



# COMMODITY DERIVATIVES AND RISK MANAGEMENT

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IIT Kharagpur

**TYPE OF COURSE** : Rerun | Elective | PG  
**COURSE DURATION** : 8 weeks (26-Jul' 21 - 17-Sep' 21)  
**EXAM DATE** : 26 Sep 2021

**PRE-REQUISITES** : Basic Knowledge on Financial Markets and Derivatives

**INTENDED AUDIENCE** : Elective Course PG Course MBA/ Masters in Finance/Ph.D

**INDUSTRIES APPLICABLE TO** : Commodity price risk hedging team members of companies which are producer and consumers of commodities, commodity derivatives traders, MBA students specializing in finance and risk management.

## **COURSE OUTLINE :**

Commodity derivatives market has witnessed tremendous growth in India. Since the setting up of different national level demutualized commodity exchanges such as NCDEX, MCX and NMCE about a decade back, the Indian commodity derivative market has achieved considerable growth in trading volume, types of commodities contracts traded, warehouse development and also has brought in significant changes to spot trading of commodities. The course covers almost the entire spectrum of commodities traded in the Indian commodity market, including agricultural commodities, crude oil, base metal, precious metal, and electricity. This course will also cover derivative contracts on weather, carbon, freight and real estate traded in international exchanges such as CME, LME, LBMA, DGCX and The Baltic Exchange etc. Fundamental concepts such as value-at-risk based margin calculation, seasonality, minimum variance hedge ratio, basis risk, commodity index creation, pricing and valuation of derivatives contracts will be discussed in earlier part of the course. Subsequently futures, options, swaps, tapos, spread contracts like crack/crush/spark on commodities mentioned earlier can be used by companies to mitigate price risk will also be discussed in detail.

## **ABOUT INSTRUCTOR :**

Prabina Rajib, PhD (Finance, IIT Kharagpur) is Professor, Vinod Gupta School of Management, Indian Institute of Technology Kharagpur, West Bengal. She has more than a decade of academic experience and has presented and published many papers in national and international journals and conferences. She was also a Fulbright scholar at Purdue University, USA. Dr. Prabina Rajibs areas of interests include Indian Capital and Derivative Markets, FDI entry strategy and Mergers and Acquisitions by Indian Companies. She has also been a guide to many PhD scholars and has authored a book on Stock Exchanges, Investments and Derivatives.

## **COURSE PLAN :**

**Week 1:** Introduction to Commodity Derivatives, Commodity Exchanges and Commodity Contracts.

**Week 2:** Pricing Commodity Forward, Futures & Options

**Week 3:** Agricultural Price Risk Management

**Week 4:** Crude oil & Base Metal Derivatives

**Week 5:** Gold & Electricity Price Risk Management

**Week 6:** Weather and Carbon Derivatives

**Week 7:** Derivatives on Freight, Water, Property and Payroll

**Week 8:** Lessons from major commodity price manipulations and commodity derivative losses