









# RUBBER

## HEDGING PRICE RISK

MCX
METAL & ENERGY
Trade with Trust



*The first use of rubber was by the indigenous cultures of Mesoamerica. The earliest archeological evidence of the use of natural latex from the Hevea tree is from 1650 BC, when rubber was first used for making balls for the Mesoamerican ballgame.*

*In India, commercial cultivation was introduced by British planters, although the experimental efforts to grow rubber on a commercial scale were initiated as early as 1873 at the Calcutta Botanical Gardens. The first commercial Hevea plantations were established at Thattekadu in Kerala in 1902. In later years the plantation expanded to Karnataka, Tamil Nadu and the Andaman and Nicobar Islands of India.*

## OVERVIEW

Rubber, also known as India rubber and gum elastic, is an elastic polymeric substance made from the latex of Hevea Brasiliensis trees. The latex is collected by the process of tapping the plant and is refined and converted into storable and commercial form. The plantation start yielding from 6th year onwards, with an economic life of 32 years.

Hevea Brasiliensis trees grows best in areas with an annual rainfall of just under 2000 mm and at temperatures of 21-28 degrees. Due to these features and the preferred altitude of the tree around 600 metres, the prime growing area is around 10 degrees on either side of the equator.

## APPLICATIONS AND USES

Rubber caters to a spectrum of diverse industries like automobile, aeronautics, electrical and electronics, materials handling, health care, power transmission and has a host of other applications. Natural rubber is not only an excellent spring material, but also forms an effective barrier to water.

Around 50-60% of the global rubber production is used by the tyre manufacturing sector. Some of the other products made of rubber are mattresses, shoe soles, hot water bottles, balloons, rubber boots and seal rings. It also has engineering application in shock absorption, vibration isolation and road surfacing.

## GLOBAL SCENARIO - DEMAND AND SUPPLY

Worldwide consumption for natural rubber has increased steadily in the recent decade and the Asian markets continue to drive demand for the raw material. Thailand, Indonesia, India, China, Malaysia, Vietnam are the major producers of rubber. International Rubber Study Group projected the global production to be close to 13.7 million tons in 2019. Global natural rubber consumption was projected to be close to 13.6 million tons in 2019, of which approx. 6.5 million tons was consumed in India and China alone.

## INDIAN SCENARIO – DEMAND & SUPPLY

India's stands at sixth place in the production of natural rubber and second place in world consumption. Even though the total consumption in the country exceeds production, India manages to export natural rubber as and when there is a price gap between the international market and the domestic market. Indian natural rubber is the preferred raw material because of its unique qualities, when compared to other elastomers, including synthetic rubber.

In India, the peak season for harvesting Rubber is from October to January, while the relatively leaner period is during monsoon. However, Rubber is available throughout the year. Kerala is the main area of cultivation which covers 80% of the total sown area. Majority of the cultivation is concentrated in Kottayam, Pathanamthitta, Kollam and Idukki districts. The other major contributors are Tamil Nadu, North East Region (mainly Tripura, Assam) followed by Karnataka.

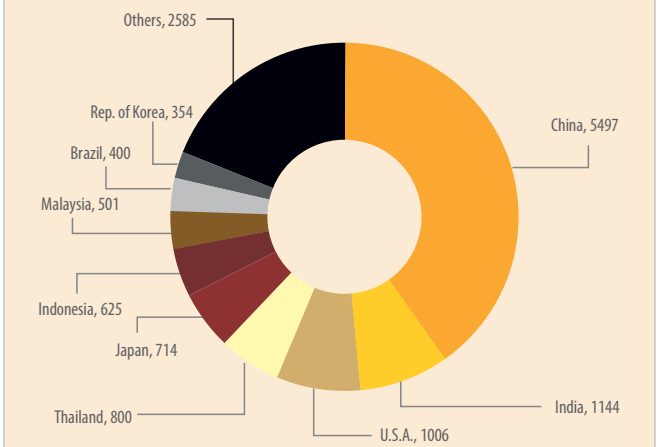
## PRICE RISK MANAGEMENT

Risk management techniques are of critical importance for participants such as tyre manufactures and other stakeholders of the industry. Modern techniques and strategies, including market-based risk management financial instruments such as 'Rubber Futures', offered on the futures platform can improve efficiencies and competitiveness through price risk management. The importance of risk management cannot be overstated; an expert committee

| Domestic Consumption ('000MT) | |
|---|---|
| 2010-11 | 948 |
| 2011-12 | 964 |
| 2012-13 | 973 |
| 2013-14 | 982 |
| 2014-15 | 1,021 |
| 2015-16 | 994 |
| 2016-17 | 1,044 |
| 2017-18 | 1,112 |
| 2018-19 | 1,212 |
| 2019-20 | 1,134 |

