

Abstract

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"General dynamic factors and volatilities"

Decomposing volatilities into a common market-driven component and an idiosyncratic item specific one is an important issue in financial econometrics. This, however, as any study involving market-related features, requires the statistical analysis of large panels of time series, hence faces the usual challenges associated with high-dimensional data. Factor model methods in such a context are an ideal tool, but they do not readily apply to the analysis of volatilities. Focusing on the reconstruction of the unobserved market shocks and the way they are loaded by the various items (stocks) in the panel, we propose an entirely nonparametric and model-free two-step general dynamic factor approach to the problem, which avoids the usual curse of dimensionality. Applied to the S&P100 asset return dataset, the method provides evidence that a non-negligible proportion of the market-driven volatility of returns originates in the volatilities of level-idiosyncratic components.