

## Personal information

Surname / First name

**Boehl, Gregor**

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Web

<https://gregorboehl.com>

Nationality

German

## Education

2013 – 2017

PhD

CeNDEF, **University of Amsterdam** and BiGSEM, **Bielefeld University**

European Doctorate in Economics Erasmus Mundus (EDEEM) Program

Courses at Tinbergen Institute

Supervisors: Cars Hommes (UvA) and Herbert Dawid (Bielefeld U.)

2013

Master: Science Studies

Humboldt University, Germany

Discontinued for PhD

2011 – 2012

Master: Economics

University of Granada, Spain

MSc in Economics, Supervisor: Nikos Georgantzis, U. of Reading, UK

2007 – 2010

Bachelor: Economics & Social  
Science

Humboldt University Berlin & TU Dresden, Germany

BSc in Economics, Supervisor: Lutz Weinke, HU-Berlin

## References

**Prof. Dr. Herbert Dawid**

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## Grants

2014 – 2017

Bielefeld Graduate School in Economics and Management (BiGSEM) Scholarship

2013 – 2014

German Research Foundation (DFG) Fellowship, SFB 882 *“From Heterogeneities to Inequalities”*

## Research Interests

Primary

Monetary theory, inequality, financial fragility

Secondary

Computational methods: incomplete markets with heterogeneous agents, projection methods, nonlinear dynamics

## Working Papers (Selection)

**Stability and Monetary  
Policy in Economies with  
Speculative Asset Markets**  
([Job Market Paper](#))

**On the Evolutionary  
Fitness of Rationality in  
Financial Markets**  
(with Cars Hommes, UvA)

**Financial Distress and the  
Dynamics of the  
Distribution of Wealth**  
(with Thomas Fischer, Lund U.)

This paper studies the relationship between asset prices and macroeconomic aggregates, and whether monetary policy can mitigate potential spillovers from financial markets. I augment a model with financial constraints on working capital with asset markets. The presence of credit constraints links asset returns to optimal leverage and the price level. This link can induce a dynamic feedback loop that can amplify excess volatility in asset prices. I estimate this model to match key moments of empirical European data. The endogenous process of financial market speculation and the feedback from asset prices to the price level are key features to replicate these moments well, and to provide an explanation for the relationship between asset prices and macroeconomic aggregates. Nonlinear analysis suggests that central banks can offset the impact of speculation on either output or inflation by carefully targeting asset prices, but not on both, and can furthermore dampen excess volatility of stock prices. However, the scope of such policy to stabilize economic activity is limited narrowly due to its undesirable response to real economic shocks.

To study the survival properties of perfectly rational vs. boundedly rational agents, we analyse an artificial market where agents interact that are heterogeneous in their type of rationality. Whether an individual agent is perfectly rational or boundedly rational is determined endogenously depending on each types market performance. Perfect rationality implies full knowledge of the model including the non-linear switching process itself. If it exists, we find a rational expectations solution which, in each period, only depend on the state space of the original model, and show furthermore that this solution is not necessarily bounded. We use time iteration to find a recursive representation of such highly nonlinear difference equation. Depending on the parameterization, complicated and chaotic dynamics can arise that are well captured by our algorithm. We conclude that in a financial market setup boundedly rational agents are not necessarily driven out of the market and the presence of fully rational does not necessarily have stabilizing effects. In contrast, in a commodity market boundedly rational agents are driven out of the market quickly.

The sources of the recent increase in wealth inequality have not been well understood. This paper therefore builds a formal model of heterogeneous agents, starting from a standard joint problem of optimal consumption and portfolio composition with a risk-free asset and an asset paying a stochastic dividend. Moreover, we assume that individuals disagree about future returns, consistent with empirical evidence (Greenwood and Shleifer, 2014). It can be shown analytically and numerically that without government intervention this process leads to a log-normal wealth distribution whose variance explodes in time.