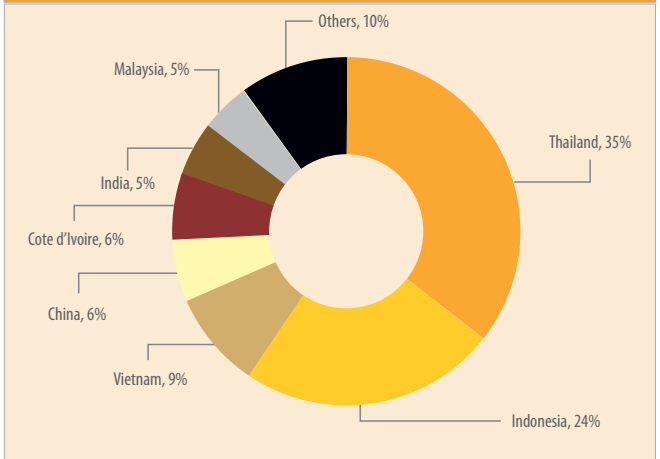
*Source: Trade Estimates, CSIR- CIMAP*

**Country-wise consumption of Natural Rubber - 2019 (p)**




*Source – IRSG (International Rubber Study Group)*
*P - Provisional*

**Country-wise production of Natural Rubber - 2019 (p)**




*Source – IRSG (International Rubber Study Group)*
*P - Provisional*

setup by the government found that commodity derivative exchanges are efficiently fulfilling their functions of price discovery and price risk management.

## 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.

## FACTS ON HEDGING

- Understand the risk profile and appetite while formulating clear hedging objectives.
- Hedging can shield the revenue stream, the profitability, and the balance sheet against adverse price movements.
- Hedging can maximize shareholder value.
- Common avoidable mistake is to book profits on the hedge while leaving the physical leg open to risk.
- Hedging provides differentiation to companies in a highly competitive environment.
- Hedging also significantly lowers distress costs in adverse circumstances confronting a company.
- A properly designed hedging strategy enables hedgers to reduce risk. Hedging does not eliminate risk, it merely helps to transfer risk.
- To gain the most from hedging, it is very essential to identify and understand the objectives behind hedging and get a clear picture of the hedger's risk profile.

**Prices of rubber has almost doubled in the international market between April 2020 to November 2020, creating much trouble for the user industry. Adoption of a risk management practice, such as hedging on commodity derivatives platform can help shield against such price volatilities.**

## FACTORS INFLUENCING PRICE OF RUBBER

- Global & Domestic production
- Weather conditions
- Carry over stock position
- Currency movement

## REGULATORY BOOSTS FOR HEDGERS:

- **Limit on open position as against hedging:** This enables hedgers to take positions over and above prescribed position limits on approval by the exchange and thus can hedge to a great extent their exposure in the physical market.
- **Early Pay-in:** If a hedger makes an early pay-in of commodity, he is exempted from paying all applicable margins.

**India: Cultivated Area & Yield**

| Period | area (ha) | Tappable area | Avg. Yield (Kg/ha) |
|---|---|---|---|
| 2015-16 | 8,10,800 | 5,58,900 | 1,437 |
| 2016-17 | 8,18,000 | 5,84,600 | 1,553 |
| 2017-18 | 8,20,900 | 6,12,000 | 1,458 |
| 2018-19 | 8,22,000 | 6,37,900 | 1,453 |
| 2019-20 | 8,22,300 | 6,63,700 | 1,459 |

*Source: Rubber Board of India*

**India: Production, Exports and Imports** ('000 MT)

| Period | Production | Imports | Exports |
|---|---|---|---|
| 2015-16 | 562 | 458 | 0.9 |
| 2016-17 | 691 | 426 | 21 |
| 2017-18 | 694 | 470 | 5 |
| 2018-19 | 654 | 582 | 5 |
| 2019-20 | 712 | 457 | 13 |

*Source: Rubber Board of India*

## HEDGING ILLUSTRATIONS

Assume a tyre manufacturing company received an order in August 202X, to be delivered in the month of November 202X. To fulfil the order company plans to procure 1,000 Kg of natural rubber in November 202X, considering logistics and storage capacity. In such a scenario, company bears a risk of rise in prices of natural rubber by November 202X. To hedge against the impending price risk, the company decides to buy MCX Rubber November 202X futures contract. The spot price of natural rubber on 12 August 202X was ₹13,000 per 100 Kg and the price of MCX Rubber November Futures contract was ₹13,200 per 100 kg. The manufacturer buys 1 lot (1 lot = 1 tonne) of MCX Rubber November Futures contract on 12 August 202X at ₹13,200 per 100 kg.

