Trend-Cycle Decomposition Allowing for Multiple Smooth Structural Changes in the Trend of US Real GDP

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Abstract

A key feature of Flexible Fourier Form (FFF) is that the essential characteristics of multiple structural breaks can be captured using a small number of low frequency components from a Fourier approximation. We introduce a variant of the FFF into the trend function of US real GDP in order to allow for gradual effects of unknown numbers of structural breaks occurring at unknown dates. We find that the hypothesis of no breaks can be rejected, and the Fourier components are significant. Our new cycle matches the NBER chronology very well, especially for the Great Recession of 2009.

Keywords: Trend-Cycle Decomposition; Flexible Fourier Form; Smooth Trend Breaks

JEL Classification: E32, E37, C32

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