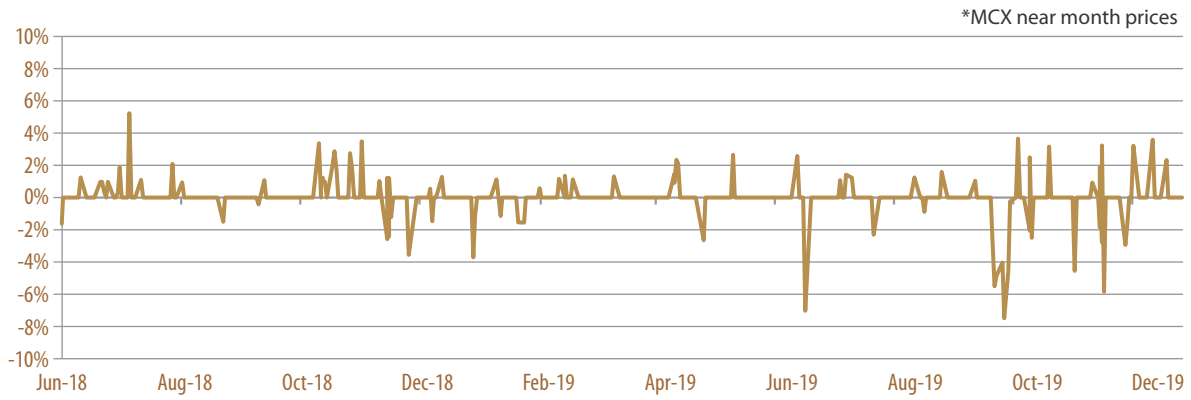
Castor plant (Ricinus communis), is a tropical plant belonging to the Euphorbiaceae family, cultivated in arid and semi-arid regions for its non-edible oilseed. Castor can survive on various types of soils, but it requires appropriate and consistent rainfall. It is sown with the onset of monsoon, during July to August and harvested during December to January. Castor seed has a long shelf life and can be stored for more than three years without any damage for further processing.

The global production of castor seed is around 1.5 – 2.0 million tonnes on an average. It is cultivated in 30 different countries on commercial scale, of which India, China and Brazil are the major castor growing countries accounting for above 90 per cent of the world's production. Historically, Brazil, China and India have been the key producing countries meeting global requirements. Traditionally, the trade in castor oil is significantly more than castor seed. Castor oil is obtained by pressing the seeds followed by solvent extraction of the pressed cake. The global trade in castor oil is in the range of 4.5 – 5 lakh tonnes a year. India is the leader in castor seed production and dominates international castor oil trade. India meets more than 80% of the demand of castor oil thereby enjoying a dominant position in the world castor scenario. Gujarat is the chief producing state, having a share of 77-80% of domestic production, followed by Andhra Pradesh and Rajasthan.

PRICE MOVEMENT*



DAILY AVERAGE VOLATILITY OF CASTOR SEED*



ANNUALIZED VOLATILITY : 20.6%

PRICE RISK MANAGEMENT

Risk management techniques are of critical importance for participants. Modern techniques and strategies, including market-based risk management financial instruments such as 'Castorseed Futures', offered on the commodity exchange platform can improve efficiencies and consolidate competitiveness through price risk management. The importance of risk management cannot be overstated; the government too has set up high-level committees to suggest steps for fulfilling the objectives of price discovery and price risk management on commodity derivatives exchanges. The role of commodity futures in risk management consists of anticipating price movement and shaping resource allocations and achieving these ends can be met through hedging.

HEDGING MECHANISM

Hedging is the process of reducing or controlling risk. It involves taking equal and opposite positions in two different markets (such as physical and futures market), with the objective of reducing or limiting risks associated with price change. It is a two-step process, where a gain or loss in the physical position due to changes in price will be offset by changes in the value on the futures platform, thereby reducing or limiting risks associated with unpredictable changes in price.

IMPORTANCE OF HEDGING

Critical for stabilizing incomes of corporations and individuals, reducing risks may not always improve earnings, but failure to manage risk will have direct repercussion on the risk bearers' long-term income. To gain the most from hedging, it is essential to identify and understand the objectives behind hedging. A good hedging practice, hence, encompasses efforts by companies to get a clear picture of their risk profile and benefit from hedging techniques.

