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***K. A. Kakade, A. K. Mishra*[1]**

The impact of macroeconomic and oil shocks on India's non-ferrous metal prices: A structural-VAR approach

This paper compares the value shocks from the real interest rates, real exchange rates, real crude prices, and other key macroeconomic variables on the metal prices. The structural VAR models are estimated on monthly data over the period 2005m12–2019m12 to determine the asymmetric effect of the macroeconomic shocks and determine whether commodity prices display overshooting behavior in response to these shocks. The impulse response and the forecast error variance decomposition function analyze the short-term impacts on the Indian non-ferrous metal prices. The results indicate that the metals index, and crude oil have a significant positive impact on the prices of metals, while the real interest rate negatively affects India's metal prices. The impact of the real exchange rate and own shocks on real metal prices is found to be insignificant. Metal prices tend to display an overshooting behavior in response to changes in the real interest rate. Besides, the forecast error variance decomposition reveals the incremental contribution of crude oil prices in explaining the behaviour of metal prices.

Keywords: real interest rates; real effective exchange rates; crude oil; metal production index; impulse responses; non-ferrous metal; SVAR.
JEL classification: E37; E47; Q31.

1. Introduction

Commodity markets have always been a much-debated topic. They have always attracted the attention of researchers as the commodities are closely related to industrial production and are an early signal for possible inflation in the system in the future (Browne, Cronin, 2010). Sahi and Raizada (2006) find that growth in commodity markets significantly impacts inflation in the Indian economy. The commodity markets also serve as a vehicle of investment for big corporations and play an indispensable role in allowing giant corporations to hedge their risks and protect their long-term value. They are also crucial for consuming and producing countries as they form a critical input factor in several industries. One intriguing quality of commodities is their propensity to comove because of a similar shock. In this manner, prices that ought to not be related have a typical development in time. For Pindyck and Rotemberg (1990), the joint

[1] **Kakade, Kshitij Abhay** — Birla Institute of Technology and Science (BITS), Goa, India; kshitijkakade2705@gmail.com.
Mishra, Aswini Kumar — Birla Institute of Technology and Science (BITS), Goa, India; aswinimishra1@gmail.com; aswini@goa.bits-pilani.ac.in.