Accepted Manuscript

Title: Wavelet-based monetary and fiscal policy in the Euro area

Authors: Patrick M. Crowley, David Hudgins

PII: S0161-8938(17)30007-8
DOI: http://dx.doi.org/doi:10.1016/j.jpolmod.2017.01.005
Reference: JPO 6333

To appear in: *Journal of Policy Modeling*

Received date: 5-10-2016
Revised date: 14-12-2016
Accepted date: 2-1-2017

Please cite this article as: Crowley, Patrick M., & Hudgins, David., Wavelet-based monetary and fiscal policy in the Euro area.*Journal of Policy Modeling* http://dx.doi.org/10.1016/j.jpolmod.2017.01.005

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

ACCEPTED MANUSCRIPT

Wavelet-based monetary and fiscal policy in the Euro area

Patrick M. Crowley[a], David Hudgins[b*]

[a]*Department of Decision Sciences and Economics, College of Business, OCNR 373, 6300 Ocean Drive, Texas A & M University – Corpus Christi, Corpus Christi, TX, 78412 USA*
[b]*Department of Decision Sciences and Economics, College of Business, OCNR 314, 6300 Ocean Drive, Texas A & M University – Corpus Christi, Corpus Christi, TX, 78412 USA*

[*]Corresponding author: Tel.: +1–361–825–5574; fax: +1–361–825–5574
E-mail address: david.hudgins@tamucc.edu

JEL classifications: C49 . C61 . C63 . C88 . E52 . E61

Abstract. This paper first applies the MODWT (Maximal Overlap Discrete Wavelet Transform) to Euro area quarterly GDP data from 1995 – 2014 to obtain the underlying cyclical structure of the GDP components. We then design optimal fiscal and monetary policy within a large state-space LQ-tracking wavelet decomposition model. Our study builds a MATLAB program that simulates optimal policy thrusts at each frequency range where: (1) both fiscal and monetary policy are emphasized, (2) only fiscal policy is relatively active, and (3) when only monetary policy is relatively active. The results show that the monetary authorities should utilize a strategy that influences the short-term market interest rate to undulate based on the cyclical wavelet decomposition in order to compute the optimal timing and levels for the aggregate interest rate adjustments. Given that central bank rates are adjusted in discrete steps, this implies that central bank monetary policy adjustments will be sub-optimal. We also find that modest emphasis on active interest rate movements can alleviate much of the volatility in optimal government spending, while rendering similarly favorable levels of aggregate consumption and investment. This research is the first to construct joint fiscal and monetary policies in an applied optimal control model based on the short and long cyclical lag structures obtained from wavelet analysis.

***Keywords*:** Discrete Wavelet Analysis, Euro area, Fiscal Policy, LQ Tracking, Monetary Policy, Optimal Control

1. Introduction

This study combines discrete wavelet analysis, the macroeconomic accelerator model, and optimal control theory to generate fiscal and monetary policy interactions in an LQ tracking econometric model. The accelerator model has proved to be a useful theoretical and empirical tool over many decades since Samuelson (1939). Chow (1967),

Download English Version:

https://daneshyari.com/en/article/5101676

Download Persian Version:

https://daneshyari.com/article/5101676

Daneshyari.com