FACTORS INFLUENCING THE MARKET

- Crop development based on monsoon progress in key growing regions
- Domestic demand for castor oil from the major cities & export demand of castor oil
- Variations in castor seed domestic acreage, based on yield and price realization
- Indian, Chinese and Brazilian crop sizes
- The castor seed price tends to firm up during the planting period and eases down during the harvesting period. Prices tend to show significant inter-seasonal variations.

HEDGING STRATEGY-BUYERS

- Buyers can buy their requirements of the year in a futures contract by paying a margin of only 5 % and lock their prices for the entire year.
- They can keep on procuring castor seed in the physical market round the year and square off the corresponding position in futures.
- Thus, even if the castor seed price goes up, they do not incur any loss, because the profit from futures market offsets their increased cost of procurement.
- Thus hedging enables buyers to locking the effective prices at which they trade.

HEDGING STRATEGY-SELLERS

- Sellers can sell their estimated produce in advance at futures market and lock their prices; if the price falls, they are not bothered, because they get profit from the futures market.
- Sellers have both options—either to deliver at futures market on contract maturity or to sell their produce in the local physical market and square off the corresponding position in the futures market. If the price falls, the loss in the physical market is compensated by profits in the futures market.
- When sellers deliver castor seed at futures markets, their timely payment is guaranteed by the Exchange.

Export of Castor oil from India

Period	Production*	Value (₹Cr.)
2017-18^{P}	697	6730
2016-17	599	4522
2015-16	587	4616
2014-15	566	4710

**in 000' MT | P - Provisional*

Source: Directorate of Economics & Statistics, GOI

HEDGING ILLUSTRATIONS

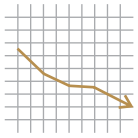
Situation 1: Hedging by a farmer

A farmer in December, after inspecting his fields anticipates production of 10 MT (1MT=1000 Kg) of castor seed in February. However, he is worried of prices falling in December. By hedging, the farmer can lock in a price for his expected production in July itself and protect himself against the possibility of falling prices.

The spot price of castor in September is ₹5,000 per 100 kg and the price of December 201X futures contract is ₹5,200 per 100 kg. The farmer sells (shorts) 1 lot (1 lot = 10 MT) of December 201X futures contracts in September at ₹5,200 per 100 kg. He pays only 5% of the contract value as initial margin to the exchange for taking a position in the futures market.

Case 1:

IF PRICES WERE TO FALL



DETAILS	FUTURES PLATFORM	PHYSICAL MARKET
20-08-201X	SELL Castor seed Futures Contract	
05-12-201X	BUY Castor seed Futures Contract	SELL Castor seed, at ruling price

DATE	CASTOR SEED SPOT PRICE	CASTOR SEED FUTURES PRICE (expiry 20th December 201X)
20-08-201X	5,000	5,200
05-12-201X	4,800	4,900

Futures	20-08-201X	SELL	5,200	05-12-201X	BUY	4,900	**300 (profit)**
Spot	20-08-201X		5,000	05-12-201X	SELL	4,800	**200 (potential loss)**

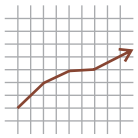
Net selling price: ₹5,100 (₹4,800 + ₹300) per 100 Kg

EXPLANATION

The farmer, short sells 1 lot (1 lot = 10 MT) of 20th December 201X contract on 20th August squares the contracts on 5th December. The value realized from the actual sale of castor seed in the physical market is ₹4,80,000 (4,800 X 100) and cash inflow from futures market due to fall in prices is ₹30,000 (300 X 100). Thus, the net value realized from the sale of castor seed is ₹5,10,000 (4,80,000+30,000), making the net selling price ₹5,100 per 100 kg (5,10,000/100), which is close to the locked-in price of ₹5,200 per 100 kg.

Case 2:

IF PRICES WERE TO RISE



DETAILS	FUTURES PLATFORM	PHYSICAL MARKET
20-08-201X	SELL Castor seed Futures Contract	
05-12-201X	BUY Castor seed Futures Contract	SELL Castor seed, at ruling price

DATE	CASTOR SEED SPOT PRICE	CASTOR SEED FUTURES PRICE (expiry 20th December 201X)
20-08-201X	5,000	5,200
05-12-201X	5,400	5,500

Futures	20-08-201X	SELL	5,200	05-12-201X	BUY	5,500	**300 (loss)**
Spot	20-08-201X		5,000	05-12-201X	SELL	5,400	**400 (potential gain)**

Net selling price: ₹5,100 (₹5,400 - ₹300) per 100 Kg

EXPLANATION

The farmer, short sells 1 lot (1 lot = 10MT) of 20th December 201X contract on 20th August and squares the contracts on 5th December. The value realized from the actual sale of castor seed in the physical market is ₹5,40,000 (5,400 X 100) and cash outflow from futures market due to rise in prices is ₹30,000 (300 X 100).

