Sequential Monitoring for Changes in Market Intergration

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Abstract

This research propose a novel sequential monitoring test to date the changes in market integration via the VAR-approximation of a mixed time series panel with common factors, even the the exact form of each series of this model is unknown. This test is based on the fluctuation test by Chu *et al.*(1996) and its limiting distribution follows Brownian Bridge, being free of model parameters. Neither does it need to use the bootstrap procedure or long run variance framework. In particular, this test statistics does not rely on the estimation of common factors and resulting factor loadings, and thus corresponding biased outcomes could be reduced. The convincing size control and power performance are validated through Monte Carlo simulations aligning with reality, including the case where the underlying processes include weak factors. Our procedure avoids spurious breaks caused by conventional retrospective tests. In addition, our approach performs as a guidance to fund managers in monitoring the market patterns and further rearrange portfolio allocations.

KEYWORDS: sequential monitoring test, Vector Autoregression (VAR) Approximation, spurious breaks, factor loading, mixed time series panel.

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