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ACCEPTED MANUSCRIPT

Estimating the Taylor Rule in the Time-Frequency Domain*†

Luís Aguiar-Conraria‡ Manuel M. F. Martins§ Maria Joana Soares¶

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Abstract

We present the first assessment of U.S. monetary policy across time and frequencies within the Taylor Rule framework. We derive a novel wavelet tool — the partial wavelet gain — to estimate a parametric equation relating the federal funds rate to inflation and the output gap. We detect a gradual shift of the focus of policy from short cycles to intermediate cycles at the beginning of the Great Moderation, followed by a strengthening of policy's reaction to long fluctuations once credibility was attained, and, during the Great Recession, a renewed interest in shorter output cycles. We document that the violation of the Taylor principle until the early 1980s and the strengthening of the reaction of policy to inflation thereafter were more marked at intermediate than at long cycles. Overall, we also detect lead-lag relationships between the policy rate and inflation and the output gap that differ along time and cyclical frequencies.

Keywords: Monetary Policy; Taylor Rule; Partial Wavelet Gain; Time-Frequency Estimation; Continuous Wavelet Transform.

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†The data and MatLab scripts necessary to replicate all our results are available for download at http://sites.google.com/site/aguiarconraria/joanasoares-wavelets. In the same website, the reader can find and freely download a wavelet MatLab toolbox that we wrote.

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