Thus, the net value realized from the sale of castor seed is ₹5,10,000 (5,40,000-30,000), making the net selling price ₹5,100 per 100 kg (5,10,000/100), which is close to the locked-in price.

Note:

The objective is to lock-in prices and to obtain protection from unwanted price volatility. This has been achieved through hedging on commodity exchange in both the scenarios of rising and falling prices, by which the farmer has been able to sell his castor seed at the locked-in price itself.

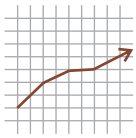
Situation 2. Hedging by an exporter

An exporter of castor oil receives an order in January to be exported in March. Due to quality and logistical concerns, he is planning to buy 1000 MT castor seed from the physical market in March and process it into castor oil, to be sent abroad. However, he is worried that prices would rise by March. By hedging, he can lock in the purchase price in January itself, and protect himself from rise in prices.

The spot price of castor seed in January is ₹4,500 per 100 kg and the price of March 201X contract in futures market is ₹4,800 per 100 kg. The exporter buys (goes long) 100 lots (1 lot = 10 MT) of March 201X futures contracts in January at ₹4,800 per 100 kg. He pays only 5% of the contract value as initial margin to the exchange for taking a position in the futures market.

Case 1:

IF PRICES WERE TO RISE



DETAILS	FUTURES PLATFORM	PHYSICAL MARKET
05-01-201X	BUY Castor seed Futures Contract	
15-03-201X	SELL Castor seed Futures Contract	BUY Castor seed, at ruling price

DATE	CASTOR SEED SPOT PRICE	CASTOR SEED FUTURES PRICE (expiry 20th February 201X)
05-01-201X	4,500	4,800
15-03-201X	5,000	5,200

Futures	05-01-201X	BUY	4,800	15-03-201X	SELL	5,200	**400 (profit)**
Spot	05-01-201X		4,500	15-03-201X	BUY	5,000	**500 (potential loss)**

Net buying price: ₹4,600 (₹5,000 - ₹400) per 100 Kg

EXPLANATION

The exporter buys 100 lots (1 lot = 10MT) of 20th March 201X contract on 5th January and squares the contracts on 15th March, when he buys castor seed in the physical market. The value paid for the actual purchase of castor seed from the physical market is ₹5,00,00,000 (5000 X 100 X 100) and cash inflow from futures market due to rise in prices is ₹40,00,000 (400 X 100 X 100). Thus, the net value paid for the purchase of castor seed is ₹4,60,00,000 (5,00,00,000-40,00,000), making the net buying price ₹4,600 per 100 kg (4,60,00,000/10000), which is close to the budgeted price.

Case 2:

IF PRICES WERE TO RISE



DETAILS	FUTURES PLATFORM	PHYSICAL MARKET
05-01-201X	BUY Castor seed Futures Contract	
15-03-201X	SELL Castor seed Futures Contract	BUY Castor seed, at ruling price

DATE	CASTOR SEED SPOT PRICE	CASTOR SEED FUTURES PRICE (expiry 20th February 201X)
05-01-201X	4,500	4,800
15-03-201X	4,100	4,300

Futures	05-01-201X	BUY	4,800	15-03-201X	SELL	4,300	**500 (loss)**
Spot	05-01-201X		4,500	15-03-201X	BUY	4,100	**400 (potential gain)**

Net selling price: ₹4,600 (₹4,100 + ₹500) per 100 Kg

EXPLANATION

The exporter buys 100 lots (1 lot = 10MT) of 20th March 201X contract on 5th January and squares the contracts on 15th March, when he buys castor seed in the physical market. The value paid for the actual purchase of castorseed from the physical market is ₹4,10,00,000 (4,100 X 100 X 100) and cash outflow to futures market due to fall in prices is ₹50,00,000 (500 X 100 X 100). Thus, the net value paid for the purchase of castor seed is ₹4,60,00,000 (4,10,00,000 + 50,00,000), making the net buying price ₹4,600 per 100 kg (4,60,00,000/10000), which is close to the budgeted price.

