



Volume 0, Issue 0

Time-varying tail risk in BRIC stock markets under global shocks: An ADCC-based approach

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Abstract

This study develops a robust market risk framework for BRIC portfolios navigating heightened global uncertainty. By applying the Bai-Perron test, multiple breakpoints emerged within the volatility series, particularly during the COVID-19 pandemic. The inclusion of breakpoint dummy variables into a rolling-window GARCH model was found to be statistically insignificant, implying that rolling estimation sufficiently captures regime shifts autonomously. Using a standard ADCC-GARCH estimation, the results show that BRIC markets exhibit strong volatility persistence, heavy tails, and stable long-run correlations. The portfolio optimization for the subsequent period after 2022 reveals China and India as dominant time-varying allocation drivers during the Russia-Ukraine conflict. Finally, dynamic VaR and ES forecasts, validated by conservative yet statistically reliable backtest results, indicate that the proposed ADCC-GARCH framework accurately quantifies severe tail risk in shock-prone emerging markets.

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Minimax causal inference under tail heterogeneity

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Abstract

Standard causal estimators deteriorate when treatment modifies the tail index of outcomes. I generalize the maximum domain of attraction to nonstationary triangular arrays, establishing uniform convergence of block maxima to time-varying generalized extreme value distributions. Under such shifts, the supports of the limiting distributions separate, likelihood ratios are unbounded, and inverse probability weighting loses root- n consistency and asymptotic normality once the heavier tail index exceeds one half. I derive minimax lower bounds for the causal estimation rate; a tail-adaptive doubly robust estimator attains them up to logarithms. In simulations, tail adaptation cuts integrated mean absolute error by 20 to 41 percent at crisis-scale samples and stabilizes performance under strong tail heterogeneity. An application to bank stock returns around the 2020 Federal Reserve emergency facilities illustrates the framework.

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Test

John Conley
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Abstract

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