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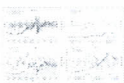


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Testing commodity futures market efficiency under time-varying risk premiums and heteroscedastic prices

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Highlights

- We propose a new futures market efficiency test in the presence of a time-varying risk premium.
- A simulation shows that the new test is robust and superior compared to the conventional methods.
- Results from 79 commodities reveal that efficiencies and premiums vary across market sectors.
- The global financial crisis has improved the efficiency and affected the trading volumes of commodity futures.

Abstract

We propose a novel test to measure market efficiency while estimating the time-varying risk premiums of commodity futures, given that the prices are heteroscedastic. The risk premium is estimated using a state-space model with a Kalman filter modified for heteroscedasticity. Using 79 commodity futures traded on 16 exchanges during the period 2000–2014 and a Monte Carlo simulation, we demonstrate that the proposal produces robust results compared with conventional approaches. The global financial crisis has improved the efficiency and affected the trading volumes of commodity futures, but it has had no effect on the average or the volatility of risk premiums.

Keywords

Commodity futures; Market efficiency; Futures risk premium; State-space model; Kalman filter

JEL Classification

G13; G14; G15

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