Note:
The objective is to lock -in prices to protect from unwanted price volatility. This has been achieved through hedging on futures market in both the scenarios of rising and falling prices, by which the exporter has been able to purchase his castor seed at the budgeted price itself.



HOW MUCH VOLATILITY RISK ARE YOU EXPOSED TO?

Castor Seed witnessed annualized price volatility of about 20.6% in 2019.

THIS MEANS

A castor seed trader with an annual turnover of ₹100 crores was exposed to a price risk of about ₹20.6 crores in 2019

India with estimated castor seed market size of ₹3,000 crores, is exposed to volatility risk of ₹617.68 crores (i.e. 20.6% of holding value)

ARE YOU PREPARED FOR VOLATILITY RISK?

Adoption of a risk management practice, such as hedging on the MCX, can shield against the perils of price volatility.

SALIENT CONTRACT SPECIFICATIONS OF CASTOR SEED FUTURES CONTRACTS

Description	CASTORSEEDMMMYY
Contract Listing	Contracts are available as per the Contract Launch Calendar.
Contract Start Day	Contract launch date shall be the 1st day of contract launch month. If 1st day is a holiday then the following working day.
Last Trading Day	20th of the contract expiry month. If 20th is a holiday, Saturday or Sunday then preceding working day.
Trading Period	Mondays through Fridays
Trading Session	Mondays through Fridays: 9.00 am to 5.00 pm
Trading Unit	10 MT
Quotation/Base Value	Rs. Per Quintal (100 kg)
Price Quote	Ex-warehouse Deesa, exclusive of sales tax/GST
Maximum Order Size	500 MT
Tick Size (Minimum Price Movement)	₹ 1.00
Daily Price Limits	DPL shall have two slabs - Initial and Enhanced Slab. Once the initial slab limit of 3% is reached in any contract, then after a period of 15 minutes, this limit shall be increased further by enhanced slab of 1%, only in that contract. The trading shall be permitted during the 15 minutes period within the initial slab limit. After the DPL is enhanced, trades shall be permitted throughout the day within the enhanced total DPL of 4%.
Initial Margin	Minimum 4% or based on SPAN whichever is higher
Extreme Loss Margin	1%
Additional and/ or Special Margin	In case of additional volatility, an additional margin (on both buy & sell side) and/ or special margin (on either buy or sell side) at such percentage, as deemed fit; will be imposed in respect of all outstanding positions.

Maximum Allowable Open Position

Unit	Numerical Position Limit - Overall Commodity		Numerical Position Limit - Near Month	
	Client	Member*	Client	Member**
MT	11,900	1,90,000	2,975	29,750

*Overall Member-level limits shall be numerical limits or 15% of market –wide open position, whichever is higher.

**Near month Member level position limits shall be equivalent to the one fourth of the overall member level position limit.

SALIENT CONTRACT SPECIFICATIONS OF CASTOR SEED FUTURES CONTRACTS

Delivery Unit	10 MT (with tolerance limit of +/- 2%)
Delivery Period Margin	Delivery period margins shall be higher of: **a.** 3% + 5 day 99% VaR of spot price volatility Or **b.** 25%
Delivery Centre	Deesa (Gujarat)
Additional Delivery Centre (s)	Kadi (Gujarat)
Quality Specification	Castor Seed (Gujarat small seed) with the following specifications:

Oil content	Basis: 47% Accepted: From 45% to 47%, at a discount of 1:2 or part thereof, (Oil content in Castor seed below 47% but within 45% will attract discount. For every 1% decrease in oil content or part thereof, there will be discount of 2% or part thereof in price). Rejected: Below 45%
Fotri (Husk)	Accepted: From 2% to 5%, at a discount of 1:1 or part thereof, and 2%. Rejected: Above 5%
Sand, Silica And Stones	1% Max
Moisture content	4.5 % max

Due Date Rate	The Due Date Rate (DDR) shall be arrived at by taking the simple average of the last three trading days polled spot prices, viz., E0, E-1, & E-2 (E-Expiry date). In the event of the spot prices for any one of E-1 and E-2 not being available the spot price of E-3 would be used for arriving at the average. In case spot prices are not available for both E-1 and E-2, then the average of E-0 and E-3 (two days) would be taken. If all the three days' prices, viz., E-1, E-2 and E-3 are not available, then only one day's price, viz., E-0 will be taken as the DDR.
Delivery Logic	Compulsory

Note: Please refer to the exchange circulars for latest contract specifications.

