

The Public Defense

of

the Doctoral Thesis in Economics

by

Enikő Gábor-Tóth

on

Household Heterogeneity, Trade and Macroeconomics

will be held on

Thursday, December 5, 2019 at 9:00 am

in the

Quantum room (101)

Central European University

Nádor street 15, Budapest

Thesis Committee:

Botond Kőszegi
(Chair)

Attila Rátfai
(Internal member)

László Halpern
(External member)

Supervisor:

Miklós Koren

Examiners:

Attila Rátfai, Associate Professor of Economics CEU, Budapest
(Internal Examiner)

Ana Cecília Fieler, Visiting Assistant Professor, Yale University
(External Examiner)

The doctoral thesis is available for inspection
at the CEU Department of Economics and Business

Abstract

In my doctoral thesis I focus on households and the demand side but each chapter studies households in a different context. The first chapter is a joint work with Dimitris Georgarakos and examines empirically household stockholding behavior when these are exposed to news about economic policy uncertainty. We find that households who read more, react more in their stockholding decisions to economic policy uncertainty news. Thus, the paper sheds light on an important new channel, news reading, that affects household stockholding decisions. The second chapter is a joint work with Philip Vermeulen. This chapter shows that assuming constant tastes towards product varieties has non-negligible effects for measuring price changes over time. Using a large disaggregated dataset, we find that, on average, the standard cost-of-living index has an upward bias and quantify the difference between the standard cost-of-living index and the taste adjusted cost-of-living index for ten eurozone countries. The third chapter develops a tractable model of trade in used durable goods and shows theoretically that cross-country taste differences between new and used durable goods can generate large fluctuations in international trade flows.

Chapter 1: Economic Policy Uncertainty and Stock Market Participation

Co-author: Dimitris Georgarakos

Do economic policy uncertainty news affect household stockholding? To answer this question we create a novel measure of household exposure to economic policy uncertainty news by combining survey information on the hours a household spends in reading newspapers and the frequency of such news in the popular press during a household's pre-interview period. After controlling for household fixed effects, month-year fixed effects and time-varying cognitive skills, we find that households with more exposure to economic policy uncertainty news are less likely to invest in stocks directly or through mutual funds. This effect is independent from the VIX and household stock-price expectations.

Chapter 2: The Relative Importance of Taste Shocks and Price Movements in the Variation of Cost of Living: Evidence from Barcode Data

Co-author: Philip Vermeulen

Intertemporal consumer preference shifts, although common in modern macro-economic models as drivers of demand shocks, have important but largely unexplored implications for price index theory and thus, for empirically measured price changes. The current practice of inflation measurement basically ignores taste changes and this study aims to fill this gap. We derive a cost of living index in the presence of intertemporal preference shifts and show that such taste changes tend to lower the cost of living. Using a large barcode level dataset that covers 331 product groups and ten countries, we then uncover the importance of taste changes in explaining consumer demand shifts across close substitutes. We also analyze how measured consumer price

inflation alters after allowing for taste adjustment over time and under CES preferences. To do so, we estimate the elasticity of substitution between varieties of the same good and use those to calculate goods price indexes. Our results show that the median elasticity of substitution is around 4 and find that measured average annual goods price inflation is on average about 1.1 percent lower when taking into account consumer taste shifts compared to standard goods price indexes. Our results indicate that taste changes are an important hitherto ignored factor in the measurement of cost of living changes.

Chapter 3: A Model of Trade in Used Durable Goods

This chapter examines the role of secondary markets in durable goods in cross-country trade dynamics, with a special focus on the car industry. Empirically, it documents patterns in new and used car trade flows for a sample of European Union countries. Further, it develops a two-country general equilibrium model of trade in which countries can trade on the various vintages of a single durable good. Countries can differ in their initial endowment, growth rate in the car sector and the representative household's preference for new versus older vintages. Adjustment in the level and age composition of the car stock can occur by new car production or international trade as supply of used cars is fixed by past new production. This relationship is responsible for the dynamics of the model. Trade patterns are determined by comparative advantages. The model predicts that the country that experiences a high growth rate in new car production has comparative advantage in new cars and becomes a new car exporter when trade is introduced. Further, the country that dislikes old cars relatively less will consume used cars and export new cars. Cross-country differences in tastes and growth rate in new car production influence cross-country trade dynamics. A sudden negative supply shock triggers stock adjustment in the country hit by the shock which generates large initial trade flows and muted but persistent trade flows thereafter. The chapter presents a numerical example and simulation results for the model that uses parameters calibrated to the primary and secondary car market in Germany and Hungary.

