

Call for Papers: Special Issue on PROBABILISTIC AND STATISTICAL METHODS IN COMMODITY RISK MANAGEMENT



The journal of ISBIS (International Society for Business and Industrial Statistics), *Applied Stochastic Models in Business and Industry* (ASMBI), <https://onlinelibrary.wiley.com/journal/15264025>, is inviting contributions for a special issue devoted to

PROBABILISTIC AND STATISTICAL METHODS IN COMMODITY RISK MANAGEMENT.

The rich world of finance continually offers new products on which investors can bet. In this context, commodities play an important role, representing an ancient instrument of financial exchange with incredibly topical implications. Indeed, investments in commodities and options written on them form the basis of a broad academic and applied financial literature, and their modeling represents a topic in continuous evolution. In this macro-theme, we see two entangled aspects that make the commodities market modeling particularly relevant in investment theory and applications. From a purely quantitative point of view, the dynamics of commodity prices are complicated to express. Indeed, those prices show peculiar characteristics, such as seasonality, presence of peaks, and time-dependent volatility. Therefore, for price forecasting, the developed stochastic models must be at the same time rich enough to capture these aspects and mathematically tractable. From a more applied perspective, commodities are a reasonable alternative to standard financial securities, whose fragility has been debated in the context of the last financial crisis. Indeed, their importance in the global financial industry has been advocated mainly due to their importance in improving inflation-adjusted returns and also for the diversification benefits they could provide over fixed-income and equity investments.

In this respect, investing in the

- mining and minerals sector (for instance steel, coal, copper, gold);
- agricultural sector (for instance cotton, sugar, wheat, coffee);
- energy sector (for instance natural gas, oil, biofuels, electricity)

enormously enlarges the possibility to reach an efficient capital allocation. Moreover, a broader look at the commodity spot and future markets should also include considerations about environmental strategies and sustainable economics, the impact on climate change and the social aspects of finance. On top of this, investing in commodities is risky: prices can widely fluctuate, supply and demand can stay unbalanced, storing and transportation costs may increase in particular periods due to unpredictable events. Business lines and financial portfolios can be hit hard by these adverse outcomes, therefore these risks must be managed. This special issue aims at collecting high-quality contributions that can offer a broad perspective on statistical models capable of capturing the price dynamics of commodities and methods to hedge the aforementioned risks, highlighting their innovative applications in an ever evolving complex financial environment.

Contributions from multiple areas are welcome, and they might range from more exquisitely technical aspects of modeling commodity prices to the practical implications of the actual pandemic on the commodity market recent developments. The displayed models, the computational techniques and the data methodologies can rely on stochastic processes, statistical analysis, time series forecasting, derivative pricing and hedging, machine learning, deep neural networks, Monte Carlo simulations, data mining, risk estimation and management, and related tools.

Papers should present innovative methodologies and/or forceful applications of existing methods. All submissions will go through the standard, selective review process of ASMBI. Submissions are possible until September, 30th, 2022 through the website <https://wiley.atyponrex.com/journal/ASMB>.

Please follow the ASMBI author submission guidelines given on the ASMBI website and click on the box about submissions for special issues, selecting "Commodity risk" when prompted.

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