| TIME | FUTURES PLATFORM | PHYSICAL MARKET |
|---|---|---|
| 12 August 202X | BUY Rubber Futures Contract | |
| 25 November 202X | SELL Rubber Futures Contract | BUY Natural Rubber |

## Scenario 1:

### RAISING PRICES



(₹ / 100 KG)

| DATE | NATURAL RUBBER SPOT PRICE | MCX RUBBER NOV FUTURES PRICE |
|---|---|---|
| 12 August 202X | ₹13,000 | ₹13,200 |
| 25 November 202X | ₹13,400 | ₹13,700 |

| MARKET | DATE | ACTION | PRICE | DATE | ACTION | PRICE | PROFIT/LOSS |
|---|---|---|---|---|---|---|---|
| Futures | 12 August 202X | BUY | ₹13,200 | 25 November 202X | SELL | ₹13,700 | ₹500 (Profit) |
| Spot | 12 August 202X | | ₹13,000 | 25 November 202X | BUY | ₹13,400 | |

Net buying price: ₹12,900, i.e. (₹13,400 - ₹500)

**EXPLANATION :**

The Treasury Team of tyre manufacturer, buys 1 lot (1 lot = 1 tonne) of MCX Rubber Nov Futures contract on 12 August and squares the contracts on 25 November, when the team buys rubber from the physical market. The value paid for the actual purchase of rubber from the physical market is ₹1,34,00,000 (₹13,400*1,000) and cash inflow from futures platform due to rise in prices is ₹500,000 (₹500*1*1,000). Thus, the net outflow for the purchase of rubber is ₹1,29,00,000 (₹1,34,00,000 - ₹500,000), making the net buying price ₹12,900 per 100 kg (₹1,29,00,000 /1,000), which is around the prevailing spot price at the time of receiving the contract. Thus, by hedging company was able to lock-in the purchase price of rubber at the spot prices prevailing in August 202X.

## BENEFITS OF HEDGING ON MCX

- India's largest commodity exchange
- Wide deliverable range
- Efficient price discovery mechanism wherein there is convergence of financial and commodity market participants
- Highly liquid contracts
- Deliverable contracts
- Highly efficient and transparent market



## Scenario 2: FALLING PRICES



(₹ / 100 KG)

| DATE | NATURAL RUBBER SPOT PRICE | MCX RUBBER NOV FUTURES PRICE |
|---|---|---|
| 12 August 202X | ₹13,000 | ₹13,200 |
| 25 November 202X | ₹12,600 | ₹12,800 |

| MARKET | DATE | ACTION | PRICE | DATE | ACTION | PRICE | PROFIT/LOSS |
|---|---|---|---|---|---|---|---|
| Futures | 12 August 202X | BUY | ₹13,200 | 25 November 202X | SELL | ₹12,800 | ₹400 (Loss) |
| Spot | 12 August 202X | | ₹13,000 | 25 November 202X | BUY | ₹12,600 | |

Net buying price: ₹13,000, i.e. (₹12,600 + ₹400)

**EXPLANATION :**

The Treasury Team of tyre manufacturer, buys 1 lot (1 lot = 1 tonne) of MCX Rubber Nov Futures contract on 12 August and squares the contract on 25 November, when he buys rubber from the physical market. The value paid for the actual purchase of rubber from the physical market is ₹1,26,00,000 (₹12,600*1,000) and cash outflow to futures platform due to fall in prices is ₹4,00,000 (₹400*1*1,000). Thus, the net value realized from the purchase is ₹1,30,00,000 (₹1,26,00,000 + ₹4,00,000), making the net buying price ₹13,000 per 100 kg (₹1,30,00,000/1,000). Thus, by hedging company was able to lock-in the purchase price of rubber at the spot prices prevailing in August 202X.

