

Commodity Price Dynamics: A Study on the Indian Commodity Market

Abstract

A commodity is a marketable quantity produced to satisfy basic human wants and needs. It encompasses agricultural, metals, energy and social commodities. Trading of commodities are associated with supply and demand functions regulating their price. Commodity prices are characterized by periods of crisis and extreme volatility as their price dynamics is governed by a wide range of complex factors, including derivative markets and relation between futures prices and spot prices. This complicates the task of predicting the price movement in commodity markets, crucial for developing countries that rely on commodity market trade. India being one of the major producers of commodities like sugar and tea, understanding their price dynamics is important for providing a consistent framework for planning industrial expansion, forecasting price movements or studying the effects of regulatory policies.

The present study is a step in this direction and tries to: (i) identify the basic time series properties of Indian commodity market data; (ii) characterize the classical and deviation cycles extracted from the commodity prices and compare them with the cycles present in the international commodity market; (iii) evaluate the accuracy of different linear and nonlinear models to forecast commodity spot prices; and (iv) ascertain the predictability of futures prices of sugar in the Indian commodity market. The study is an attempt to reestablish certain documented facts regarding the general behavior of commodity prices, e.g., their nonlinear behaviour. Moreover, the comparison of classical cycles in the Indian commodity market with those in the international market finds the average duration of the boom and slump phases to be less in the Indian commodity market. The rates of increase and decrease are smaller as well. Though predicting price movement is a difficult task, the study shows that use of nonlinear methodologies can improve the forecasting accuracy. Finally, it reestablishes the predictability of commodity futures.

Keywords: Commodity price dynamics, Price persistence, Classical cycles, Deviation cycles, Spot price forecasting, Sugar futures.