Thus, we introduce and compare two forms of taxation whose proceedings are redistributed to all individuals in an equivalent manner: (i) a tax on the stock level of capital and (ii) a tax on the flow of capital income. We can also derive formal conditions under which both taxes are approximately equivalent. We shown that under the taxation regime the distribution converges to an inverse gamma-distribution. The inequality of wealth decreases with the tax rate. We also provide numerical simulations for a calibrated model feed with empirical time series of tax rates, and discuss its ability to match the measured wealth inequality for several countries.

Finally, we show that a negative aggregated shock on returns contributes to higher wealth inequality, while a negative idiosyncratic shock can mitigate the degree of inequality. The former can be thought of as a negative shock to the macroeconomic climate while the latter as for example could be caused by wars or natural catastrophes. We discuss these results in the light of the historical investigation of Piketty (2014) regarding the distributional consequences of shocks.

Please find more work in progress on my personal website <https://gregorboehl.com>.

## Work Experience

Since 2016  
IT/Computing

Center for Nonlinear Dynamics in Economics and Finance (CeNDEF)  
Cluster Maintenance and Administration

2012 – 2013 IT Consultant	Freelance activity (based in Gothenburg, Sweden and Berlin, Germany) Focus on DACH market entry of francophone tech-startups and IT development
2011 – 2012 Social Worker	Youth-educational center <i>Kurt Löwenstein Haus</i> Workshops with socially deprived young people
2008 – 2011 Professional Musician and Guitar Instructor	Professional guitar player Cooperation e.g. with <i>Universal Music Group</i> and <i>HitmenMusic</i> , teaching at <i>Musikschule Dresden KOMMA, Die</i>

## Teaching

Feb – March 2017	Mathematical Economics for Econometricians, Bachelor & Master level
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## Computer Skills

Programming languages IT/Development/Web	Python, Julia, C, R, Java, JavaScript, Matlab, Mathematica, Unix shell HPC, cluster & server maintenance (Unix-like), system administration, operation of web servers, SQL, HTML
Toolkits for economics	dynare, repast, o-tree, z-tree, eviews, flame,...

## Languages

Mother tongue	<b>German</b>
Other languages	English (fluently), Spanish (fluently), French, Swedish, Dutch

## Talks Given

2017	Norges Bank, Oslo (invited seminar): <i>Stability and Monetary Policy in Economies with Speculative Asset Markets</i>
2016	4st Meeting of the German Network for New Economic Dynamics ( <b>GENED</b> ), Bamberg: <i>On the Evolutionary Fitness of Rationality in Financial Markets and Heterogeneous Investment and the Distributional Dynamics of Wealth</i>
	<b>DNB Learning Conference</b> “Expectations in Dynamic Macroeconomic Models”, Amsterdam: <i>Stability and Monetary Policy in Economies with Speculative Asset Markets</i>
	Annual <b>EDEEM</b> Meeting, Lisbon: <i>Stability and Monetary Policy in Economies with Speculative Asset Markets</i>
	22nd International Conference on Computing in Economics and Finance ( <b>CEF</b> ), Bordeaux: <i>Stability and Monetary Policy in Economies with Speculative Asset Markets</i>
	21st Annual Workshop on the Economic Science with Heterogeneous Interacting Agents ( <b>WEHIA</b> ), Castellon: <i>Stability and Monetary Policy in Economies with Speculative Asset Markets</i>
	Hamburg Complexity Workshop: <i>Bubbles, Cycles and Monetary Policy in a DSGE Model with Boundedly Rational Stock Markets</i>
	<b>CeNDEF</b> Lunch Seminar, Amsterdam: <i>Bubbles, Cycles and Monetary Policy in a DSGE Model with Boundedly Rational Stock Markets</i>
2015	2nd Meeting of the German Network for New Economic Dynamics ( <b>GENED</b> ), Darmstadt: <i>The ETACE Virtual Appliance: An Exploratory for the Eurace@Unibi Model</i>
2014	20nd International Conference on Computing in Economics and Finance ( <b>CEF</b> ), Oslo: <i>The ETACE Virtual Appliance: An Exploratory for the Eurace@Unibi Model</i>