## SALIENT FEATURES OF MCX RUBBER FUTURES CONTRACT

| | |
|---|---|
| **Symbol** | **RUBBER** |
| Description | RUBBERMMMYY |
| Contract listing | Contracts are available as per the Contract Launch Calendar |
| Contract start day | 1st day of the contract launch month. If 1st is a holiday then the following working day. |
| Last trading day | Last calendar day of the contract expiry month; if last calendar day is a holiday, then the preceding working day. |
| **TRADING** | |
| Trading period | Mondays through Fridays |
| Trading sessions | Mondays through Fridays: 9.00 a.m. to 5.00 p.m. |
| Trading unit | 1 MT (1000 Kgs) |
| Quotation/Base Value | Rs per 100 Kgs |
| Price Quote | Ex - Palakkad, Kerala (exclusive of all tax and levies) |
| Maximum order size | 50 MT |
| Tick size (minimum price movement) | Re 1 |
| 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 10% or based on SPAN, whichever is higher |
| Extreme Loss Margin | Minimum 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 | Maximum Allowable Open Position For individual clients: 11,500 MT<br>For a member collectively for all clients: 1,15,000 MT or 15% of the market wide open position, whichever is higher.<br><br>Near Month Limits For individual clients: 2,875 MT<br>Near month member level position limit shall be equivalent to the one fourth of the overall member level position limit. |

## SALIENT FEATURES OF MCX RUBBER FUTURES CONTRACT

| DELIVERY | |
|---|---|
| Delivery unit | 1 MT and direct multiples thereof |
| Delivery center(s) | At Exchange designated warehouse at Palakkad, Kerala State (Within 100 Kms) |
| Delivery Period Margin ** | Delivery period margins shall be higher of;<br>a. 3% + 5 day 99% VaR of spot price volatility OR b. 25% |
| Quality specifications | Ribbed Smoked Sheets 4 (RSS4)<br>Quality Specifications as provided under Part II Section 1 of the "Green Book" as detailed below:<br>1. Nothing but coagulated Rubber Sheets, properly dried and smoked can be used in making these grades: block, cuttings, or other scrap or frothy sheets, weak, heated or burnt sheets, air dried or smooth sheets not permissible.<br>2. Slight resinous matter (rust) and slight amounts of dry mould on wrappers bale surfaces and interior sheets, found at time of delivery will not be objected to should "rust" or "dry mould" in an appreciable extent appear on more than 20% of the bales sampled, it shall constitute grounds for objection.<br>3. Medium size bark particles, bubbles, translucent stains, slightly over smoked rubber are permissible to the extent shown in the sample.<br>4. Oxidised spots or streaks, weak, heated, under cured, over smoked (in excess of the degree shown in the sample), and burnt sheets are not permissible.<br>5. The Rubber must be dry, firm, and free of blemishes, blisters, sand, dirty packing and all other foreign matter other than specified above as permissible. |
| Staggered Delivery Tender Period | The staggered delivery tender period would be the last 5 trading days (including expiry day) of the contracts.<br>The seller/buyer having open position shall have an option, of submitting an intention of giving/taking delivery, on any day during the staggered delivery period.<br>On expiry of the contract, all the open positions shall be marked for compulsory delivery. |
| Delivery allocation | Allocation of intentions received to give delivery during the day to buyers having open long position shall be as per random allocation methodology to ensure that all buyers have an equal opportunity of being selected to receive delivery irrespective of the size or value of the position. However, preference may be given to buyers who have marked an intention of taking delivery.<br>Funds pay-in of the delivery allocated to the buyer will be on T+2 working days i.e. excluding Saturday, Sunday & Public Holiday.<br>The buyer to whom the delivery is allocated will not be allowed to refuse taking delivery. If the seller fails to deliver, the penal provisions as specified for seller default shall be applicable. |
| Delivery order rate | On Tender Days:<br>The delivery order rate (the rate at which delivery will be allocated) shall be the closing price (weighted average price of last half an hour) on the respective tender day except on the expiry date.<br>On Expiry:<br>On expiry date, the delivery order rate or final settlement price shall be the Due Date Rate (DDR) and not the closing prices. |
| Due Date Rate (Final settlement price) | For contracts where Final Settlement Price (FSP) is determined by polling, unless specifically approved otherwise, the FSP shall be arrived at by taking the simple average of the last polled spot prices of the last three trading days viz.,E0 (expiry day), E-1 and E-2. In the event the spot price for any one or both of E-1 and E-2 is not available; the simple average of the last polled spot price of E0,E-1, E-2 and E-3, whichever available, shall be taken as FSP. |
| Delivery Logic | Compulsory delivery |

*The Margin Period of Risk (MPOR) shall be in accordance with SEBI Circular no. SEBI/HO/CDMRD/DRMP/CIR/P/2020/15 dated January 27, 2020. For applicable minimum MPOR, refer latest circulars issued by MCXCCL from time to time. | ** As per SEBI directive SEBI/HO/CDMRD/DRMP/CIR/P/2016/77 dated Sep. 01, 2016.

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

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