**** Genuine hedgers having underlying exposure that exceed the prescribed OI limits given in the contract specifications can be allowed higher limits based on approvals.***

REGULATORY BOOSTS FOR HEDGERS:

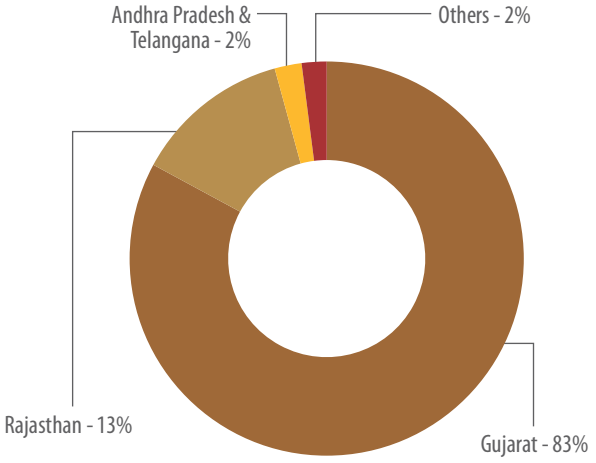
1. **Income tax exemptions for hedging.** As per provisions of the Finance Act, 2013, business profits/losses can be offset by losses/profits undertaken in the commodity derivatives transactions. Thus, hedgers are no longer forced to undertake physical delivery of commodities to prove that their transactions are for hedging and not 'speculation'.
2. **Limit on open position** as against hedging. This enables hedgers to take positions on their exposure in the physical market, and they are allowed to take position over and above the prescribed position limits on approval by the exchange.
3. **Early pay-in.** If a hedger makes an early pay-in of a commodity, he is exempted from paying all applicable margins.

A comprehensive Hedge Policy Document is available at:
https://www.mcxindia.com/docs/default-source/market-operations/trading-surveliance/reports/hedgepolicy.pdf?sfvrsn=2

State-wise Castor seed Production in India								
States	Area (' 000 Hectares)				Production ('000 Tonnes)			
	2015-16	2016-17	2017-18	2018-19	2015-16	2016-17	2017-18	2018-19
Gujarat	781	565	596	534	1150	850	1230	935
Rajasthan	198	170	131	138	150	123	162	145
Andhra Pradesh & Telangana	93	78	58	60	80	64	28	25
Others#	36	32	38	38	20	19	23	23
Total	**1108**	**845**	**823**	**770**	**1400**	**1055**	**1433**	**1127**

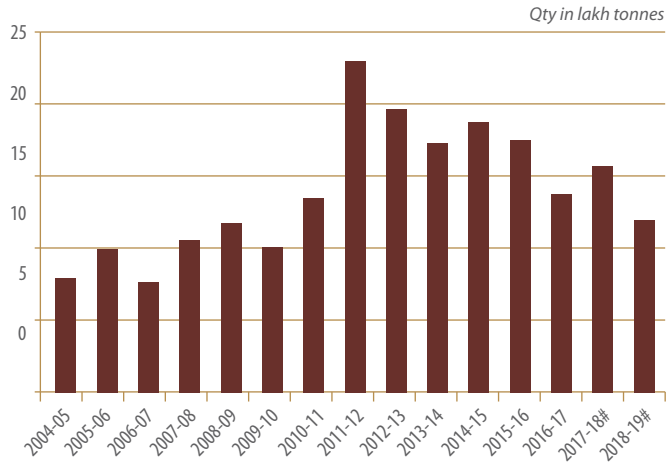
#includes Maharastra, Karnataka, TamilNadu and Orissa
Source: Directorate of Economics & Statistics, GOI

Major Castor Producing States in India (2018-19)



Source: Directorate of Economics & Statistics, GOI

Castor seed Production in India



#estimate
Source: Directorate of Economics & Statistics, GOI



"Businesses like ours are significantly exposed to castor oil price movements and our bottomlines are often adversely affected by the uncertainty and volatility of its prices."

Atul Chaturvedi,
CEO, Adani Wilmar Ltd. and President, Solvent Extractors Association of India.

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