Quasi-maximum Likelihood Estimation of Seasonal Long-memory Limiting Aggregate Processes

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We study the autocorrelation structure and the spectral density function of aggregates from a discrete-time process. The underlying discrete-time process is assumed to be a stationary Seasonal AutoRegressive Fractionally Integrated Moving-Average (SARFIMA) process, after suitable number of differencing if necessary, and the aggregation size is assumed to be a multiple of the periods of the underlying seasonal process. We derive closed-form expressions for the limiting autocorrelation function and the normalized spectral density of the aggregates, as the aggregation size goes to infinity. Furthermore, we consider the application of the limiting aggregate model for modeling aggregated seasonal long-memory data. (joint work with Kung-Sik Chan)

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