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EDUCATION AND ACADEMICS

2011 – **PhD in Economics**, Central European University (CEU), Budapest, Hungary

Supervisor: Miklós KOREN

2009 – 2011 **Master of Arts in Economics**, Central European University, Budapest, Hungary
Program: Economic Analysis

Master Degree Thesis: The Interaction Between Foreign Flows and Emerging Market Stock Returns:
The Case of Hungary, Turkey and Poland

2004 – 2009 **Masters in Business Administration**, University of Debrecen, Hungary
Specializing in: Banking and Investments

Master Degree Thesis: Yield Curves from an Empirical Perspective

Mar 2007 – Jul 2007 **Visiting student**, Department of Economics, University of Paderborn, Germany

WORK EXPERIENCE

May 2017 – present **Economist statistician**, Deutsche Bundesbank, Frankfurt, Germany

- As part of a machine learning team I am responsible for developing and maintaining a record linkage algorithm, that links company information from external and Bundesbank proprietary datasets without a common identifier, using supervised machine learning
- I am the in-house expert on household survey data from the German Panel on Household Finances; Online Expectations Survey and the OECD/INFE International Survey of Adult Financial Literacy Competencies.
- I am involved in independent research based on the analysis of unstructured data using natural language processing

July 2016 – April 2017 **Research Analyst**, European Central Bank, Frankfurt, Germany

- Responsible for successful streamlining of data management practices, automation of data access and data processing by eliminating manual data transformation, automating data retrieval, integrating heterogeneous data sources and shifting data management to rely more heavily on relational databases.
- Developed and implemented data collection strategies that improved statistical efficiency and data quality, in particular:
- Transformed and improved the quality assurance procedure for the Bank Lending Survey.
- Developed solutions using SDMX and SQL based queries in applications such as STATA, R, and MATLAB to access and manipulate data independently from the data warehouse these are stored in, FAME or SDW.

July 2014 – June 2016 **Research Assistant**, Deutsche Bundesbank Research Center, Frankfurt, Germany

- Involved in the implementation and further development of the German version of the Eurosystem survey of Household Finance and Consumption.
- Developed STATA tools to identify and implement solutions that deal with imperfections and discrepancies in the database. In particular: data cleaning, data editing, support construction of survey weights, variable flagging.
- Performed empirical analysis on the link between firm age and productivity growth, using the aggregated Longitudinal Business Database of the US Census Bureau, assisting Henning Weber with his project on “Learning by Doing in New Firms and the Optimal Rate of Inflation”.
- Became well-versed in high dimensional modelling techniques suitable to analyse models with many unknown parameters that need to be inferred from the data: models for supervised learning, e.g. penalized estimation (LASSO, Ridge), regression trees, random forests, bagging, and models for unsupervised learning, e.g. principal components, K-means and hierarchical clustering.
- Member of the Bundesbank “Big Data” Project.
- Summer school in “Big Data” and High-Dimensional Econometric Models organized by the Banca d’Italia (Instructors: Victor Chernozhukov, MIT; Christian Hansen, Chicago Booth).

January 2014 – June 2014 **PhD level trainee**, European Central Bank DG-R, Frankfurt, Germany

- Joined the Nielsen Price Analysis project coordinated by the ECB, in particular, a research project aimed at measuring elementary index bias in price indexes constructed by statistical agencies and gauging their effect on inflation measurement.
- AC Nielsen data set with over three million observations (dimensions: 13 countries, 45 product categories, three-year monthly data, 70 regions, 4 brands per product category, 3 package size per brand, and store type classification).
- Findings summarized in: Gabor, E. and Vermeulen, P. (2014), New evidence on elementary index bias, ECB working paper 1754. Link: <https://www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1754.en.pdf?224e1d07726ef5d5a188e348053f13bb>

February 2013 – December 2013 **Research Assistant**, Central Bank of Hungary, Budapest, Hungary

- Managed and prepared data for analysis by manipulating a multi-dimensional complex micro data set with over three million observations (AC Nielsen data set). Work closely with users of the database, explore information and implementation needs.
- Used STATA and SAS jointly to implement split-apply-combine techniques for database dimension reduction to enhance work efficiency.
- Supplementary data production: gathered and processed additional data necessary for performing econometric analysis. Develop expertise in best practices for data compilation and handling. Write scripts in SAS that use web scraping for automated data collection.
- Provided analytical support for the statistical and econometric analysis of single market issues, in particular for an analysis of the Law of One Price in the euro area, evaluating price harmonization almost a decade after the introduction of the Euro.
- Findings published as ECB working paper 1742 (Reiff and Rumler, 2014).

TEACHING ASSISTANT

2012/2013 FS: Advanced Microeconomics: Game Theory, PhD level course, Inst. Ádám SZEIDL
2012/2013 FS: Macroeconomics for Economic Policy, MA level course, Inst. Attila RÁTFAI
2011/2012 SS: Global Financial Markets, MA level course, Inst. Péter KONDOR
2011/2012 FS: Advanced Microeconomics: Game Theory, PhD level course, Inst. Ádám SZEIDL
2011/2012 FS: Macroeconomics for Economic Policy MA level course, Inst. Attila RÁTFAI

SKILLS

Coding experience in:

PYTHON, STATA, MATLAB, R/RStudio, SAS, SQL

Operating systems:

Microsoft Windows, Linux (Ubuntu)

Language skills:

Hungarian: native
intermediate

English: fluent

German: fluent

Romanian: