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Education

Ph.D. in Economics, Tilburg University, The Netherlands, Summer 2020 (expected)
Visiting Ph.D. Student, University of Wisconsin-Madison, United States, Aug-Oct 2019
Visiting Ph.D. Student, London School of Economics, United Kingdom, Feb-May 2019
MSc. in Environmental Economics, University of Bonn, Germany, 2014
BSc. in Business Economics (Finance), University of Mannheim, Germany, 2009
Undergraduate exchange study, University of Massachusetts-Amherst, United States, 2007

References

Professor Sjak Smulders

Tilburg University
Department of Economics, CentER
Room K 346, P.O. Box 90153
5000 LE Tilburg, The Netherlands
Email: j.a.smulders@uvt.nl

Professor Reyer Gerlagh

Tilburg University
Department of Economics, CentER
Room K 349, P.O. Box 90153
5000 LE Tilburg, The Netherlands
Email: r.gerlagh@uvt.nl

Professor Randall Wright

University of Wisconsin-Madison
Ray B. Zemon Professor in Liquid Assets
5262B Grainger Hall, 975 University Ave
Madison, WI 53706, United States
Email: randall.wright@wisc.edu

Research Fields

Macroeconomics with applications in monetary and environmental economics

Working Papers

Anonymity, Secondary Demand, and the Velocity of Cryptocurrency (Job Market Paper)

To fill in the gap of understanding how cryptocurrencies differ from existing electronic payment means *from the consumers' perspective* and what these differences imply, this paper generalizes the canonical search-theoretic model to capture two previously overlooked features of cryptocurrencies: 1) anonymity-seeking individuals prefer cryptocurrencies for online payments; and 2) they purchase their cryptocurrencies secondhand to avoid revealing their identities. This generalization allows demand for cryptocurrencies to be governed by not only transaction motives but also by speculation, and is capable of explaining the observed negative correlation between Bitcoin velocity and opportunity cost, contrary to the positive correlation observed in conventional currencies. I conduct a counterfactual exercise to illustrate the impact of anonymity-motivated secondary demand on cryptocurrency price, and discuss the implications for monetary policy and national security risk. Besides the application in cryptocurrencies, my model is suitable for studying the informal economy in general.

Believe It or Not: How Directed Technical Change and a Bit of Optimism Lead the Economy Towards Green Growth (with *Sjak Smulders*)

Directed technical change (DTC) may stimulate clean innovations and phase out polluting technologies, thus contributing to climate change policy. In the existing literature, market size and initial conditions determine whether the direction of technical change is clean or dirty, and path dependency arises. However, as the literature on coordination failures has pointed out in a different context, expectations play an important role in forward-looking decision makings. This paper shows how multiple equilibria easily arise in a standard workhorse model of DTC, when innovators are forward-looking. In our model there is a range of initial conditions from which both an equilibrium with clean innovation and an equilibrium with dirty innovation can emerge. With "optimistic" beliefs, the transition to clean technologies materializes, while with "pessimistic" beliefs, polluting technologies dominate in the long run. The range for which this multiplicity arises depends on the degree of substitutability of the final goods from the two sectors. Implications of the overlap for environmental policies are also investigated.

Closing the Loop in a Circular Economy: Saving Resources or Suffocating Innovations? (with *Sjak Smulders* and *Reyer Gerlagh*)

A linear economy disposes materials embodied in consumer goods. Re-use of materials in a circular economy alleviates resource scarcity, but there can be unanticipated effects on innovation and growth. We develop a two-sector endogenous growth model with Schumpeterian innovation. The primary sector is innovative: monopolists continuously develop new products and use primary resources in production. The secondary sector refurbishes retired products: it requires no primary resource for production, but also does not develop new products (and thus does not promote innovations). We find that increased refurbishing always results in less resource extraction and increases consumption in the short run, but comes at a cost of lower innovation in the transition. The overall welfare impact of higher refurbishing depends on how strong the resource-saving technology bias is. When technology is not sufficiently resource saving, increasing refurbishing always raises welfare; while welfare is hump-shaped in the refurbishing rate for large technology bias.

Work In Progress

Currency Exchange in Competitive Search Equilibrium (with *Benoit Julien* and *Randall Wright*)

Asymmetric Information and Overinvestment of Fossil Fuel Assets

Publication (pre-doctoral)

Naming and Shaming for Conservation: Evidence from the Brazilian Amazon (with *Elías Cisneros* and *Jan Börner*), PLoS ONE, 2015 10(9).

Teaching Experience

Teaching assistant for Macroeconomics I, PhD core course, Tilburg University. 2016-2018

Teaching assistant for Environmental Economics, BSc course, Tilburg University. 2017-2020

Teaching assistant for Economics 2 for IBA, BSc course, Tilburg University. 2020

Teaching assistant for Environmental Economics & Policy, MSc course, University of Bonn. 2015-2016

Second reader for Master's Theses in Economics, Tilburg University. 2017-2018

Supervision of Bachelor's Theses in Environmental Economics, University of Bonn. 2015-2016

Referee Service

Journal of Environmental Economics and Management

Conferences, Workshops and Seminars

2019: University of Wisconsin-Madison; Summer Workshop on Money, Banking, Payments and Finance at Bank of Canada; Finance Workshop at Toulouse School of Economics; University of Basel; Tilburg University

2018: XXIII Spring Meeting of Young Economists; 6th International Symposium on Environment and Energy Finance Issues; 6th World Congress of Environmental and Resource Economists (WCERE); Conference on Sustainable Resource Use and Economic Dynamics (SURED); VIII Congress of the Spanish-Portuguese Association of Environmental and Resource Economists (AERNA); Tilburg University

2017: 32nd Annual Congress of the European Economic Association; China Meeting of the Econometric Society; EAERE-FEEM-VIU European Summer School; 23rd Annual Conference of the European Association of Environmental and Resource Economists (EAERE); Tilburg University

2016: 22nd Annual Conference of the European Association of Environmental and Resource Economists (EAERE); Conference on Sustainable Resource Use and Economic Dynamics (SURED); Tilburg University

2015: Association of Environmental and Resource Economists Annual Conference (AERE); Association of German-speaking Economists Young Researcher Workshop (AUROE)

Awards

2018: AERNA Best PhD Presentation Award, AERNA 2018

2017: Most Contributing Ph.D. Student at 2017 EAERE-FEEM-VIU European Summer School (joint)

2016: Young Economist Prize for the best presentation by a PhD student, SURED 2016

2015: T. W. Schultz Award for the best paper by young professionals, ICAE 2015 (with *Elías Cisneros* and *Jan Börner*)

2014: Best Graduate of the Year in Environmental Economics, University of Bonn

Other Courses and Activities

"Liquidity: A New Monetarist Perspective", Royal Economic Society Easter Training School 2019, April 8-10, 2019

"Tools for Macroeconomists", London School of Economics, Aug 20-31, 2018

"Macroeconomics, Growth, and the Environment", EAERE-FEEM-VIU European Summer School, July 2-8, 2017

"Economic Growth", Advanced Studies Program of Kiel Institute for the World Economy, March 20-24, 2017

Previous Experience

Deutsche Telekom AG, Department of Finance, Start up! trainee program, Bonn, Germany, 2010-2013

Consulting intern, Roland Berger Strategy Consultants GmbH, Frankfurt, Germany, Oct-Dec 2008

Advisory intern, PricewaterhouseCoopers, Frankfurt, Germany, May-Jul 2007

Research intern, German Central Bank, Frankfurt, Germany, Feb-Apr 2007

Skills

Programming

Matlab, Stata, R, Dynare, \LaTeX .

Languages

Mandarin Chinese (native), English (fluent), German (fluent), Spanish (B1), Dutch (B1)

Last updated: 11th January 2020