Detecting Almost Periodicity in mean Function with Application to Business Cycle Comovement

Authors: Łukasz Lenart and Mateusz Pipień

We propose subsampling procedure to make inference about almost periodic structure in mean function for multivariate almost periodically correlated time series. Following by Lenart (2013) the asymptotic normality was proved for normalized Fourier coefficient estimator and the consistency of subsampling procedure was shown. Next the asymptotically consistent test for frequency significance was proposed. Similarly as in Lenart and Pipień (2013) it was shown that some characteristics of business cycle comovement can be modelled by discrete spectrum parameters of the Almost Periodically Correlated time series. Finally, the proposed test was applied in order to make formal statistical inference about the business cycle comovements.