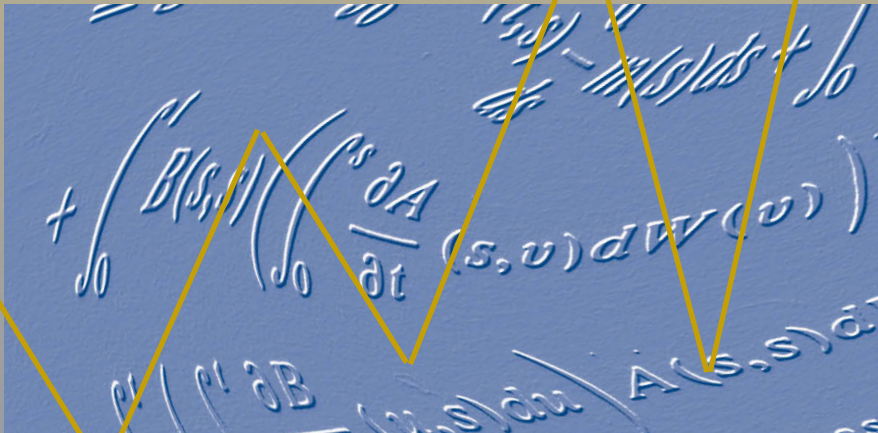


VOLUME 21, NUMBER 6, SEPTEMBER 2017

MACROECONOMIC DYNAMICS



EDITOR: WILLIAM A. BARNETT

CAMBRIDGE
UNIVERSITY PRESS

MACROECONOMIC DYNAMICS

Editor: William A. Barnett, University of Kansas, Department of Economics, 356 Snow Hall, 1460 Jayhawk Boulevard, Lawrence, KS 66045–7523, USA, and The Center for Financial Stability, 1120 Avenue of the Americas, 4th Floor, New York, NY 10036, USA.

Book Review Editors: Michele Boldrin, Department of Economics, Washington University, One Brookings Drive, St. Louis, MO 63130, and Universidad Carlos III, Madrid; Gregory D. Hess, President's Office, Wabash College, W. Wabash Avenue, Crawfordsville, IN 47933.

Special Issues Editors: Stephen Turnovsky, Department of Economics, Box 353330, University of Washington, Seattle, WA 98195; Lee Ohanian, Department of Economics, UCLA, 2261 Bunche Hall, 405 Hilgard Avenue, Los Angeles, CA 90024.

Editorial Information System Manager: Stephen E. Spear, Graduate School of Industrial Administration, Carnegie Mellon University, Pittsburgh, PA 15213.

Local Area Network Manager: Nathan Haley, Lawrence, Kansas.

Editorial Associate: Melinda Barnett, University of Kansas.

Advisory Editors:

Jean-Pascal Bénassy (*CEPREMAP, Paris*), Willem Buiter (*London School of Economics and Political Science, London*), Francis X. Diebold (*University of Pennsylvania*), Steven Durlauf (*University of Wisconsin*), Douglas Gale (*New York University*), Giancarlo Gandolfo (*Accademia Nazionale dei Lincei, Rome*), Roger Guesnerie (*DELTA, Paris*), Takatoshi Ito (*University of Tokyo*), Timothy Kehoe (*University of Minnesota*), Finn Kydland (*Carnegie Mellon University*), Lung-Fei Lee (*Ohio State University*), Adrian Pagan (*Sydney University, Australia*), Robert Townsend (*Massachusetts Institute of Technology*), Mark Watson (*Princeton University*), Kenneth West (*University of Wisconsin*), Michael Woodford (*Columbia University*), Randall Wright (*University of Wisconsin, Madison*)

Associate Editors:

Gaetano Antinolfi (*Washington University*), Jasmina Arifovic (*Simon Fraser University*), Pierpaolo Benigno (*UISS Guido Carli, Rome*), Joydeep Bhattacharya (*Iowa State University*), Volker Böhm (*University of Bielefeld, Germany*), Benjamin Born (*University of Bonn, Germany*), Hamed Bouakez (*HEC Montreal, Canada*), Raouf Boucekine (*Université Catholique de Louvain, Belgium*), Jeffrey Campbell (*Federal Reserve Bank of Chicago*), Shanka Chakraborty (*University of Oregon*), Marcelle Chauvet (*University of California at Riverside*), Christophe Deissenberg (*University d'Aix-Marseille II*), Juan Dolado (*European University Institute, Italy*), Huberto Ennis (*Federal Reserve Bank of Richmond*), Alvaro Escribano (*Universidad Carlos III de Madrid, Spain*), Emilio Espino (*Universidad Torcuato di Tella, Argentina*), George Evans (*University of Oregon*), Ester Faia (*Goethe University of Frankfurt*), Roger Farmer (*UCLA*), Luisa Fuster (*Universidad Carlos III de Madrid, Spain*), Oded Galor (*Brown University and Hebrew University of Jerusalem*), Luca Gambetti (*Universitat Autònoma de Barcelona*), Antonio Guarino (*University College, London*), Thorvaldur Gylfason (*University of Iceland*), Niels Haldrup (*Aarhus University, Denmark*), John Hassler (*Stockholm University*), Moshe Hazan (*Tel-Aviv University*), Per Hjertstrand (*Research Institute of Industrial Economics, Sweden*), Cars Hommes (*University of Amsterdam, The Netherlands*), Kevin Huang (*Vanderbilt University*), Fredj Jawadi (*Université d'Evry, France*), Leo Kaas (*University of Konstanz, Germany*), Takashi Kamihigashi (*Kobe University, Japan*), John Keating (*University of Kansas*), Todd Keister (*Rutgers University*), Moritz Kuhn (*University of Bonn*), David Lagakos (*University of California, San Diego*), Blake LeBaron (*Brandeis University*), Iourii Manovskii (*University of Pennsylvania*), David Marshall (*Federal Reserve Bank of Chicago*), Alfredo Medio (*University of Udine, Italy*), Qinglai Meng (*Oregon State University*), Jianjun Miao (*Boston University*), Kaushik Mitra (*University of Birmingham, UK*), Omer Moav (*The Hebrew University of Jerusalem*), Cyril Monnet (*University of Bern, Switzerland*), Gernot Müller (*University of Tübingen, Germany*), Lee Ohanian (*UCLA*), Patrick Pintus (*Université de la Méditerranée & GREQAM, France*), Julien Prat (*CNRS, CREST, France*), Bruce Preston (*Monash University, Australia*), Francisco Ruge-Murcia (*McGill University, Canada*), Gilles Saint-Paul (*CEPREMAP, France*), Argia M. Sbordone (*Federal Reserve Bank of New York*), Apostolos Serletis (*University of Calgary, Canada*), Tony Smith (*Yale University*), Gerhard Sorger (*University of Vienna, Austria*), Stephen Spear (*Carnegie Mellon University*), George Tavlas (*Bank of Greece*), Stephen Turnovsky (*University of Washington*), Farshid Vahid (*Monash University, Australia*), Nicolaas Vriend (*Queen Mary, University of London*), Neng Wang (*Columbia University*), Ronald Wendner (*University of Graz, Austria*), Francesco Zanetti (*University of Oxford*)

MACROECONOMIC DYNAMICS

Volume 21, Number 6, September 2017

Contents

ARTICLES

- Cash-in-Advance Constraint with Status and Endogenous Growth
Ken-ichi Kaminoyama and Taketo Kawagishi 1235
- Credit Markets and Investment in Renewable Energy Under Uncertainty
Alexandra Vinogradova 1252
- The Cyclical Behavior of Unemployment and Vacancies with Loss of Skills During Unemployment
Victor Ortego-Marti 1277
- Coin Assaying and Commodity Money
Vincent Bignon and Richard Dutu 1305
- Multivariate Trend–Cycle Extraction with the Hodrick–Prescott Filter
Federico Poloni and Giacomo Sbrana 1336
- Optimal Savings for Retirement: The Role of Individual Accounts
Julia Le Blanc and Almuth Scholl 1361
- Output Externalities on Total Factor Productivity
Julio Dàvila 1389
- Estimating the Natural Rate of Hours
Tino Berger and Hauke Vierke 1426
- Dynamic Analysis of Reductions in Public Debt in an Endogenous Growth Model with Public Capital
Noritaka Maebayashi, Takeo Hori, and Koichi Futagami 1454

NOTES

- A Note on Foreign Aid, Human Capital, and Welfare
Hafedh Bouakez and Fabienne E. Gouba 1484
- A Note on the Size Distribution of Consumption: More Double Pareto than Lognormal
Alexis Akira Toda 1508

SUBSCRIPTION INFORMATION: *Macroeconomic Dynamics* (ISSN 1365-1005) is published eight times a year in January, March, April, June, July, September, October, and December. Annual subscription rates for Volume 21, 2017: Institutional rate is (print and electronic) \$1341.00 in the USA, Canada, and Mexico, £810.00 + VAT elsewhere. Institutional rate (electronic only) \$979.00 in the USA, Canada, and Mexico, £597.00 + VAT elsewhere. Institutional rate (print only) \$1242.00 in the USA, Canada, and Mexico, £737.00 + VAT elsewhere. Individual rate is (print and electronic) \$273.00 in the USA, Canada, and Mexico, £155.00 + VAT elsewhere. Individual rate (print only) \$265.00 in the USA, Canada, and Mexico, £152.00 + VAT elsewhere. Students (print only) \$134.00 in the USA, Canada, and Mexico, £50.00 + VAT elsewhere. For members of the Econometric Society, the Society for the Advancement of Economic Theory, the Society for Nonlinear Dynamics and Econometrics, the Society for Computational Economics, and the Society for the Promotion of Economic Theory the rate is \$105.00 in the USA, Canada, and Mexico, £65.00 + VAT elsewhere. Institutional access is via IP address range(s) or domain name(s); individual subscriber access is via a username and password. Prices include postage; airmail is extra. Write to Cambridge University Press, One Liberty Plaza, New York, NY 10006, or outside the USA, Canada, and Mexico to Cambridge University Press, University Printing House, Shaftesbury Road, Cambridge CB2 8BS, UK. Claims for missing issues should be made immediately after receipt of the next issue.

Periodicals postage at New York, NY and additional mailing offices. Postmaster: send address changes in the USA, Canada, and Mexico to: *Macroeconomic Dynamics*, Cambridge University Press, One Liberty Plaza, New York, NY 10006, USA. Send address changes elsewhere to: *Macroeconomic Dynamics*, Journals Dept., Cambridge University Press, University Printing House, Shaftesbury Road, Cambridge CB2 8BS, UK.

© 2017 Cambridge University Press. Photocopying information for users in the USA: The Item-Fee Code for this publication indicates that copying for internal or personal use beyond that permitted by Section 107 or 108 of the US Copyright Law is authorized for users duly registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the appropriate remittance of \$18.00 per article is paid directly to: CCC, 222 Rosewood Drive, Danvers, MA 01923. Specific written permission must be obtained from the publisher for all other copying. The Item-Fee Code for this journal is 1365-1005/16 \$18.00.

ISI Tearsheet Service, 3501 Market Street, Philadelphia, PA 19104, USA is authorized to supply single copies of separate article for private use only. Article reprints are available from the authors. For orders of 50 or more reprints, contact Cambridge University Press.

Macroeconomic Dynamics is indexed in EconLit; The Journal of Economic Literature (e-JEL and JEL on CD); ISI: Current Contents/Social & Behavioral Sciences; Social Sciences Citation Index; Research Alert; Mathematical Reviews; MathSciNet; Zentralblatt für Mathematik.

EDITORIAL POLICY

Macroeconomic Dynamics publishes research of the highest theoretical, empirical or quantitative sophistication. Papers of high quality are welcomed from all areas of advanced macroeconomics and allied fields, so long as the research is founded in a rigorous scientific approach. Major advances in macroeconomics without immediate policy applications also are accepted, if they show potential for application in the future. Occasional book reviews, software reviews, announcements, conference proceedings and interviews are published.

An **electronic version of the journal** is published just prior to the paper version at cambridge.org/mdy. Access to the full-text articles of the electronic version will be limited to institutional subscribers of the hard copy version of the journal, with access available to all online users at that institution's registered domain. Tables of Contents, abstracts, searching and alerting services will remain free of charge. To view the full text of *Macroeconomic Dynamics*, you will need to use the Adobe Acrobat Reader software. If you do not have a copy already, you can get it free of charge. Just follow the link from our Cambridge Core home page, download it, and install it as a plug-in helper application for your browser.