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The Interdependence between Commodity-Price and GDP Cycles: A Frequency Domain Approach

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We study the interdependence between real commodity prices and world real GDP using long-term annual data since 1870, by performing two empirical exercises. First, we compute long-term and medium-term cycles and measure their degree of synchronization for different leads and lags. Second, we perform several causality tests in order to better understand the nature of their interdependence. Our results show that GDP and commodity-price cycles are correlated, and there is evidence of short-term causality between them. However, there is no evidence of Granger causality from GDP to medium and long term cycles of commodity prices. This finding is consistent with the technology-based theories of commodity-price cycles. Searching for a supply-side determinant, we study the interdependence between oil-price and the remaining commodity-price cycles. Our results imply that oil prices are key drivers of metal price cycles for all fluctuation frequencies.

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