Almost Periodically Correlated Time Series in Business Fluctuations Analysis

Łukasz Lenart*, Mateusz Pipień†

Abstract

We propose a non-standard subsampling procedure in order to make formal statistical inference about the business cycle, one of the most important unobserved feature characterising fluctuations of economic growth. We show that some characteristics of business cycle can be modelled in a non-parametric way by discreet spectrum of the Almost Periodically Correlated (APC) time series. On the basis of estimated characteristics of this spectrum it is possible to extract business cycle by filtering. On the basis of our results we characterise the man properties of business cycles in industrial production index for Polish economy.

* Economic Institute in National Bank of Poland, Department of Mathematics in Cracow University of Economics, e-mail: lukasz.lenart@uek.krakow.pl

† Economic Institute in National Bank of Poland, Department of Econometrics and Operations Research in Cracow University of Economics, e-mail: eepipien@cyf-kr.edu.pl